

Book Number: \_\_\_\_\_

Issued To: \_\_\_\_\_

EPA Region 5 Records Ctr.



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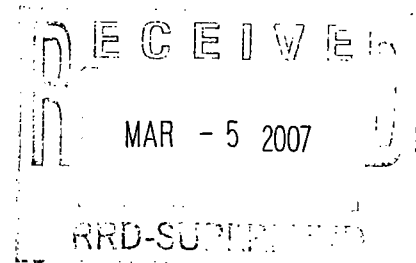
# Southwest Ottawa County Landfill Contract No. 3 – Landfill Cover

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Board of County Road Commissioners  
Ottawa County, Michigan

January 2006

2050473



**Prein & Newhof**



**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

**ADDENDUM NO. 2**  
**January 20, 2006**

**NOTICE TO PROSPECTIVE BIDDERS**

In accordance with Article 1 of the General Conditions this Addendum is hereby issued as a part of the Contract Documents.

The bidder is hereby advised of the following changes and clarifications to the Contract Documents.

**PROJECT SPECIFICATIONS – SECTION 1 – GENERAL REQUIREMENTS**

*1.4 Health and Safety and Site Safety* – Attached is Table 1

**PROJECT SPECIFICATIONS – SECTION 6 – LANDSCAPING**

*Seeding* – revise Seeding Mixture #3 to as follows:

JF New Landfill seed mixture broadcast or drill seeded at a rate of 64#/acre. Then MDOT Seeding Mixture TUF revised to eliminate Perennial Ryegrass. The JF New Landfill seed mix can be found in Appendix B.

*Seeding* – delete the last two paragraphs.

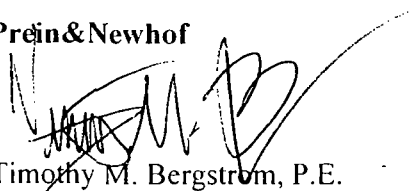
*Fertilizer* – delete the existing and replace with the following:

Fertilizer shall be a commercial chemical fertilizer with an analysis of 19-19-19, spread at a rate of 250 pounds per acre or an analysis of 12-12-12 spread at a rate of 400 pounds per acre.

*Mulch* – See “Specifications for Surface Restoration”.

Sincerely,

**Prein&Newhof**

  
Timothy M. Bergstrom, P.E.

Enclosures: Table 1





## SOUTHWEST OTTAWA COUNTY LANDFILL

2050473-3  
January, 2006

TABLE 1 - MAXIMUM CONCENTRATIONS IN GROUNDWATER

Parameter	Maximum Concentration
Iron (mg/L)	67.9
Manganese (mg/L)	0.279
1,2,4-Trimethylbenzene	15
1,2-Dichlorobenzene	1
1,4-Dichlorobenzene	6
Benzene	66
Chlorobenzene	150
Diisopropyl Ether	42
Ethyl Ether (diethyl ether)	90
Ethylbenzene	2
Isopropylbenzene	4
Naphthalene	2
n-Propylbenzene	4
Tetrahydrofuran	140
Toluene	1
Xylenes	2

- NOTES: 1. Units  $\mu\text{g/L}$  unless otherwise noted.  
2. Concentrations listed are maximums detected in 2005 monitor well and purge well samples.



**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

**ADDENDUM NO. 1**

**January 17, 2006**

**NOTICE TO PROSPECTIVE BIDDERS**

In accordance with Article 1 of the General Conditions this Addendum is hereby issued as a part of the Contract Documents.

The bidder is hereby advised of the following changes and clarifications to the Contract Documents.

**ADVERTISEMENT FOR BIDS**

*2. Scope of Project* – Delete the paragraph and replace with the following

Placing a Landfill cover with approximately 16,000 cyd of reshaping, 82,000 cyd of sand, 165,000 cyd of clay, and 40,000 cyd of topsoil.

**INFORMATION TO BIDDERS**

*J. Completion Date* – Delete the paragraph and replace with the following:

All work except restoration of the pond area, haul road from the pond area to the landfill cover area, and clay storage area shall be completed by November 15, 2006. This will be considered substantial completion. Restoration of the pond area, haul road from the pond to the landfill cover area, and clay storage area shall be completed by May 15, 2007. This will be considered ready for final payment.

**PROPOSAL**

Replace the Proposal with the attached Proposal.

**EJCDC STANDARD FORM OF AGREEMENT**

*4.02 Dates for Substantial Completion and Final Payment of Article 4* – Contract Times of the EJCDC Standard Form of Agreement, delete the existing paragraph and replace with the following:

The Work will be substantially completed on or before November 15, 2006\*, and completed and ready for final payment in accordance with paragraph 14.07 of the General Conditions on or before May 15, 2007\*.



\* All work except for restoration of the pond area, haul road from the pond area to the landfill cover area, and clay storage area shall be completed by November 15, 2006. This will be considered substantial completion. Restoration of the pond area, haul road from the pond to the landfill cover area, and clay storage area shall be completed by May 15, 2007. This will be considered ready for final payment.

## **PROJECT SPECIFICATIONS – SECTION 1 – GENERAL REQUIREMENTS**

*1.4 Site Safety* – Delete the existing section and replace with the following:

### **1.4 Health and Safety and Site Safety**

#### **1.4.1 Health and Safety**

The Southwest Ottawa County Landfill site is listed on the National Priorities List (NPL) under the 1980 Comprehensive Response, Compensation, and Liability Act (CERCLA) of 1980 as amended by the 1986 Superfund Amendments and Reauthorization Act (SUPERFUND) and on the State of Michigan's list of contaminated sites under part 201 of 1994 P.A. 451, as amended.

The Contractor shall develop a site specific Health and Safety Plan (HASP) prior to any work on the landfill or involving the relocation of existing landfilled materials. The Contractor is responsible for implementing and directing the training of personnel, providing safety equipment and incidentals as required. The plan shall incorporate and meet the requirements specified in OSHA Standard 29 CFR 1910.120 as well as any State of Michigan requirements. Table 1 contains a summary of constituents detected in groundwater samples collected from the site for use in preparing the HASP. No soil samples or samples of the fill material have been obtained. The Engineer and Owner do not represent this information as being all inclusive.

The HASP should consider the following:

- a. Hazard Evaluation: chemical and physical
- b. Levels of protection:
  - 1) Personnel protective clothing
  - 2) Respiratory protection
- c. Air Monitoring
- d. Site Control:
  - 1) Work zones
  - 2) Decontamination procedures: personnel and equipment
  - 3) Site security
- e. Contingency Plan
- f. Medical Surveillance and Certification
- g. Work Training Certification



This list is not intended to dictate requirements or to be all inclusive. The HASP shall comply with applicable federal, state and local requirements and shall be prepared by qualified personnel.

Four copies of the HASP shall be made available to the Engineer no later than seven (7) days prior to work on the existing landfill. The Engineer and Owner will not be responsible for approval of the plan or health and safety of the Contractor and its employees, or subcontractors.

No separate payment for this item will be made.

#### 1.4.2 Site Safety

Safety is of extreme importance to the Owner. The Contractor is solely responsible for site safety (OSHA). All precautions are to be taken for Public and Contractor Safety.

General site safety must be maintained at all times.

The landfill waste degradation process produces a potentially explosive environment. No smoking shall be permitted on any portion of the site.

Construction fence will be required daily around trenches, stockpiles and exposed refuse.

*Section 1.6 Soil Erosion and Sedimentation Control* – delete the first paragraph and replace with the following:

The Owner will be acting as the Authorized Public Agency with respect to Part 91 of P.A. 451.

*Section 1.13 Material Quantities* – add the following as the last sentence:

All estimated quantities listed in the plans and specifications are compacted in place (C.I.P.) quantities. The Contractor shall anticipate losses, shrinkage, etc.

### **PROJECT SPECIFICATIONS – SECTION 2 – SITE PREPARATION & SAND SUBGRADE**

*Section 2.2 Site Preparation* – delete the last sentence of the first paragraph and replace with the following:

A majority of the trees will be removed by the Owner from the sand borrow area and haul road under separate contract. The Contractor shall anticipate select trees, brush and stumps.

*Section 2.2 Site Preparation* – delete the last paragraph and replace with the following:

All trees, brush, and stumps from the clearing and brushing operations shall be disposed of by the Contractor by hauling from the site or other suitable means as approved by the Engineer.





*Section 2.4 Sand Borrow Pit Area & Pond* – delete the second to last sentence and replace with the following:

It is estimated that 82,000 cyd of sand will be removed for use as the sand subgrade and planting areas for the landfill cover.

### **PROJECT SPECIFICATIONS – SECTION 3 – CLAY & TOPSOIL HAULING**

*Section 3.2 Estimated Volume* – delete the last bullet and replace with the following:

- 40,000 cyd of Topsoil (65,000 Tons). WMI will only supply this amount for the Topsoil.

*Section 3.3 Excavating & Loading* – Add the following as the second sentence:

WMI will seek a proposal from the Contractor to provide personnel to load the clay.

*Section 3.4 Number of Required Trucks (Estimated)* – delete the first bullet and replace with the following:

- Waste Management, Inc. has the capacity to load approximately a minimum of 1,200 cyd/day (2,000 Ton/day). Some days there may be the ability to load approximately 2,400 cyd/day (4,000 Ton/day).

*Section 3.4 Number of Required Trucks (Estimated)* – add the following after the second sentence of the last paragraph:

Waste Management, Inc. will intermittently allow the Contractor to load topsoil at the same time as clay with the Contractor's equipment and personnel, provided that the Contractor's trucks are not delaying WMI's daily operations.

### **PROJECT SPECIFICATIONS – SECTION 6 – LANDSCAPING**

*Topsoil* – delete the second paragraph and replace with the following:

Topsoil shall be a minimum of 5-1/2" thick and shall be free of roots, debris, or any deleterious objects on the landfill cover area. All other areas shall have the topsoil placed at 2-1/2" thick.

### **PROJECT SPECIFICATIONS – SECTION 7 – PLANTING AREA**

Delete the last sentence and replace with the following:

These areas shall be constructed of sand covered with 5-1/2" of topsoil.



**PROJECT SPECIFICATIONS – SECTION 8 – SOIL EROSION AND SEDIMENTATION CONTROL**

Replace the first and second sentence with the following:

The Owner will be acting as the Authorized Public Agency with respect to Part 91 of P.A. 451. In order to provide soil erosion and sedimentation control the landfill cover area shall be restored as portions are completed. As the clay is placed and completed, at no time shall more than 10 acres of not have topsoil, seed, fertilizer, and mulch.

Add the following paragraphs:

Pricing is required in the proposal for installation and maintenance of silt fence. If requested the Contractor shall furnish, install and maintain silt fence in areas as specified by the Engineer at this price.

The Owner and their representatives will act as the Certified Storm Water Operator for the site.

**PLAN SHEETS**

The following clarifications or corrections shall be included on the indicated plan sheet and carried through to all other plan sheets as required:

*Sheet 3 of 5 – Planting Area Cross Section*

Revise the detail to consist of sand above the clay layer topped with 5-1/2" of topsoil.

*Sheet 3 of 5 – Estimated Approximate Earthwork Volumes*

Revise the sand volume to 82,000 CYD

Revise the Topsoil volume to 40,000 CYD

*Sheet 4 of 5 – Section A-A*

Revise the topsoil thickness in the detail to 2-1/2".

*Sheet 5 of 5 – Pressure Relief Vent*

Revise the topsoil thickness in the detail to 5-1/2".

*Sheet 5 of 5 – Typical Cover Section*

Revise the topsoil thickness in the detail to 5-1/2".



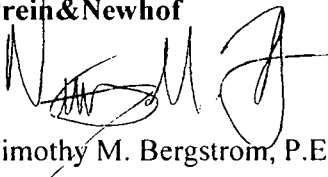
Addendum No.1  
January 17, 2006  
Page Six

**SITE PLAN - EXISTING**

The attached Sheet 1 of 1, Site Plan – Existing; has been included to aid the Contractor in verifying the estimated quantities.

Sincerely,

**Prein&Newhof**



Timothy M. Bergstrom, P.E.

Enclosures:    Proposal  
                  Table 1  
                  Sheet 1 of 1



# Prein&Newhof

Engineers ■ Surveyors ■ Environmental ■ Laboratory

## PROPOSAL

### BOARD OF COUNTY ROAD COMMISSIONERS OTTAWA COUNTY, MICHIGAN

### SOUTHWEST OTTAWA COUNTY LANDFILL CONTRACT NO. 3 – LANDFILL COVER

Ottawa County Road Commission  
PO Box 739  
14110 Lakeshore Drive  
Grand Haven, MI 49417

The undersigned, being familiar with the site, plans, specifications and related documents, proposes to furnish all required labor, tools, equipment, and material to complete the project in accordance with the lump sum price as follows:

No partial bids will be accepted.

#### RECEIPT OF ADDENDA

Receipt of Addenda \_\_\_\_\_ through \_\_\_\_\_ is hereby acknowledged.

#### AMOUNT OF BASE BID

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

#### BIDDER'S SIGNATURE

\_\_\_\_\_  
Bidder's Name Telephone Number Fax Number

\_\_\_\_\_  
Business Address City Zip Code

\_\_\_\_\_  
Signature and Title Date

(Seal - if Bidder is a corporation)





**PROPOSAL**

**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

**ACTIVITY BID INFORMATION**

The project is a lump sum contract and shall be bid in its entirety. To evaluate, allocate and track project costs, the Owner requires that the bidder provide the cost associated with each of the following activities:

- 1. Clearing and Grubbing Site: \$ \_\_\_\_\_
- 2. Pre-Cover Grading (Reshaping): \$ \_\_\_\_\_
- 3. Hauling Clay & Topsoil: \$ \_\_\_\_\_
- 4. Excavating and Hauling Sand: \$ \_\_\_\_\_
- 5. Placing & Compacting Sand: \$ \_\_\_\_\_
- 6. Placing & Compacting Clay: \$ \_\_\_\_\_
- 7. Placing & Compacting Topsoil: \$ \_\_\_\_\_
- 8. Topsoil, Fertilizer, Seed, and Mulch: \$ \_\_\_\_\_
- 9. Constructing Planting Areas: \$ \_\_\_\_\_
- 10. Pressure Relief Vents: \$ \_\_\_\_\_
- 11. Trees for Planting Areas: \$ \_\_\_\_\_
- 12. Fence Repair & Replacement: \$ \_\_\_\_\_
- 13. Miscellaneous Items: \$ \_\_\_\_\_
  
- TOTAL, LUMP SUM:** \$ \_\_\_\_\_







Book Number: \_\_\_\_\_

Issued To: \_\_\_\_\_

\_\_\_\_\_

**Southwest Ottawa County Landfill  
Contract No. 3 – Landfill Cover**

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Board of County Road Commissioners  
Ottawa County, Michigan

January 2006

2050473



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**ADVERTISEMENT FOR BIDS**

BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN

SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER

1. **RECEIPT OF BIDS**

Sealed bids for the above project will be received at the Ottawa County Road Commission Office, US-31 at Rosy Mound Drive, PO Box 739, 14110 Lake Shore Drive, Grand Haven, MI 49417.

until 1:30 p.m. local time on January 24, 2006

at which time all bids will be publicly opened and read aloud.

2. **SCOPE OF PROJECT**

The project consists of the following:

Placing a Landfill Cover with approximately 16,000 cyd of reshaping, 78,000 cyd of sand, 165,000 cyd of clay, and 57,000 cyd of topsoil.

3. **EXAMINATION OF PLANS AND SPECIFICATIONS**

Plans and specifications may be examined at the offices of:

Ottawa County Road Commission, Rosy Mound Drive @ US-31, Grand Haven, MI 49417  
Prein&Newhof, 3355 Evergreen Drive NE, Grand Rapids, MI 49525  
Prein&Newhof, 258 James Street, Holland, MI 49424  
F.W. Dodge, 2922 Fuller NE, Suite 118, Grand Rapids, MI 49505  
Builders Exchange, 4461 Cascade SE, Grand Rapids, MI 49546

4. **FEE FOR PLANS AND SPECIFICATIONS**

Plans and specifications are available at the office of Prein&Newhof, 3355 Evergreen NE, Grand Rapids, MI. A fee of fifty (\$50) dollars will be required for each set of plans and specifications (\$55 if mailed). The fee is non-refundable.

5. **BID SURETY**

A bid bond or certified check payable to the Board of County Road Commissioners, Ottawa County, Michigan in the amount of 5% of the total price of the bid shall accompany each bid. This surety shall bind the bidder for a period of 60 days after the Receipt of Bids.

6. FUNDING

The work to be performed will be financed by funds on hand at County of Ottawa, Ottawa County, Michigan.

7. RIGHT TO REJECT BIDS

The Owner reserves the right to waive any irregularities in any bids and the right to reject any or all bids in the Owner's best interest.

Board of County Road Commissioners  
Ottawa County, Michigan

David VanderKooi, Chairman

INFORMATION TO BIDDERS

BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN

SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER

1. CONTRACT DOCUMENTS

The contract documents consist of material outlined in Article 6 of the Agreement. Each bidder shall carefully examine his copy of the contract documents for completeness. No claim will be allowed on the basis that the contract documents and specification are not complete.

2. INTERPRETATION OF THE CONTRACT DOCUMENTS

It is the intent of these contract documents to be as clear, complete and consistent as possible. If any portion of the contract documents appear ambiguous, inconsistent, or appears to contain omissions, the bidder shall request the Engineer, in writing, for an official interpretation or correction of the documents. This interpretation or correction will be made a part of the contract documents as an addendum. It shall be mailed or delivered to each person recorded as having received a copy of the contract documents.

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

If there are any questions concerning the specifications contained in this Bid Request, please contact Tim Bergstrom, P.E. of Prein&Newhof at (616) 364-8491.

3. BIDDERS INVESTIGATION

The bidder will be responsible for inspecting the site of the proposed work and to determine for himself all conditions under which he will be obligated to work. It is also expected that he will obtain first hand information concerning the available facilities for receiving, transporting, handling and storing construction equipment and materials, and concerning other local conditions that may affect his work.

4. FUNDS AVAILABLE

The work to be performed under this contract will be financed by funds on hand at the County of Ottawa, Ottawa County, Michigan.

5. WITHDRAWAL OF BIDS

Any bidder who has submitted a proposal to the Owner may withdraw his bid at any time prior to the scheduled time for the receipt of bids. No bidder may withdraw his bid after the time stated in the Advertisement for opening bids, for a period of 60 days thereafter.

6. PROPOSAL PREPARATION

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

Anyone signing a proposal as an agent of another must submit, with his proposal, legal evidence of his authority to do so.

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

- B. Proposal Form

All proposals must be signed by the bidder on the form attached hereto. It shall be submitted intact as originally bound. Additional copies of the proposal form for the bidders file may be obtained upon request at the office of the Engineer.

The proposal for work is on a lump sum basis. Illegibility of any work or figure in the proposal may be sufficient cause for rejection of the proposal by the Owners.

Each proposal must be enclosed in a sealed envelope addressed to Ottawa County Road Commission, Ottawa County, Michigan and should be labeled "Proposal for Southwest Ottawa County Landfill, Contract No. 3 – Landfill Cover". The sealed proposal envelope should be to the attention of Mr. Kenneth Zarzecki, P.E..

- C. Proposal Data

Proposals shall be carefully prepared in strict accordance with contract requirements and these instructions, otherwise the bid may be rejected and not considered in the award of the contract. The proposal form requires the bidder to submit pertinent information. Failure of the bidder to submit the required information or the submission of information in an incomplete form may be cause for rejection of the entire proposal.

The proposal for work is on a lump sum basis.

The project shall be bid in its entirety. No partial bids will be considered.

D. Experience and Qualifications

It is the intention of the Owner to award these contracts to a bidder, or bidders to perform and complete all work in a very satisfactory manner. Bids are therefore only solicited from responsible bidders known to be skilled and regularly engaged in work of similar character and magnitude to that covered by these contract documents.

After the opening of bids, when so requested by the Engineer, the Bidder will be required to give information as to the extent and nature of his experience in work of this kind and to furnish references as to his business standing and general ability. The successful Bidder shall submit a statement of his experience and financial status, a list of all jobs he now has underway, with the volume and percent complete.

In addition to the above, when so requested, the Bidder shall meet with the Owner's representatives and give further information in relation to his proposed tentative construction plan and schedule of operations, in order to determine the Bidder's qualifications, responsibility, ability to perform, and complete the work in accordance with the contract requirements.

E. Bid Deposits

A certified check, cashier check, money order, or bid bond by corporate surety licensed to underwrite bids in the State of Michigan, in the amount of five percent (5%) of the amount bid, payable to the Board of County Road Commissioners, Ottawa County, will be required with each bid.

F. Return of Bid Deposits

The bid deposits of all except the three lowest bidders, will be returned within three days after the opening of the bids. The bid deposits of the three lowest bidders will be returned within 48 hours after the contract shall have been awarded to the successful bidder, the signed agreement has been delivered, and the required bonds have been finally approved, or after rejection of all bids.

G. Forfeiture of Bid Guarantees

In the event of the successful Bidder refusing to enter into contract and bonds and proceed with the work or failing to execute the contract and bonds within ten days after formal notification of award, then a sum not to exceed five percent (5%) of the amount of the bid shall be forfeited to the County of Ottawa in lieu of performance and as liquidated damages.

H. Performance and Payment Bonds

The successful bidder will be required to furnish satisfactory performance and payment bonds in the amount of one hundred percent (100%) of the contract naming the Ottawa County Road Commission and Park Township.

I. Bid Opening

Bids will be opened and read publicly at the Ottawa County Road Commission Office, US-31 at Rosy Mound Drive, PO Box 739, 14110 Lake Shore Drive, Grand Haven, MI 49417 at 1:30 PM, local time, January 24, 2006.

No late bids will be accepted. No bid award will be made at the time of opening.

A purchase order will be issued to the successful Contractor after the bid has been awarded by the Board.

After the award is made, a letter containing the bid results will be sent to the contractors submitting a bid.

J. Completion Date

All work shall be completed by November 1, 2006.

K. Liquidated Damages and Expenses

1. Liquidated Damages – The Contractor guarantees that he can and will complete the work within the time limit stated on the contract documents. Inasmuch as the damage and loss to the Owner which will result from the failure of the Contractor to complete the work within the stipulated time will be more difficult or impossible to determine accurately, it is mutually agreed that the damages to the Owner for such delay and failure on the part of the Contractor shall be in the amount of \$1,000.00 for each and every calendar day by which the Contractor shall fail to complete the work or any part thereof and such liquidated damages shall not be considered a penalty.

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

2. Expenses – The Contractor shall pay all expenses incurred by the Owner for engineering services after the date fixed for completion.

The Owner will deduct and retain out of any money due or to become due thereunder the amount of the liquidated damages and expenses, and in case the

amount of money due is less than the amount of liquidated damages and expenses, the Contractor shall pay the difference upon demand of the Owner.

L. Exceptions

The bidder shall furnish a statement on company letterhead giving a complete description of all exceptions to the terms, conditions and specifications. Failure to furnish the statement will mean that the bidder agrees to meet all requirements of the terms, conditions and specifications.

8. BONDS AND INSURANCE

See General Conditions, Article 5, Supplemental Conditions and insurance specifications, pages 1-7 for requirements.

9. AWARD AND EXECUTION OF THE CONTRACT

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

The bidder to whom the contract shall have been awarded will be required to execute an Agreement in the form attached and to furnish sureties, insurance policies and certificates all as required within ten (10) days after the award. In case of his refusal or failure to do so, he will be considered to have abandoned all his rights and interest in the award, and his bid deposit may be declared forfeited to the Owner and the work may be awarded to another.

10. PERMITS

The Owner will obtain a Soil Erosion and Sedimentation Control Permit from the Ottawa County Drain Commissioner. Also a NPDES Notice of Coverage permit will be obtained.

The Contractor shall obtain any other permits necessary for construction of this project. The Contractor shall pay for any charges or bonds required by agencies for permits, inspections, or similar charges to construct this project as shown on the plans.

11. STAKING, CONTROLS, MONUMENTS

The Owner will provide control stakes for alignment and grade of the proposed improvements. The contractor shall preserve these controls and shall furnish additional intermediate controls to assure accurate line and grade. The Contractor shall pay for replacement of destroyed controls and benchmarks or monuments.





**BID PROPOSAL CHECK LIST**

**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

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

1. Bid submitted on time.
2. Bid surety properly completed and enclosed.
3. Addenda, if applicable, has been acknowledged and any revisions to the proposal completed.
4. Bid proposal legally signed in ink.
5. Contract price completed in ink.
6. Sub-Contractor and Supplier listing completely filled out



**PROPOSAL**

**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

Ottawa County Road Commission  
PO Box 739  
14110 Lakeshore Drive  
Grand Haven, MI 49417

The undersigned, being familiar with the site, plans, specifications and related documents, proposes to furnish all required labor, tools, equipment, and material to complete the project in accordance with the lump sum price as follows:

No partial bids will be accepted.

**RECEIPT OF ADDENDA**

Receipt of Addenda \_\_\_\_\_ through \_\_\_\_\_ is hereby acknowledged.

**AMOUNT OF BASE BID**

\_\_\_\_\_ Dollars (\$ \_\_\_\_\_)

**BIDDER'S SIGNATURE**

\_\_\_\_\_  
Bidder's Name Telephone Number Fax Number

\_\_\_\_\_  
Business Address City Zip Code

\_\_\_\_\_  
Signature and Title Date

(Seal - if Bidder is a corporation)



**PROPOSAL**

**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

**ACTIVITY BID INFORMATION**

The project is a lump sum contract and shall be bid in its entirety. To evaluate, allocate and track project costs, the Owner requires that the bidder provide the cost associated with each of the following activities:

- |                                          |                 |
|------------------------------------------|-----------------|
| 1. Clearing and Grubbing Site:           | \$ _____        |
| 2. Pre-Cover Grading (Reshaping):        | \$ _____        |
| 3. Hauling Clay & Topsoil:               | \$ _____        |
| 4. Excavating and Hauling Sand:          | \$ _____        |
| 5. Placing & Compacting Sand:            | \$ _____        |
| 6. Placing & Compacting Clay:            | \$ _____        |
| 7. Placing & Compacting Topsoil:         | \$ _____        |
| 8. Topsoil, Fertilizer, Seed, and Mulch: | \$ _____        |
| 9. Constructing Planting Areas:          | \$ _____        |
| 10. Air Relief Vents:                    | \$ _____        |
| 11. Trees for Planting Areas:            | \$ _____        |
| 12. Fence Repair & Replacement:          | \$ _____        |
| 13. Miscellaneous Items:                 | \$ _____        |
| <b>TOTAL, LUMP SUM:</b>                  | <b>\$ _____</b> |



**EJCDC  
STANDARD FORM OF AGREEMENT  
BETWEEN OWNER AND CONTRACTOR  
ON THE BASIS OF A STIPULATED PRICE**

**THIS AGREEMENT** is by and between Board of County Road Commissioners, Ottawa County, Michigan

(hereinafter called OWNER) and \_\_\_\_\_

(hereinafter called CONTRACTOR).

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

**ARTICLE 1 - WORK**

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

Construction of a Landfill Cover and other site grading, including all appurtenances.

**ARTICLE 2 - THE PROJECT**

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

Southwest Ottawa County Landfill, Contract No. 3 – Landfill Cover

**ARTICLE 3 - ENGINEER**

The Project has been designed by

Prein&Newhof  
3355 Evergreen Drive, N.E.  
Grand Rapids, MI 49525

who is hereinafter called ENGINEER and who is to act as OWNER's representative, assume all duties and responsibilities, and have the rights and authority assigned to ENGINEER in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

## ARTICLE 9 - CONTRACT DOCUMENTS

### 9.01 Contents

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to 8 , inclusive);
  2. Performance Bond (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
  3. Payment Bonds (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
  4. Other Bonds (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - a. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - b. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - c. \_\_\_\_\_ (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
  5. General Conditions (pages 1 to 42 , inclusive);
  6. Supplementary Conditions (pages 1 to 14 , inclusive);
  7. Specifications as listed in table of contents of the Project Manual;
  8. Drawings consisting of a cover sheet and sheets numbered 1 through 5, inclusive, with each sheet bearing the following general title: \*See Below;
  9. Addenda (numbers \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
  10. Exhibits to this Agreement (enumerated as follows):
    - a. Notice to Proceed (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - b. CONTRACTOR's Bid (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - c. Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_ , inclusive);
    - d. \_\_\_\_\_;
  11. Documentation submitted by CONTRACTOR prior to Notice of Award (pages \_\_\_\_\_ to \_\_\_\_\_ inclusive);
  12. The following which may be delivered or issued on or after the Effective Date of the Agreement and are not attached hereto:
    - a. Written Amendments;
    - b. Work Change Directives;
    - c. Change Order(s).
- B. The documents listed in paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. There are no Contract Documents other than those listed above in this Article 9.
- D. The Contract Documents may only be amended, modified, or supplemented as provided in paragraph 3.04 of the General Conditions.

\*Included in the Contract Documents are the above identified documents along with all documents as listed in the Table of Contents for specification titled "Southwest Ottawa County Landfill, Contract No. 3 – Landfill Cover."



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

This Agreement will be effective on \_\_\_\_\_, 20 05 (which is the Effective Date of the Agreement).

OWNER Board of County Road Commissioners, Ottawa Co.

CONTRACTOR \_\_\_\_\_

By: \_\_\_\_\_

By: \_\_\_\_\_

[CORPORATE SEAL]

[CORPORATE SEAL]

Attest \_\_\_\_\_

Attest \_\_\_\_\_

Address for giving notices:

Address for giving notices:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

(If OWNER is a corporation, attach evidence of authority to sign. If OWNER is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of OWNER-CONTRACTOR Agreement.)

License No. \_\_\_\_\_  
(Where applicable)

Agent for service of process: \_\_\_\_\_  
\_\_\_\_\_

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

Designated Representative:

Designated Representative:

Name: \_\_\_\_\_

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_

Phone: \_\_\_\_\_

Phone: \_\_\_\_\_

Facsimile: \_\_\_\_\_

Facsimile: \_\_\_\_\_



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

# STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by

ENGINEERS JOINT CONTRACT DOCUMENTS COMMITTEE

and

Issued and Published Jointly By



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

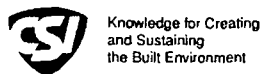
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The Associated General Contractors of America



Construction Specifications Institute

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

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

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

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## GENERAL CONDITIONS

### ARTICLE 1 - DEFINITIONS AND TERMINOLOGY

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#### 1.01 *Defined Terms*

A. Wherever used in the Bidding Requirements or Contract Documents and printed with initial capital letters, the terms listed below will have the meanings indicated which are applicable to both the singular and plural thereof. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.

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

2. *Agreement*--The written instrument which is evidence of the agreement between Owner and Contractor covering the Work.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

30. *PCBs*--Polychlorinated biphenyls.

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

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

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

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

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

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

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

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

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

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

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

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

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

administrative requirements and procedural matters applicable thereto.

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

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

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

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

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

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

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

51. *Work*--The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction, and furnishing, installing, and incorporating all materials and equipment into such construction, all as required by the Contract Documents.

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

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

## 1.02 *Terminology*

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

### B. *Intent of Certain Terms or Adjectives*

1. The Contract Documents include the terms "as allowed," "as approved," "as ordered," "as directed" or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives "reasonable," "suitable," "acceptable," "proper," "satisfactory," or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action or determination will be solely to evaluate, in general, the Work for compliance with the requirements of and information in the Contract Documents and conformance with the design concept of the completed Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility contrary to the provisions of Paragraph 9.09 or any other provision of the Contract Documents.

### C. *Day*

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

### D. *Defective*

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

a. does not conform to the Contract Documents, or

b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents, or

c. has been damaged prior to Engineer's recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 14.04 or 14.05).

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

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

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

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

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

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

## ARTICLE 2 - PRELIMINARY MATTERS

### 2.01 *Delivery of Bonds and Evidence of Insurance*

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

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

### 2.02 *Copies of Documents*

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

### 2.03 *Commencement of Contract Times; Notice to Proceed*

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

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

### 2.04 *Starting the Work*

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

### 2.05 *Before Starting Construction*

A. *Preliminary Schedules:* Within 10 days after the Effective Date of the Agreement (unless otherwise specified in the General Requirements), Contractor shall submit to Engineer for timely review:

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

2. a preliminary Schedule of Submittals; and

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

### 2.06 *Preconstruction Conference*

A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.05.A, procedures for handling Shop Drawings and other submittals, processing Applications for Payment, and maintaining required records.

### 2.07 *Initial Acceptance of Schedules*

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

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

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

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

### ARTICLE 3 - CONTRACT DOCUMENTS: INTENT, AMENDING, REUSE

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#### 3.01 Intent

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

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

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

#### 3.02 Reference Standards

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

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

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

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

#### 3.03 Reporting and Resolving Discrepancies

##### A. Reporting Discrepancies

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

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

3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor knew or reasonably should have known thereof.

##### B. Resolving Discrepancies

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

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

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

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

### 3.04 *Amending and Supplementing Contract Documents*

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

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

1. A Field Order;

2. Engineer's approval of a Shop Drawing or Sample; (Subject to the provisions of Paragraph 6.17.D.3); or

3. Engineer's written interpretation or clarification.

### 3.05 *Reuse of Documents*

A. Contractor and any Subcontractor or Supplier or other individual or entity performing or furnishing all of the Work under a direct or indirect contract with Contractor, shall not:

1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or Engineer's consultants, including electronic media editions; or

2. reuse any of such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaption by Engineer.

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

### 3.06 *Electronic Data*

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

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

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

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

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

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### 4.01 *Availability of Lands*

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

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

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

#### 4.02 *Subsurface and Physical Conditions*

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

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

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

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

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

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

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

#### 4.03 *Differing Subsurface or Physical Conditions*

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

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

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

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

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

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

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

#### C. *Possible Price and Times Adjustments*

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

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

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

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

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

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

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

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

#### 4.04 *Underground Facilities*

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

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

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

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

#### B. *Not Shown or Indicated*

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

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

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

#### 4.05 *Reference Points*

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

#### 4.06 *Hazardous Environmental Condition at Site*

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

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

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

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

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

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

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

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

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

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

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

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

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

## ARTICLE 5 - BONDS AND INSURANCE

### 5.01 *Performance, Payment, and Other Bonds*

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



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

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

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

#### 5.02 *Licensed Sureties and Insurers*

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

#### 5.03 *Certificates of Insurance*

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

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

#### 5.04 *Contractor's Liability Insurance*

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

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

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

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

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

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

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

b. by any other person for any other reason;

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

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

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

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

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

3. include completed operations insurance;

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

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

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

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

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

#### 5.05 *Owner's Liability Insurance*

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

#### 5.06 *Property Insurance*

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

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

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

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

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

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

6. include testing and startup; and

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

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

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

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

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

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

#### 5.07 *Waiver of Rights*

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

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

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

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

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

#### 5.08 *Receipt and Application of Insurance Proceeds*

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

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

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

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

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

#### 5.10 *Partial Utilization, Acknowledgment of Property Insurer*

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

## ARTICLE 6 - CONTRACTOR'S RESPONSIBILITIES

### 6.01 *Supervision and Superintendence*

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

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

received from the superintendent shall be binding on Contractor.

### 6.02 *Labor; Working Hours*

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

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

### 6.03 *Services, Materials, and Equipment*

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

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

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

### 6.04 *Progress Schedule*

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

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

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

#### 6.05 *Substitutes and "Or-Equals"*

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

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

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

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

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

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

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

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

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

#### 2. Substitute Items

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

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

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

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

1) shall certify that the proposed substitute item will:

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

b) be similar in substance to that specified, and

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

2) will state:

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

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

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

3) will identify:

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

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

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

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

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

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

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

Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

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

#### 6.06 Concerning Subcontractors, Suppliers, and Others

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

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

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

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

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

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

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

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

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

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

#### 6.07 *Patent Fees and Royalties*

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

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

#### 6.08 *Permits*

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

#### 6.09 *Laws and Regulations*

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

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

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

6.10 *Taxes*

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

6.11 *Use of Site and Other Areas*

A. *Limitation on Use of Site and Other Areas*

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

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

3. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused by or based upon Contractor's performance of the Work.

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

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

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

6.12 *Record Documents*

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

6.13 *Safety and Protection*

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

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

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

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

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

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



ings or Specifications or to the acts or omissions of Owner or Engineer or , or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

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

#### 6.14 *Safety Representative*

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

#### 6.15 *Hazard Communication Programs*

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

#### 6.16 *Emergencies*

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

#### 6.17 *Shop Drawings and Samples*

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

##### 1. Shop Drawings

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

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

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

a. Submit number of Samples specified in the Specifications.

b. Clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 6.17.D.

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

##### C. Submittal Procedures

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

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

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

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

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

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

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

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

#### D. Engineer's Review

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

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

3. Engineer's review and approval shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 6.17.C.3 and Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer's review and approval shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 6.17.C.1.

#### E. Resubmittal Procedures

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

#### 6.18 Continuing the Work

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

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

#### 6.19 Contractor's General Warranty and Guarantee

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

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

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

2. normal wear and tear under normal usage.

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

1. observations by Engineer;

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

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

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

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

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

7. any correction of defective Work by Owner.

#### 6.20 Indemnification

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

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

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

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

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

#### 6.21 *Delegation of Professional Design Services*

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

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

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

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

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

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

## ARTICLE 7 - OTHER WORK AT THE SITE

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### 7.01 *Related Work at Site*

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

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

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

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

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

#### 7.02 *Coordination*

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

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

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

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

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

#### 7.03 *Legal Relationships*

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

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

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

## ARTICLE 8 - OWNER'S RESPONSIBILITIES

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### 8.01 *Communications to Contractor*

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

### 8.02 *Replacement of Engineer*

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

### 8.03 *Furnish Data*

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

### 8.04 *Pay When Due*

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

### 8.05 *Lands and Easements; Reports and Tests*

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

### 8.06 *Insurance*

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

### 8.07 *Change Orders*

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

### 8.08 *Inspections, Tests, and Approvals*

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

8.09 *Limitations on Owner's Responsibilities*

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

8.10 *Undisclosed Hazardous Environmental Condition*

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

8.11 *Evidence of Financial Arrangements*

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

ARTICLE 9 - ENGINEER'S STATUS DURING CONSTRUCTION

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9.01 *Owner's Representative*

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

9.02 *Visits to Site*

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

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

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

9.03 *Project Representative*

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

9.04 *Authorized Variations in Work*

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

9.05 *Rejecting Defective Work*

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

9.06 *Shop Drawings, Change Orders and Payments*

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

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

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

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

9.07 *Determinations for Unit Price Work*

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

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

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

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

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

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

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

9.09 *Limitations on Engineer's Authority and Responsibilities*

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

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

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

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

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

ARTICLE 10 - CHANGES IN THE WORK; CLAIMS

10.01 *Authorized Changes in the Work*

A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work by a Change Order, or a Work Change Directive. Upon receipt of any such document, Contractor shall

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

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

#### 10.02 *Unauthorized Changes in the Work*

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

#### 10.03 *Execution of Change Orders*

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

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

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

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

#### 10.04 *Notification to Surety*

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

#### 10.05 *Claims*

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

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

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

1. deny the Claim in whole or in part,

2. approve the Claim, or

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

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

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

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

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

### 11.01 *Cost of the Work*

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

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

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

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

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

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

5. Supplemental costs including the following:

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

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

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

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

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

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



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

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

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

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

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

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

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

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

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

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

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

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

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

## 11.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

### B. Cash Allowances

1. Contractor agrees that:

a. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and

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

### C. Contingency Allowance

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

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

## 11.03 Unit Price Work

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

B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Engineer subject to the provisions of Paragraph 9.07.

C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

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

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

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

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

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

### 12.01 *Change of Contract Price*

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

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

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

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

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

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

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

1. a mutually acceptable fixed fee; or

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

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

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

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

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

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

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

### 12.02 *Change of Contract Times*

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

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

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

### 12.03 Delays

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

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

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

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

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

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

### 13.01 Notice of Defects

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

### 13.02 Access to Work

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

### 13.03 Tests and Inspections

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

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

1. for inspections, tests, or approvals covered by Paragraphs 13.03.C and 13.03.D below;
2. that costs incurred in connection with tests or inspections conducted pursuant to Paragraph 13.04.B shall be paid as provided in said Paragraph 13.04.C; and
3. as otherwise specifically provided in the Contract Documents.

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

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

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

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

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

#### 13.04 *Uncovering Work*

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

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

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

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

#### 13.05 *Owner May Stop the Work*

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

#### 13.06 *Correction or Removal of Defective Work*

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

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

#### 13.07 *Correction Period*

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

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

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

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

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

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

#### 13.08 *Acceptance of Defective Work*

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

#### 13.09 *Owner May Correct Defective Work*

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

B. In exercising the rights and remedies under this Paragraph 13.09, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, take possession of Contractor's tools, appliances, construction equipment and machinery at the Site, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this Paragraph.

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

D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 13.09.

### ARTICLE 14 - PAYMENTS TO CONTRACTOR AND COMPLETION

#### 14.01 *Schedule of Values*

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

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

#### 14.02 Progress Payments

##### A. Applications for Payments

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

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

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

##### B. Review of Applications

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

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

a. the Work has progressed to the point indicated;

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

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

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

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

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

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

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

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

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

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

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

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

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

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

#### C. *Payment Becomes Due*

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

#### D. *Reduction in Payment*

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

- a. claims have been made against Owner on account of Contractor's performance or furnishing of the Work;
- b. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
- c. there are other items entitling Owner to a set-off against the amount recommended; or
- d. Owner has actual knowledge of the occurrence of any of the events enumerated in Paragraphs 14.02.B.5.a through 14.02.B.5.c or Paragraph 15.02.A.

2. If Owner refuses to make payment of the full amount recommended by Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, when Contractor corrects to Owner's satisfaction the reasons for such action.

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

#### 14.03 *Contractor's Warranty of Title*

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

#### 14.04 *Substantial Completion*

A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete (except for items specifically listed by Contractor as incomplete) and request that Engineer issue a certificate of Substantial Completion.

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

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

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

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

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

#### 14.05 *Partial Utilization*

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

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

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

3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 14.04 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.

4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 5.10 regarding property insurance.

#### 14.06 *Final Inspection*

A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals

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

#### 14.07 *Final Payment*

##### A. *Application for Payment*

1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance certificates of inspection, marked-up record documents (as provided in Paragraph 6.12), and other documents, Contractor may make application for final payment following the procedure for progress payments.

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

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

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

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

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

3. In lieu of the releases or waivers of Liens specified in Paragraph 14.07.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (i) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (ii) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner or Owner's property might in any way be responsible have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien.

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

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



under the Contract Documents have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of payment and present the Application for Payment to Owner for payment. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable subject to the provisions of Paragraph 14.09. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

#### C. Payment Becomes Due

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

#### 14.08 Final Completion Delayed

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

#### 14.09 Waiver of Claims

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

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

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

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

## ARTICLE 15 - SUSPENSION OF WORK AND TERMINATION

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### 15.01 Owner May Suspend Work

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

### 15.02 Owner May Terminate for Cause

A. The occurrence of any one or more of the following events will justify termination for cause:

1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule established under Paragraph 2.07 as adjusted from time to time pursuant to Paragraph 6.04);

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

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

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

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

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

2. incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and

3. complete the Work as Owner may deem expedient.

C. If Owner proceeds as provided in Paragraph 15.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by Owner arising out of or relating to completing the Work, such excess will be paid to Contractor. If such claims, costs, losses, and damages exceed such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When exercising any rights or remedies under this Paragraph Owner shall not be required to obtain the lowest price for the Work performed.

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

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

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

#### 15.03 *Owner May Terminate For Convenience*

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

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

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

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

4. reasonable expenses directly attributable to termination.

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

#### 15.04 *Contractor May Stop Work or Terminate*

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

B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this Paragraph 15.04 are not intended to preclude Contractor from making a Claim under Paragraph 10.05 for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this Paragraph.

## ARTICLE 16 - DISPUTE RESOLUTION

### 16.01 *Methods and Procedures*

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

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

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

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

1. elects in writing to invoke any dispute resolution process provided for in the Supplementary Conditions, or
2. agrees with the other party to submit the Claim to another dispute resolution process, or
3. gives written notice to the other party of their intent to submit the Claim to a court of competent jurisdiction.

## ARTICLE 17 - MISCELLANEOUS

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### 17.01 *Giving Notice*

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

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

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

### 17.02 *Computation of Times*

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

### 17.03 *Cumulative Remedies*

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

### 17.04 *Survival of Obligations*

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

### 17.05 *Controlling Law*

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

### 17.06 *Headings*

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



SUPPLEMENTARY CONDITIONS

2050473

**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction contract (No. 1910-8, 1996 Edition) and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

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

1. SUMMARY OF THE WORK

All work shown on the drawings and specified herein consists of furnishing all materials, construction, testing and placing in operation landfill cover and site grading improvements to Southwest Ottawa County Landfill, Ottawa County, Michigan.

All labor, material, equipment, transportation, and other work or costs necessary for the completion of this work shall be included in this contract unless specifically stated otherwise.

2. INTENT

The existing site has leachate contaminating the groundwater and leaving the site southwest of the cover. It is the intent of this project to cover the landfill to prevent rainfall from entering the fill and then the contaminating the groundwater with VOC's from the leachate.

It is the intent of these documents and drawings to provide improvements for the Ottawa County Road Commission which will entail a minimum of maintenance in the future years and shall be aesthetically acceptable to the citizens of the area.

3. GENERAL CONDITIONS

The Standard General conditions of the Construction Contract, EJCDC No. 1910-8 (1996 Edition), Articles 1 through 17 inclusive, are hereby made a part of these specifications. Paragraph 4 contains amplifications and modifications to the General Conditions.

4. AMPLIFICATIONS AND MODIFICATIONS OF THE GENERAL CONDITIONS

A. Article 1 - Definitions and Terminology

1.01 *Defined Terms*

19. Engineer - Prein&Newhof, Grand Rapids, Michigan.

30. Owner – Board of County Road Commissioners, Ottawa County, Michigan

1.02 *Terminology*

Add the following paragraph in Section 1.02 immediately after paragraph 1.02.E:

F. *CONTRACTOR*

1. The use of the term CONTRACTOR as used in sections set forth in subparagraph 1.02.F.1.a. below shall include CONTRACTOR and its employees, all subcontractors and their employees and suppliers and their employees.

a. 2.04, 2.05, 3.03, 4.02, 4.03, 4.04, 4.05, 4.06, 6.01.A, 6.02, 6.09, 6.11, 6.13, 6.17.E.3, 6.18, 6.20, 9.02, 9.04, 9.08, 9.10.B and 14.02.

B. Article 2 - Preliminary Matters

Amend the following paragraphs in Article 2, Section 2.07 to read as follows:

2.07 *Initial Acceptance of Schedules*

A. Upon OWNER'S or CONTRACTOR'S request at least ten days before submission of the first Application for Payment a conference attended by CONTRACTOR, OWNER, ENGINEER and others as appropriate will be held to review for acceptability to OWNER as provided below the schedules submitted in accordance with paragraph 2.05.B. CONTRACTOR shall have an additional ten days to make corrections and adjustments and to complete and resubmit the schedules. Upon notice by OWNER, no progress payment shall be made to CONTRACTOR until acceptable schedules are submitted and accepted by OWNER.

1. The progress schedule will be acceptable to OWNER if it provides an orderly progression of the Work to completion with any specified Milestones, the Contract time and if acceptable to ENGINEER. Such acceptance will not impose on OWNER or ENGINEER responsibility for the progress schedule, for sequencing, scheduling, or progress of the Work nor interfere with or relieve CONTRACTOR from CONTRACTOR'S full responsibility therefore.

2. CONTRACTOR'S schedule of Shop Drawings and Sample submittals will be acceptable to ENGINEER if it provides a workable arrangement for reviewing and processing the required submittals.

3. CONTRACTOR'S schedule of values will be acceptable to ENGINEER as to form and substance if it provides a reasonable allocation of the Contract Price to component parts of the Work.

C. Article 4 - Availability of Lands; Subsurface and Physical Conditions; Reference Points

Amend the following paragraphs in Section 4.02 to read:

4.02 *Subsurface and Physical Conditions*

A. *Reports and Drawings*: The Contract Documents may identify:

1. soil borings, existing plans, drawings, surveys or other reports of explorations of subsurface conditions at or contiguous to the Site that ENGINEER has used in preparing the Contract Documents; and
2. those drawings of physical conditions in or relating to existing surface or subsurface structures at or contiguous to the Site, (Except Underground Facilities) that ENGINEER has used in preparing the Contract Documents.

B. CONTRACTOR may not rely upon the *Reports and Drawings* referenced in paragraph 4.02.A or make any claim against OWNER, ENGINEER, or any of ENGINEER'S Consultants or Subcontractors related to the *Reports and Drawings*. This limitation includes but is not limited to:

1. the completeness of such *Reports and Drawings* for CONTRACTOR'S purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by CONTRACTOR, and safety precautions and programs incident thereto; or
2. other data, interpretations, opinions, and information contained in or shown or indicated in the *Reports and Drawings*; or
3. any CONTRACTOR interpretation of or conclusion drawn from any of the *Reports and Drawings* or any other data, interpretations, opinions or information referenced in the *Reports and Drawings*; or
4. Soil borings that have been made by ENGINEER, OWNER or one of their Consultants or Subcontractors, if any, are shown in the *Reports and Drawings* or the Plans. This information is offered to the CONTRACTOR as only as information relied upon by ENGINEER in the preparation of the Contract Documents, and the CONTRACTOR is solely responsible for confirming actual conditions and ENGINEER, OWNER or their Consultants or Subcontractors have no responsibility for any conclusion, interpretation or analysis contained therein or made by the CONTRACTOR based upon his review of the Soil Borings. Neither OWNER or ENGINEER has any responsibility for and does not warrant that the soils or water table encountered during construction will be as shown in the borings.

C. CONTRACTOR warrants that before submitting his bid he has personally determined the soil and subsoil conditions, including the water table elevation and the conditions to be encountered by CONTRACTOR in the performance of the Work and that said conditions and factors have been evaluated by CONTRACTOR and incorporated into his Contract with OWNER. CONTRACTOR further warrants that he is fully aware of the soil conditions, subsoil conditions, water table and all applicable State and Federal Regulations related to the excavation, removal, transportation, placement and relocation of the materials involved in the work to be performed by the CONTRACTOR and that CONTRACTOR will complete the work under whatever conditions he may encounter or create without extra cost, expense to

or claim against the OWNER or ENGINEER, their consultants or subcontractors.

- D. Contractor has identified all locations where the CONTRACTOR's operations are near public roadways, the properties of railroads or contiguous physical structures. Work shall not take place until CONTRACTOR has made all arrangements necessary to identify the location and/or elevation of the roadways, the properties of railroads or contiguous physical structures and foundation or appurtenances and has taken all necessary steps to protect the roadways, the properties of railroads or contiguous physical structures from damage. CONTRACTOR is solely responsible for any and all damage to roadways, the properties of railroads or contiguous physical structures and any personal injury, death or property damage or consequential damages arising from CONTRACTOR'S operations.

Amend the following paragraphs in Section 4.03 to read:

4.03 *Differing Subsurface or Physical Conditions*

- A. *Notice:* If CONTRACTOR believes that any physical condition at or contiguous to the Site that is uncovered or revealed is of such a nature as to require a change in the Contract Documents or is of an unusual nature and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents then CONTRACTOR shall, within 48 hours after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A) notify OWNER and ENGINEER in writing about such condition. CONTRACTOR shall not further disturb such condition or perform any Work in connection therewith (except as aforesaid) until receipt of written order to do so. If notice as provided in this section is not given, no change in contract price shall be considered or allowed.
- B. *ENGINEER'S Review:* After receipt of written notice as required by paragraph 4.03.A, ENGINEER will promptly review the pertinent condition, determine the necessity of OWNER's obtaining additional exploration or tests with respect thereto, and advise OWNER in writing (with a copy to CONTRACTOR) of ENGINEER's findings and conclusions.

C. *Possible Price and Times Adjustments*

- 1. The Contract Price or the Contract Times, or both, will be equitably adjusted to the extent that the existence of such differing subsurface or physical condition causes an increase or decrease in CONTRACTOR's cost, or time required for, performance of the Work; subject, however, to the following:
  - a) CONTRACTOR has complied with the requirements of paragraph A above and such condition is determined by OWNER to be of such a nature as to require a change in the Contract Documents or is of an unusual nature and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents; and



- b) with respect to Work that is paid for on a Unit Price Basis, any adjustment in Contract Price will be subject to the provisions of Sections 9.08 and 11.03.
2. CONTRACTOR shall not be entitled to any adjustment in the Contract Price or Contract Times if:
    - a) CONTRACTOR knew of the existence of such conditions at the time CONTRACTOR made a final commitment to OWNER in respect of Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract; or
    - b) the existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site and continuous areas provided by the Bidding Requirements or Contract Documents prior to CONTRACTOR's making such final commitment; or
    - c) CONTRACTOR failed to give the written notice within the time and as required by paragraph 4.03.A.
  3. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any adjustment in the Contract Price or Contract Times, or both, a Claim may be made therefore as provided in Section 10.05. However, OWNER, ENGINEER, and ENGINEER'S Consultants shall not be liable to CONTRACTOR for any claims, costs, losses, or damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) sustained by CONTRACTOR on or in connection with any other project or anticipated project.

Amend the following paragraphs in Section 4.04 to read:

4.04 *Underground Facilities*

- A. *Shown or Indicated:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or contiguous to the Site is based on information and data furnished to OWNER or ENGINEER by the owners of such Underground Facilities, including OWNER, or by others.
  1. The Underground Facilities shown on the plans are located according to the available information known to the ENGINEER at the time of the preparation of the *Reports and Drawings* and Plans. The ENGINEER and OWNER do not guarantee the accuracy of such information.
  2. The CONTRACTOR is solely responsible for identifying the actual location of Underground Facilities and shall verify the location and/or elevations of the Underground Facilities prior to undertaking construction;
  3. At all locations where the CONTRACTOR's operations are near, will cross or contact Underground Facilities work shall not take place until CONTRACTOR has made all arrangements necessary to identify the location and/or elevation of the Underground Facility, including calling

MISS DIG, has notified the owner of the Underground Facility, and has taken all necessary steps to protect the Underground Facility from damage.

4. The cost of all of the following will be included in the Contract Price, and CONTRACTOR shall have full responsibility for:
  - a) reviewing and checking all information and data,
  - b) locating all Underground Facilities shown or indicated in the Contract Documents,
  - c) coordination of the Work with the owners of such Underground Facilities, including OWNER, during construction, and
  - d) the protection, shoring, bracing, supporting and maintenance of all Underground Facilities affected by his operations.

CONTRACTOR is solely responsible for any and all damage to Underground Facilities and any personal injury, death or property damage or consequential damages arising from CONTRACTOR'S operations.

- e) the safety and protection of all such Underground Facilities and repairing any damage thereto resulting from the Work.
5. In the event of the interruption of or damage to an Underground Facility as result of CONTRACTOR'S operations, the CONTRACTOR shall immediately notify the Underground Facility owner and shall take all steps necessary to cooperate with and assist the Underground Facility owner in the restoration and repair of the Underground Facility. Said repair work shall be continuous and shall not result in any delay of the Project or increased cost or expense to OWNER, or claim against OWNER or ENGINEER.

B. *Not Shown or Indicated.*

1. If an Underground Facility is uncovered or revealed at or contiguous to the Site which was not shown or indicated in the Contract Documents, CONTRACTOR shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by paragraph 6.16.A), identify the owner of such Underground Facility and give written notice to that owner and to OWNER and ENGINEER. ENGINEER will promptly review the Underground Facility and determine the extent, if any, to which a change is required in the Contract Documents to reflect and document the consequences of the existence or location of the underground Facility. At all times, CONTRACTOR shall be solely responsible for the safety and protection of such underground facility.
2. If ENGINEER concludes that a change in the Contract Documents is required, a Work Change Directive or a Change Order will be issued to reflect and document such consequences. An equitable adjustment shall be made in the Contract Price or Contract Times, or both, to the extent that they are attributable to the existence or location of any Underground

Facility that was not shown or indicated in the Contract Documents and that CONTRACTOR did not know of and could not reasonably have been expected to be aware of or to have anticipated. If OWNER and CONTRACTOR are unable to agree on entitlement to or on the amount or extent, if any, of any such adjustment in Contract Price or Contract Times, OWNER or CONTRACTOR may make a Claim therefore as provided in Section 10.05.

Amend the following paragraphs in Section 4.06 to read:

4.06 *Hazardous Environmental Condition at Site*

- B. *Limited Reliance by CONTRACTOR on Technical Data Authorized:* CONTRACTOR may rely upon the general accuracy of the "technical data" contained in such *Reports and Drawings*, but such *Reports and Drawings* are not Contract Documents. Such "technical data" is identified in the Supplementary Conditions. CONTRACTOR may rely upon the "technical data". CONTRACTOR may not make any Claim against OWNER, ENGINEER or any of ENGINEER's Consultants with respect to:
1. the completeness of such reports and drawings for CONTRACTOR's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by CONTRACTOR, cost of Work and safety precautions and programs incident thereto; or
  2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
  3. any CONTRACTOR interpretation of or conclusion drawn from any "technical data" or any such other data, interpretations, opinions or information.

D. Article 5 - Bonds and Insurance

Add the following paragraphs in Section 5.03:

5.03.B. See Insurance Specifications.

5.03.C The obligation for insurance in Sections 5.06 to 5.10 imposed upon the Owner are amended to require the Contractor to secure the insurance specified. See Insurance Specifications pages 1 through 7.

E. Article 6 - Contractor's Responsibilities

Amend the following paragraph in Section 6.01 to read:

6.01 *Supervision and Superintendence*

- A. CONTRACTOR shall supervise, inspect and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. CONTRACTOR shall be solely responsible for the means, methods, techniques, sequences, safety programs and procedures and

procedures of construction. Nothing in the design, specifications or Contract Documents shall be deemed to constitute a specific means, method, technique, sequence, or procedure of construction. CONTRACTOR is solely responsible for identifying any condition or situation, which constitutes a danger or safety hazard and shall notify the OWNER and ENGINEER in writing of such condition, danger or hazard prior to commencing Work. CONTRACTOR shall be responsible to see that the completed Work complies accurately with the Contract Documents.

Amend the following paragraphs in Section 6.05 to read:

6.05 *Substitutes and "or-Equals"*

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

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

- a) in the exercise of reasonable judgment ENGINEER determined that:
  - (i) it is at least equal in quality, durability, appearance, strength, and design characteristics; (ii) it will reliably perform at least equally well the function imposed by the design concept of the completed Project as a functioning whole, and;
- b) CONTRACTOR certifies that: (i) there is no increase in cost to the OWNER; and (ii) it will conform substantially, even with deviations, to the detailed requirements of the item named in the Contract Documents.
- c) CONTRACTOR warrants that the "or-equal" is functionally equal to that named and assumes sole responsibility for the adequacy, performance and functioning of the material or equipment.

2. *Substitute Items*

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

- b) CONTRACTOR shall submit sufficient information as provided below to allow ENGINEER to determine that the item of material or equipment proposed is essentially equivalent to that named and an acceptable substitute therefore. Requests for review of proposed substitute items of material or equipment will not be accepted by ENGINEER from anyone other than CONTRACTOR.
- c) The procedure for review by ENGINEER will be as set forth in paragraph 6.05.A.2.d, as supplemented in the General Requirements and as ENGINEER may decide is appropriate under the circumstances.
- d) CONTRACTOR shall first make written application to ENGINEER for review of a proposed substitute item of material or equipment that CONTRACTOR seeks to furnish or use. The application shall certify that the proposed substitute item will perform adequately the functions and achieve the results called for by the general design, be similar in substance to that specified, and be suited to the same use as that specified. The application will state the extent, if any, to which the use of the proposed substitute item will prejudice CONTRACTOR's achievement of Substantial Completion on time, whether or not use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with OWNER for work in the Project) to adapt the design to the proposed substitute item and whether or not incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty. All variations of the proposed substitute item from that specified will be identified in the application, and available engineering, sales, maintenance, repair, and replacement services will be indicated. The application will also contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including costs of redesign and claims of other contractors affected by any resulting change, all of which will be considered by ENGINEER in evaluating the proposed substitute item. ENGINEER may require CONTRACTOR to furnish additional data about the proposed substitute item.
- e) CONTRACTOR warrants that the "substitute item" is functionally equal to that named and assumes sole responsibility for the adequacy, performance, and functioning of the material or equipment.

Add the following paragraph to Section 6.06:

*Qualifications of Subcontractors, Material, Personnel and Suppliers*

The CONTRACTOR shall submit to the Owner and Engineer for acceptance a list of names of subcontractors and such other persons and organizations (including those who are to furnish principal items of material or equipment) within two days of the bid opening and prior to the Effective Date of the Agreement.

Amend the following paragraphs in Section 6.13 to read:

6.13 *Safety and Protection*

- A. CONTRACTOR shall be solely responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work. CONTRACTOR shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury or loss to:
- 1) all persons on the Site or who may be affected by the Work;
  - 2) all the work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
  - 3) other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. CONTRACTOR shall comply will all applicable laws and regulations relating to the safety of persons or property, or the protection of persons or property from damage, injury or loss; and shall erect and maintain all necessary safeguards for such safety and protection. CONTRACTOR shall notify owners of adjacent property and of Underground Facilities and other utility owners when prosecution for the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property. All damage, injury, or loss to any property referred to in paragraph 6.13.A.2 or 6.13.A.3 caused, directly or indirectly, in whole or in part, by CONTRACTOR, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by CONTRACTOR. CONTRACTOR's duties and responsibilities for safety and for protection of the Work shall continue until such time as the Work is completed and ENGINEER has issued a notice to OWNER and CONTRACTOR in accordance with paragraph 14.07.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion). CONTRACTOR shall hold harmless and indemnify OWNER and ENGINEER from any and all claims, including those of third-persons for injury or damage pursuant to Section 6.20.

Add the following subparagraph in paragraph 6.17.D:

4. The Contractor will submit to the Engineer for approval eight (8) copies of all shop drawings.

Amend the following paragraphs in Section 6.17 to read:

6.17 *Shop Drawings & Samples*

E. ENGINEER's Review

1. ENGINEER will timely review and approve Shop Drawings and Samples in accordance with the schedule of Shop Drawings and Sample submittals acceptable to ENGINEER. ENGINEER's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of

the completed Project as a functioning whole as indicated by the Contract Documents.

2. ENGINEER's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto. The review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
3. ENGINEER's review and approval of Shop Drawings or samples shall not relieve CONTRACTOR from responsibility for any variation from the requirements of the Contract Documents unless CONTRACTOR has in writing called ENGINEER's attention to each such variation at the time of each submittal as required by paragraph 6.17.D.3 and ENGINEER has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample approval; nor will any approval by ENGINEER relieve CONTRACTOR from responsibility for complying with the requirements of paragraph 6.17.D.1.

Amend the following paragraph in Section 6.19 to read:

6.19 *CONTRACTOR's General Warranty and Guarantee*

- B. CONTRACTOR's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of CONTRACTOR's obligation to perform the Work in accordance with the Contract Documents.
  1. observations by ENGINEER or Resident Project Representative;
  2. recommendation by ENGINEER or payment by OWNER of any progress or final payment;
  3. the issuance of a certificate of Substantial Completion by ENGINEER or any payment related thereto by OWNER;
  4. use or occupancy of the Work or any part thereof by OWNER;
  5. any acceptance by OWNER or any failure to do so;
  6. any review and approval of a Shop Drawing or Sample submittal or the issuance of a notice of acceptability by ENGINEER;
  7. any inspection, test, or approval by other; or
  8. any correction of defective Work by Owner.

Add the following paragraph to Section 6.19:

- C. General Warranty and Guarantee

The CONTRACTOR shall warranty and guarantee all equipment and work for one year from the date of substantial completion. Greater warranty duration may be required by the Project Specifications.

Delete the following paragraphs in Section 6.20:

6.20 Indemnification

Delete paragraphs 6.20.C, 6.20.C.1, and 6.20.C.2 in their entirety.

F. Article 8 - Owner's Responsibilities (Section 8.06)

Add the following paragraphs under Section 8.06

B. Also see:

- 1) Insurance Specifications
- 2) Section 4.D. Article 5 of these Supplementary Conditions.

G. Article 9 - Engineer's Status During Construction

Amend the following paragraph in Section 9.01 to read:

9.01 *OWNER'S Representative*

- A. ENGINEER will be OWNER's representative during the construction period. The duties and responsibility and limitations of authority of ENGINEER as OWNER's representative during construction may be indicated in a Contract (either written or oral) between OWNER and ENGINEER and if so, will not be changed without written consent of OWNER and ENGINEER.

Amend the following paragraph in Section 9.02 to read:

9.02 *Visits to the Site*

- B. ENGINEER's visits and observations are subject to all the limitations on ENGINEER's authority and responsibility set forth in Section 9.10, and particularly, but without limitation, during or as a result of ENGINEER's visits or observations of CONTRACTOR's Work ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work which remain the sole responsibility of CONTRACTOR.

Amend the following paragraph in Section 9.03 to read:

9.03 *Project Representative*

- A. If OWNER and ENGINEER agree, ENGINEER will furnish a Resident Project Representative to assist ENGINEER in providing more extensive observation of the Work. The responsibilities and authority and limitations



thereon of any such Resident Project Representative and assistants will be as provided in Section 9.10 may be indicated in a Contract (either written or oral) between OWNER and ENGINEER and specifically limited to the following. The Resident Project Representative will not supervise, direct, control or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work which remain the sole responsibility of CONTRACTOR. The Resident Project Representative's duty is limited to observation of the progress of CONTRACTOR's work for general compliance with the Contract Documents and reporting of same to ENGINEER. The Resident Project Representative has no authority to approve any deviation from the Contract Documents, or to interpret for CONTRACTOR or OWNER any provision of the Contract Documents. The Resident Project Representative may not stop the Work for any reason. If OWNER designates another representative or agent to represent OWNER at the Site who is not ENGINEER's Consultant the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

Amend the following paragraphs in Section 9.10 to read:

9.10 *Limitations on ENGINEER's Authority and Responsibilities.*

- A. Neither ENGINEER's authority or responsibility under this Article 9, in a Contract (either written or oral) between the OWNER and ENGINEER or under any other provision of the Contract Documents nor any decision made by ENGINEER in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by ENGINEER shall create, impose, or give rise to any duty in contract, tort or otherwise owed by ENGINEER to CONTRACTOR, Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them not a party to the Contract (either written or oral) between the OWNER and ENGINEER.
- B. ENGINEER will not supervise, direct, control, or have authority over or be responsible for CONTRACTOR's means, methods, techniques, sequence, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of CONTRACTOR to comply with Laws and Regulations applicable to the performance of the Work. ENGINEER will not be responsible for CONTRACTOR's failure to perform the Work in accordance with the Contract Documents. To this end, ENGINEER may not stop the work, interfere with the progress of the work or recommend alternate or possible safety activities or changes for the safety of the project, CONTRACTOR, subcontractors, suppliers, OWNER, employees, third persons or their property.
- C. ENGINEER will not be responsible for the acts or omissions of CONTRACTOR or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. ENGINEER will not be responsible for CONTRACTOR's failure to pay subcontractors, suppliers, employees, taxes, fees, permits, patent fees and royalties, licenses or monies due to any party.

- E. ENGINEER's review of the Applications for Payment and accompanying documentation will only be to determined generally that the Work has progressed to the point indicated and that based upon ENGINEER'S limited observations the Work appears to be in accordance with the Contract Documents. ENGINEER has no responsibility for CONTRACTOR's failure to complete the Work in accordance with the Contract Documents, for defective work of the CONTRACTOR or failure of equipment or materials provided by CONTRACTOR to perform or function design parameters and in compliance with the intent of the Contract Documents.
- F. ENGINEER's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, Bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Section 14.07.A will only be to determine generally that their content complies with the requirements of, and in case of certificates of inspections, tests, and approvals that the results certified indicate compliance with, the Contract Documents.
- G. The limitations upon authority and responsibility set forth in this Section 9.10 shall also apply to ENGINEER's Consultants, Resident Project Representative and assistants.

H. Article 14 - Payments to Contractor and Completion

Amend the following paragraph in Section 14.09 to read:

14.09 *Waiver of Claims*

- A. The making and acceptance of final payment will constitute:
  - 1. a waiver of all Claims by OWNER against CONTRACTOR, except 1) Claims arising from unsettled Liens, 2) Claims from defective Work, 3) Claims for failure to comply with the Contract Documents or the terms of any special guarantees specified therein, 4) claims for indemnification or 5) Claims arising from CONTRACTOR's continuing obligations under the Contract Documents; and
  - 2. a waiver of all Claims by CONTRACTOR against OWNER including those for additional compensation, other than those previously made in writing which are still unsettled.

5. MICHIGAN DEPARTMENT OF TRANSPORTATION SPECIFICATIONS

- A. The 2003 Standard Specifications for Construction adopted by the Michigan Department of Transportation are hereby incorporated into these contract documents.
- B. Copies of these "Standard Specifications" are available for inspection at the office of the Engineer.
- C. Specific references made in these documents will be abbreviated as follows:  
MDOT 000.00.

## INSURANCE SPECIFICATIONS

### **1.1 Insurance Required of the Contractor**

Prior to commencement of the Work, the Contractor shall purchase and maintain during the term of the project such insurance as will protect him, the Owner(s) and the Engineer(s) from claims arising out of the work described in this contract and performed by the Contractor, Sub-contractor(s) or Sub-subcontractor(s) consisting of:

#### **1.1.1 Owner's Protective Liability**

An Owner's Protective Liability policy to protect the Owner, the Engineer, their consultants, agents, employees and such public corporations in whose jurisdiction the work is located for their contingent liability for work performed by the Contractor, the Subcontractor(s) or the Sub-subcontractor(s) under this contract.

#### **1.1.2 General Liability**

A Comprehensive General Liability policy to cover bodily injury to persons other than employees and for damage to tangible property, including loss of use thereof, including the following exposures:

- a. All premises and operations.
- b. Explosion, collapse and underground damage.
- c. Contractor's Protective coverage for independent contractors or subcontractors employed by him.
- d. Contractual Liability for the obligation assumed in the Indemnification or Hold Harmless agreement found in the General Conditions and Supplemental Conditions section of this contract.
- e. The Personal Injury Liability endorsement with no exclusions pertaining to employment.
- f. Products and Completed Operations Coverage. This coverage shall extend through the contract guarantee period.

#### **1.1.3 Automobile Liability**

A Comprehensive Automobile Liability policy to cover bodily injury and property damage arising out of the ownership, maintenance or use of any

motor vehicle, including owned, non-owned and hired vehicles. In light of standard policy provisions concerning (a) loading and unloading and (b) definitions pertaining to motor vehicles licensed for road use vs. unlicensed or self-propelled construction equipment, it is strongly recommended that the Comprehensive General Liability and the Comprehensive Auto Liability be written by the same insurance carrier, though not necessarily in one policy.

#### 1.1.4 Umbrella or Excess Liability

The Owner or its representative may, for certain projects, require limits higher than those stated in paragraph 1.2 which follows. The Contractor is granted the option of arranging coverage under a single policy for the full limit required or by a combination of underlying policies with the balance provided by an Excess or Umbrella Liability policy equal to the total limit(s) requested. Umbrella or Excess policy wording shall be at least as broad as the primary or underlying policy(ies) and shall apply both to the contractor's general liability and to his automobile liability insurance.

#### 1.1.5 Worker's Compensation

Worker's Compensation insurance including Employer's Liability to cover employee injuries or disease compensable under the Worker's Compensation Statutes of the states in which work is conducted under this contract; disability benefit laws, if any; or Federal compensation acts such as U.S. Longshoremen or Harbor Worker's, Maritime Employment, or Railroad Compensation Act(s), if applicable. Self-insurance plans approved by the regulatory authorities in the state in which work on this project is performed are acceptable.

#### 1.1.6 Builder's Risk-Installation Floater

The Contractor shall purchase a Builder's Risk-Installation Floater in a form acceptable to the Owner covering property of the project for the full value to replace and complete replacement as of the time of any loss which shall include, as named insureds, (a) the Contractor, (b) all Sub-contractors, (c) all Sub-subcontractors, (d) the Owner, the Engineer(s) or Architects(s), as their respective interests may prove to be at the time of loss, covering insurable property which is the subject of this contract, whether in place, stored at the job site, stored elsewhere, or in transit at the risk of the insured(s). Coverage shall be effected on an "All Risk" form including, but not limited to, the perils of fire, wind, vandalism, collapse, theft and earthquake, with exclusions normal to the cover. The Contractor may arrange for such deductibles as he deems to be within his ability to self-assume, but he will be held solely responsible for the amount of such deductible and for any coinsurance penalties. Any insured loss shall be

adjusted with the Owner and the Contractor and paid to the Owner and Contractor as Trustee for the other insureds.

1.1.7 Railroad Protective Liability

Where such an exposure exists, the Contractor will provide coverage in the name of each railroad company having jurisdiction over rights-of-way across which work under the Contract is to be performed. The form of policy and the limits of liability shall be determined by the railroad company(ies) involved. *See supplemental specifications for limits and coverage requested.*

1.2 Limits of Liability

The required limits of liability for insurance coverages requested in Section 1.1 shall be not less than the following:

1.2.1 Owner's Protective

Each Occurrence	\$1,000,000
General - Aggregate	\$2,000,000

1.2.2 Comprehensive General Liability

General Aggregate	\$2,000,000
Products – Completed Operations Aggregate	\$2,000,000
Personal Injury	\$1,000,000
Each Occurrence	\$1,000,000
Fire Damage	\$ 50,000
Medical Expense	\$ 5,000

1.2.3 Comprehensive Automobile Liability *(in accordance with Michigan Statute "no fault")*

Combined single limit (each accident)	\$1,000,000
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1.2.4 Umbrella or Excess Liability \$2,000,000

1.2.5 Worker's Compensation

Coverage A - Compensation	Statutory
Coverage B - Employer's Liability	\$ 500,000

1.2.6 Builder's Risk-Installation Floater Value to replace and complete replacement at time of loss

### 1.3 Insurance-Other Requirements

#### 1.3.1 Notice of Cancellation or Intent Not to Renew

Policies will be endorsed to provide that at least 30 days written notice shall be given to the Owner and to the Engineer of cancellation or of intent not to renew. All notices of cancellation or alteration shall be made by certified mail, or personal delivery to the Owner and to the Engineer.

#### 1.3.2 Evidence of Coverage

Prior to commencement of the Work, the Contractor shall furnish to the Owner, Certificates of Insurance in force on the Owner's Form of Certificate, if provided. Other forms of Certificate are acceptable only if (1) they include all of the items prescribed in the Owner's Form of Certificate, including agreement to cancellation provisions outlined in paragraph 1.3.1 above and (2) they have written approval of the Owner. The Owner reserves the right to request complete copies of policies if deemed necessary to ascertain details of coverage not provided by the certificates. Such policy copies shall be "Originally Signed Copies," and so designated.

##### A. Insurance Required for the Contractor

1. Worker's Compensation and Employer's Liability  
Comprehensive General Liability - including:
  - a. All premises and operations.
  - b. Explosion, collapse and underground damage.
  - c. Contractor's Protective.
  - d. Contractual Liability for obligations assumed in the Indemnification-Hold Harmless agreement of this contract.
  - e. Personal Injury Liability.
  - f. Products and Completed Operations.
2. Comprehensive Automobile Liability - including owned, non-owned and hired vehicles.
3. Umbrella or Excess Liability.

B. Insurance Required for the Owner

Owner's Protective Liability which names as insured(s) the Owner, the Engineer(s), their consultants, agents, employees and such public corporations in whose jurisdiction the work is located.

The Contractor must also agree and submit evidence of naming the Owner, the Engineer(s), their consultants, agents, employees and such public corporation in whose jurisdiction the work is located as additional insured on the General Liability Policy and the Automobile Liability Policy.

With the Owner, the additional named insured for this project are as follows:

Ottawa County, Prein&Newhof, Park Township, and Waste Management Inc.

Example:

*Ottawa County Road Commission, Rosy Mound Drive at US-31, PO Box 739, Grand Haven, MI 49417*

C. Insurance Required for the Contractor and the Owner

Builders Risk-Installation Floater which names as insured(s) the Owner; the Engineer(s); their consultants, agents and employees; the Contractor and all Subcontractors.

1.3.3 Qualification of Insurers

In order to determine financial strength and reputation of insurance carriers, all companies providing the coverages required shall be licensed or approved by the Insurance Bureau of the State of Michigan and shall have a financial rating not lower than VIII and a policyholder's service rating no lower than A- as listed in A.M. Best's Key Rating Guide, current edition. Companies with ratings lower than A-:VIII will be acceptable only upon written consent of the Owner.





# ACORD CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)

PRODUCER

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

COMPANIES AFFORDING COVERAGE

COMPANY A Insurance Company Name AM Best Financial

INSURED

Owner's Name and Address

COMPANY B

COMPANY C

COMPANY D

COVERAGES

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

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	Minimum LIMITS
	<b>GENERAL LIABILITY</b> <input type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input type="checkbox"/> OCCUR <input checked="" type="checkbox"/> OWNER'S & CONTRACTOR'S PROT				GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ PERSONAL & ADV INJURY \$ EACH OCCURRENCE \$ 1,000,000 FIRE DAMAGE (Any one fire) \$ MED EXP (Any one person) \$
	<b>AUTOMOBILE LIABILITY</b> <input type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT \$ BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EACH ACCIDENT \$ AGGREGATE \$
	<b>EXCESS LIABILITY</b> <input type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ AGGREGATE \$
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> THE PROPRIETOR/PARTNER/EXECUTIVE OFFICERS ARE: <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				WC STATUTORY LIMITS <input type="checkbox"/> OTHER <input type="checkbox"/> EL EACH ACCIDENT \$ EL DISEASE-POLICY LIMIT \$ EL DISEASE-EA EMPLOYEE \$
	OTHER				

DESCRIPTION OF OPERATIONS, LOCATIONS, VEHICLES/SPECIAL ITEMS

Name of Additional Insured

CERTIFICATE HOLDER

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL SEND BY REGISTERED MAIL \* 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, \*by certified mail.

AUTHORIZED REPRESENTATIVE

TC A



# ACORD. CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YY)

PRODUCER	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.		
	COMPANIES AFFORDING COVERAGE		
	COMPANY A	AM Best	Financial
	Insurance Company Name		
INSURED  Contractor's Name and Address	COMPANY B		
	COMPANY C		
	COMPANY D		

**COVERAGES**

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

CO LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	Minimum LIMITS
	<b>GENERAL LIABILITY</b> <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> OWNERS & CONTRACTORS PROT				GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000 PERSONAL & ADV INJURY \$ 1,000,000 EACH OCCURRENCE \$ 1,000,000 FIRE DAMAGE (Any one fire) \$ 50,000 MED EXP (Any one person) \$ 5,000
	<b>AUTOMOBILE LIABILITY</b> <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS				COMBINED SINGLE LIMIT \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE \$
	<b>GARAGE LIABILITY</b> <input type="checkbox"/> ANY AUTO				AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: \$ EACH ACCIDENT \$ AGGREGATE \$
	<b>EXCESS LIABILITY</b> <input checked="" type="checkbox"/> UMBRELLA FORM <input type="checkbox"/> OTHER THAN UMBRELLA FORM				EACH OCCURRENCE \$ 2,000,000 AGGREGATE \$ 2,000,000
	<b>WORKERS COMPENSATION AND EMPLOYERS' LIABILITY</b> THE PROPRIETOR/PARTNERS/EXECUTIVE OFFICERS ARE <input type="checkbox"/> INCL <input type="checkbox"/> EXCL				<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER EL EACH ACCIDENT \$ 500,000 EL DISEASE-POLICY LIMIT \$ 500,000 EL DISEASE-EA EMPLOYEE \$ 500,000
	OTHER				

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS  
  
Name of Additional Insured

CERTIFICATE HOLDER  Owner's Name and Address	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPANY WILL KNOW/ON HIS MAIL * <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, *by certified mail
	AUTHORIZED REPRESENTATIVE  TC A



**SECTION 2**  
**SPECIFICATIONS FOR**  
**EXCAVATING, TRENCHING, & BACKFILLING FOR UTILITIES**

**2.01 DESCRIPTION OF WORK**

The work shall consist of furnishing all materials, equipment, and labor for excavating, trenching, and backfilling for utilities. The work also shall include the necessary clearing, sheeting and shoring, boring and jacking, dewatering, pipe embedment, and other appurtenant work.

The work shall be performed in accordance with the specifications and drawings, the MDOT 2003 Standard Specifications for Construction and the following specifications.

**2.02 CLEARING, BRUSHING & TREE REMOVAL**

**2.02.01 General**

The Contractor shall perform all clearing, brushing, and tree removal required for the proposed construction. Where indicated on the drawings for a specific area, that area shall be completely cleared in accordance with Sections 201 and 202 of the MDOT 2003 Standard Specifications for Construction. The Contractor shall notify the Engineer 48 hours (two working days) prior to commencement of clearing, brushing and tree removal. Clearing and brushing shall be confined to the limits of the right-of-way or easements unless otherwise directed and shall be kept to a practicable minimum.

Trees marked "Remove" on the drawings shall be taken down and removed from the right-of-way in a manner that does not endanger the adjoining property or persons or traffic using the right-of-way. Unless approved otherwise by the Engineer, stumps of trees are to be removed. All stump removal, shall be considered included in the major items of work to the project.

Selective pruning of trees will be permitted to allow operation of the Contractor's equipment. Trees shall be pruned neatly, and the scars from pruning or other damage by the Contractor's equipment shall be covered with a preservative.

**2.02.02 Preservation of Trees**

Because of the special concern for preservation of trees, all trees six (6) inches in diameter and larger, measured at a point 4 1/2' above the ground line at the base of the tree, which are to be removed have been marked on the drawings. Where there is more than one tree that has grown from a common stump, each tree is measured as a separate tree. All other trees are to be preserved unless written permission for removal is obtained from the Owner and/or the Engineer. Where tunneling is necessary to preserve a tree, it shall be included in the major items of work. Trees that may have to be tunneled may or may not be specified on the

drawings. Where tunneling is necessary, excavation may have to be done by hand to prevent damage to the tree or to its roots. When tunneling or excavating is done close to a tree to be preserved, every effort shall be made to preserve the main roots.

2.02.03 Disposal of Debris

All trees, brush, and stumps from clearing and brushing operations shall be disposed of by the Contractor by hauling from the site, or other suitable means approved by the Engineer. Burning of debris will be allowed if approved by the Engineer and Owner. The Contractor shall obtain the necessary burning permits and shall comply with the safety regulations required.

2.02.04 Measurement & Payment

The cost of all clearing, brushing, tunneling, and protection of trees which are left standing shall be considered included in the major items of work unless specific items have been provided in the Proposal in which case the prices shall be payment in full for performing this work as specified herein. All tree preservation shall be included in the major items of work to the project. Trees will be measured at a point 4-1/2' above the ground line at the base of the tree. Where more than one tree has grown from a common stump, each tree is measured as a separate tree. Trees six (6) inches in diameter and smaller will not be considered pay items.

**2.03 REMOVAL OF SURFACE IMPROVEMENTS**

Surface improvements such as sidewalks, improved lawns, drives, curb and gutter, and all types of pavement shall be removed just prior to excavating or trenching operations. All improvements shall be cut at the expected trench width prior to excavating using suitable equipment which does not damage the improvement outside of the trench area.

Concrete and bituminous pavement and drives shall be cut with a pavement cutting saw. The depth of the cut shall be the full depth of the pavement. Pavement crushers or breakers of any type are prohibited unless specifically authorized by the Engineer. Pavement which is removed shall not become mixed with backfill material. Power equipment may be used for pavement removal, provided that damage is not caused to improvements which are to remain.

Removal of surface improvements shall be included in the major items of work and no specific payment will be made therefore unless specific Proposal items are provided, in which case the prices bid shall be payment in full for performing this work as specified herein.

**2.04 EXISTING SOIL / SUBSURFACE CONDITIONS**

Where provided, soil borings are shown on the drawings only as information for use by the Engineer in preparing the contract documents. The Contractor is solely responsible for confirming actual soil conditions and depth of the water table.

2.05 **EXISTING UNDERGROUND UTILITIES & STRUCTURES**

2.05.01 Location

No less than three (3) working days prior to excavating, the Contractor is to call "MISS DIG" at 1-800-482-7171. Existing utilities are shown only at their approximate locations. The Contractor shall be responsible for determining their exact elevations and location in the field. The Contractor shall notify the owners of all underground utilities before starting any work. House sewer connections, water and gas services, and other utility lines may not be indicated on the drawings. However, the Contractor shall make every effort to locate all underground utilities from information obtained from the utility owner or by prospecting in advance of trench excavation.

2.05.02 Replacement

Certain underground utilities such as sewers may require removal and subsequent replacement in lieu of supporting or bracing during the proposed construction, or the Contractor may elect this option when temporary provisions to maintain essential services have been previously approved by the Engineer.

Unless otherwise specified, any utilities removed during the proposed construction shall be replaced by the Contractor. Materials and installation shall be equal to or better than original construction in every way. Salvaged materials may be reused when they are in good condition, and a satisfactory installation can be accomplished in the judgment of the Engineer.

Replacement of existing utilities shall be considered included in the major items of work unless specific items have been provided in the Proposal, in which case the prices bid shall be payment in full for performing this work as specified herein.

2.05.03 Relocation

Should any pipe or other existing utility require raising or lowering or moving to another location because of interference with the pipe or structure being constructed under these specifications, such changes which in the opinion of the Engineer are necessary shall be made by the Contractor unless otherwise specified. This work will be paid for separately under the appropriate contract items or under the contract provisions for extra work.

2.05.04 Reconnection

Where lateral services, house connections, or other pipe lines require reconnection to the proposed utility, as is the case when an existing utility is being reconstructed, the Contractor shall make these connections as specified or as shown on the drawings. All costs for making these connections, including provisions for maintaining flows and providing temporary service during the proposed construction, shall be included in the major items of work unless specific items are provided in the Proposal.

2.05.05 Utilities to be Abandoned

When pipes, conduits, sewers, or other structures are removed from the trench leaving dead ends in the ground, such ends shall be fully plugged or sealed with brick and mortar by the Contractor. Abandoned structures such as manholes or chambers shall be entirely removed unless otherwise specified or shown on the drawings.

All materials from abandoned utilities which can be readily salvaged shall be removed from the excavation by the Contractor and stored on the site or loaded on the Owner's truck as directed by the Engineer. Owner shall have first claim to salvageable materials. The Contractor is responsible to dispose of salvageable materials not desired to be kept by the Owner.

All costs for abandoning utilities and for removing and salvaging materials, when required, shall be considered included in the major items of work unless specific items have been provided in the Proposal, in which case the prices bid shall be payment in full for performing this work as specified herein.

**2.06 EXCAVATING & TRENCHING**

2.06.01 General

Excavating and trenching operations shall at all times be conducted in a safe, orderly manner using methods and equipment designed and suited to the intended use by personnel experienced in the work being performed.

None of the requirements or provisions specified herein or shown on the drawings shall nullify or restrict any safety provisions required by any regulation or law governing the protection and/or safety of persons or property.

2.06.02 Width of Trench

The width of the trench shall be ample to permit the pipe to be laid and joined properly and the pipe embedment material and backfill to be placed and compacted as specified. Trenches shall be of sufficient extra width when required as will permit the convenient placing of trench supports, sheeting, and bracing.

2.06.02.01 Width of Trench for Rigid Pipe

In order to limit excessive loads on rigid pipe, the maximum width of trench for pipe 36 inches and larger in diameter shall not be more than twice the nominal diameter. For smaller sizes of pipe, the maximum width of trench shall be not more than 3 feet greater than the nominal diameter of the pipe except as otherwise specified or directed. The above limiting restrictions on trench width apply from outside bottom of pipe to outside top of pipe.

Where the width of trench within these limits exceeds the maximum limit specified, the Contractor shall install a heavier class of pipe or use other means to provide additional load-carrying capacity at no additional cost to the Owner. Any



changes in class of pipe or other variation shall be approved in writing by the Engineer before the work progresses.

When the trench width above the top of the pipe is appreciably greater than that which is reasonably required by project conditions in the judgment of the Engineer, any additional cost for backfill material, surface restoration, or other items that are the result of such excess width shall be borne by the Contractor.

2.06.02.02 Width of Trench for Flexible Pipe

Unless otherwise specified or approved by the Engineer, a minimum trench width of at least two (2) feet on each side of the pipe for placement of select embedment material will be required.

2.06.03 Excavating to Grade

The trench shall be excavated to a depth required for the proper installation of the pipe and placing of the pipe embedment material as specified.

Any part of the bottom of the trench excavated below the specified subgrade shall be refilled with approved materials compacted to 95% of maximum unit weight in accordance with MDOT procedures at no additional cost to the Owner. If additional excavation is required to correct unstable foundation conditions, payment will be made as specified in Section 2.08.

2.06.04 Sheeting, Shoring, Bracing, & Shelving

2.06.04.01 General

The Contractor shall brace or slope back the sides of all excavations in accordance with current MDCIS and OSHA regulations. The Contractor shall be responsible for compliance to such regulations and for the design, installation, and maintenance of all excavation safety measures.

2.06.04.02 Measurement & Payment

Unless otherwise specified in the Proposal, the costs incurred in the installation of bracing, sheeting, shoring, and shelving shall be included in the unit price bid for the work being performed.

Payment for sheeting left in place where directed by the Engineer shall be negotiated with the Contractor in accordance with the contract provisions for extra work unless specific items have been provided in the Proposal.

2.06.05 Rock Excavation

2.06.05.01 General

Wherever the word rock is used in these specifications, it shall mean boulders, solid ledge rock, and other minerals geologically placed and of a hardness when

first exposed of 3 or greater in scales of mineral hardness, which in the opinion of the Engineer requires continuous use of drilling and blasting or special power equipment for its removal.

Soft disintegrated rock which can be removed with a power-operated excavator or with hand tools and loose, shaken, or previously blasted rock and broken stone in rock fillings shall not be classified as rock, nor will it be included in measurements for payment.

2.06.05.02 Hardness

The Engineer will determine the hardness of the material or minerals in question. The following accepted hardness will be used as a guide in the field for specific situations:

- Gypsum - hardness of 2
- Fingernail - hardness of approximately 2-1/2
- Calcite - hardness of 3
- Copper Coin - hardness of approximately 3
- Brass Pin - hardness of approximately 3

A mineral with a hardness of 3 will scratch a copper coin and can be scratched with a brass pin. Determinations of hardness which cannot readily be determined in the field shall be resolved by laboratory analysis of the material in question.

2.06.05.03 Blasting

Where blasting is necessary, the Contractor shall obtain the required permits and licenses at his own expense. This work shall be done with due regard to the safety of workmen, other people, and public and private property. The method of covering blasts, amounts of charges used, and the general procedure for doing this work shall conform to the standard practice and shall meet all requirements of local ordinances and other regulations and shall be subject to the approval of the Engineer.

2.06.05.04 Clearance

Rock shall be removed to provide a clearance for all pipes, appurtenances, or structures of at least eight (8) inches below, and a minimum of eight (8) inches on each side of the pipe, appurtenance, or structure.

The specified minimum clearances are the minimum clear distance which will be permitted between any part of the pipe or appurtenances being laid and any part, point, or projection of the rock.

2.06.05.05 Measurement

Only boulders of 1 cubic yard or greater in volume that cannot be removed with power excavating equipment or rock as defined herein will be measured for

payment. Measurements of rock will be made by the Engineer after rock is removed from the excavation by measuring the trench before the pipe is installed.

The cross sectional area will be measured at 25 foot intervals or closer if required to accurately measure the trench. The maximum depth which will be measured for payment shall be from the top of the rock formation to the specified subgrade for the pipe embedment material. The maximum width of trench to be considered for payment shall be as follows:

1. Below outside top of pipe, maximum width shall be the outside diameter of the pipe bell plus 12 inches but not less than 30 inches.
2. From outside top of pipe to top of rock formation, maximum width shall be computed based on a 5 on 1 slope vertically for the sides of the trench.

The volume will be computed by the Engineer using the method of average end areas based on measurements of rock actually removed subject to the maximum limits specified.

2.06.05.06 Basis of Payment

Rock excavation shall be paid for at the contract price per cubic yard, which price shall be payment in full for completing all work as specified herein including removal and disposal of the rock.

If a unit price has not been established in the Proposal, payment to the Contractor will be based on the contract provisions for extra work.

2.06.06 Dewatering

The Contractor shall provide and maintain adequate dewatering equipment to remove and dispose of all surface and ground water including water or sewage from exposed sewers or water mains, from all excavations and trenches, or other parts of the work. Each excavation shall be kept dry during the preparation of the subgrade and continually thereafter until the structure to be built or the installation of the pipe line is completed to such extent that no damage from hydrostatic pressure, flotation, or other cause will result.

Where work is in soil containing an excessive amount of water, the Contractor shall provide, install, and maintain suitable well points or wells connected to manifolds or reliable pumping equipment, or other suitable dewatering methods, and shall so operate the dewatering system to insure proper construction of the work. If the Contractor elects to use a trench underdrain or similar dewatering system, he shall receive prior approval of the Engineer as to location and installation methods for this type of system. The Contractor shall make every effort to prevent sand, sediment, or debris from entering any existing pipe line or conduit which he may use for drainage purposes. The repair or cleaning of drainage structures made necessary by the Contractor's operations shall be performed by and at the expense of the Contractor. Arrangements for discharge

of ground water into any public sewer shall be previously approved by the Engineer and Owner of the receiving sewer.

Dewatering including the use of stone or gravel for dewatering purposes when required will not be paid for separately but shall be included in the contract price for the major items of work.

The Contractor shall limit his dewatering operation to the minimum time and depth required for construction. The Contractor will be required to furnish temporary water service and/or provide potable water at the direction of the Engineer to property owners whose wells are affected by the dewatering operations.

## **2.07 BORING & JACKING**

### **2.07.01 General**

Where so specified on the drawings, railroad tracks, streets, or other obstructions to be crossed by utilities shall be bored and/or jacked as hereinafter specified. These specifications describe the general method of conducting the boring and jacking operations and set forth minimum conditions. The location and details of the proposed installation will be shown on the Drawings.

Unless otherwise specified, the Contractor shall be responsible for obtaining any permits required for the work under the right-of-way, or other facility to be crossed, and shall carry out the details of his work in a manner that will fully meet the requirements of the authority having jurisdiction over the facility affected. No interruption of traffic will be permitted, and the Contractor shall take all precautions to that effect.

### **2.07.02 Casing Method**

When the casing method is specified, a casing pipe shall be jacked into place and a carrier pipe shall then be installed in the casing pipe. The casing pipe shall be jacked into place by approved methods that will provide accurate alignment and grade and that will allow the carrier pipe to be installed within the casing at the specified alignment and grade.

The carrier pipe shall be joined together to form a continuous run through the casing or as recommended by the pipe manufacturer. It shall be supported on wooden shoes or blocks which shall be securely fastened to each end of each piece of pipe. The carrier pipe shall then be drawn or shoved through the casing. Junction with pipes of other materials at each end shall be made as shown on the Drawings. After the pipe has been inspected and accepted, the annular space between the pipe and the casing shall be filled with materials approved by the Owner, such as, peastone or flowable fill. After the casing has been filled, the ends of the casing shall be sealed as shown on the Drawings or in the Specifications.

2.07.03 Jacking Pipe Method

When specified or indicated on the Drawings, the pipe to be jacked shall also be utilized as the carrier pipe. The pipe shall be jacked into place by approved methods that will provide accurate alignment and grade. Excavation shall be performed ahead of the pipe by working inside the pipe or shall be performed by boring with approved equipment suitable for the intended use.

2.07.04 Measurement & Payment

The length of pipe to be measured for payment shall be the actual length of casing or jacking pipe actually jacked or pushed into place. When additional casing is specified or authorized, but is not actually jacked in place, the cost for furnishing and placing such additional casing will be paid for separately. If a unit price has not been established in the Proposal, payment will be based on the contract provisions for extra work. No additional payment will be made where the Contractor jacks or installs additional casing not shown on the Drawings or authorized by the Engineer.

The contract price per lineal foot for furnishing and jacking the pipe, or casing, where the casing method is used shall be payment in full for completing the work as specified herein including the necessary jacking pits and connections to pipes of other materials.

The carrier pipe shall be paid at the contract price for watermain, storm sewer, sanitary sewer, or force main per unit prices shown on the proposal and shall be payment in full for furnishing and installing the carrier pipe inside the casing.

2.08 **SUBGRADE**

The subgrade for pipe and/or structures shall be firm, dense, and thoroughly compacted and consolidated, free from mud and muck, and sufficiently stable to remain firm and intact under the feet of the workmen.

2.08.01 Unstable Foundation

When the soil beneath the normal pipe embedment area is soft or unstable, even with adequate dewatering, or in the opinion of the Engineer cannot support the pipe or utility, further depth shall be excavated and refilled to the proposed grade with MDOT Class II granular material (for plastic pipe the material must comply with ASTM D2321) compacted in twelve (12) inch layers as specified in Section 2.09.05, or other approved means shall be employed to assure a firm foundation for the utility. The volume of unstable foundation removed and replaced with approved materials for which payment will be allowed shall be determined in cubic yards unless otherwise specified on the Drawing or in the proposal. Said volume to be computed by assuming that the cross section area of the unstable foundation takes the form of a trapezoid as shown on the Standard Detail for Unstable Soil Removal for Utility.

Payment for removal and replacement of unstable foundation will be paid under the contract provisions for extra work, unless specific Proposal items have been provided, in which case, the unit price bid shall be payment in full for performing the work as specified. If the soil in the bottom of trench is soft due to excessive amounts of ground water, and/or the Contractor's method of operation, stabilization of the trench bottom shall be at the Contractor's expense.

2.08.02 Special Foundations

Where the subgrade at the bottom of the excavation consists of soil which is unstable or yielding to such a degree that, in the opinion of the Engineer, it cannot properly support the pipe or structure, the Contractor shall construct such additional foundation or reinforcement of the subgrade as may be specified, such as timber piling, geotextiles, or other means as approved by the Engineer to provide a proper foundation.

The construction of special foundations will be paid for separately based on the contract provisions for extra work, unless specific Proposal items have been provided, in which case the unit price bid shall be payment in full for performing the work as specified.

2.09 **PIPE EMBEDMENT**

2.09.01 General

Pipe embedment shall include the furnishing and placing of approved materials as specified or as directed from 4 inches under the outside bottom of the pipe to 12 inches over the outside top of the pipe. Various classes of pipe embedment may be specified or shown on the Drawings or Standard details in which case the limits of the various types will also be specified.

2.09.02 Flexible Pipe Embedment

Flexible pipe is any pipe having a pipe stiffness of less than 60 psi. as defined under the requirements of ASTM Designation D-2412 (this includes all plastic pipe except Composite (Truss) pipe, and may include corrugated metal pipe, ductile iron pipe, and steel pipe, depending on pipe diameter and wall thickness).

Pipe embedment for flexible pipe shall be Class B. For pipes less than fifteen (15) inches in diameter, bedding material meeting the requirements of Section 902.08 of the MDOT 2003 Standard Specifications for Construction for granular materials Class II, modified to 100% passing a 1" sieve shall be used. If stone is used for bedding it shall meet the requirements of ASTM D2321 (Table 1) for Class 1A crushed stone. An Engineer approved geotextile filter fabric shall be placed around all areas where Class 1A crushed stone pipe embedment is used as shown on the Standard details. Transition zones between crushed stone and sand embedment shall be separated by a geotextile fabric. For pipes fifteen (15) inches in diameter and larger, bedding material meeting the requirements of Section 902.08 of the MDOT 2003 Standard Specifications for Construction for granular materials Class II, modified to 100% passing a 1 sieve shall be used.

2.09.03 Class B Pipe Embedment

Unless otherwise specified or shown on the Drawings, all pipe embedment shall be Class B pipe embedment as shown on the Standard details. When the soil in the bottom of the trench at pipe subgrade meets all the requirements for Granular Material Class II as specified in the MDOT 2003 Standard Specifications for Construction, Section 902.08 and in the opinion of the Engineer will provide suitable bedding for the pipe, such soil may be utilized as bedding material and prepared to receive the pipe as specified without undercutting and subsequent replacement.

Plastic pipe embedment shall comply with ASTM D2321.

2.09.04 Special Pipe Embedment

Various types of special pipe embedment may be specified or shown on the Drawings in locations where special conditions require their use.

The Contractor shall perform all the work of constructing special pipe embedment where specified.

2.09.05 Placing Pipe Embedment Material

Pipe embedment material shall be placed in the bottom of the trench and shaped by hand to provide a firm and uniform bearing for the barrel of the pipe with additional shaping to accommodate the bells on bell and spigot pipe.

After each pipe has been graded, aligned, and placed in final position on the bedding material and jointing is complete, additional embedment material shall be carefully placed and compacted under and around each side of the pipe and over the pipe until it is completely covered by 12 inches of embedment material. Said material shall be distributed along both sides of the pipe uniformly and simultaneously to prevent lateral displacement of the pipe. All granular embedment material shall be compacted to 95% of maximum unit weight in accordance with MDOT procedures.

All the work of placing pipe embedment shall be considered an integral part of installing the pipe and shall be completed immediately after the pipe is laid to the correct alignment and grade.

2.09.06 Basis of Payment

All the work of furnishing and/or placing pipe embedment material as specified shall be included in the contract items for the proposed work as follows:

2.09.06.01 Class B Pipe Embedment

When a contract item has been provided in the proposal for special backfill, payment will be made under this item as specified in Paragraph 2.10 for approved

granular material obtained off the site. When no specific item for special backfill has been provided, this work shall be included in the major work items.

2.09.06.02 Special Pipe Embedment

When one or more contract items have been provided in the Proposal for special pipe embedment, payment to the Contractor will be based on the prices bid for the respective items. When no specific items have been provided in the Proposal, the cost for completing this work as specified shall be included in the major work items except for authorized extra work in which case the contract provisions for extra work shall apply.

**2. 10 BACKFILLING ABOVE PIPE EMBEDMENT**

2.10.01 General

All backfill material shall be free from cinders, ashes, refuse, sod, organic material, boulders, or rocks larger than 3 inches in diameter, frozen material or other material which in the opinion of the Engineer is unsuitable. The soil excavated from the trenches shall be used for backfilling when it is classified as suitable by the Engineer. If all or a portion of the excavated material is classified as unsuitable for backfilling, the Contractor shall remove and dispose of the unsuitable material and shall furnish and place granular material meeting the requirements of Section 902.08 of the MDOT 2003 Standard Specifications for Construction for Granular Material Class II.

All backfilling and compaction shall be performed by the Contractor using methods and equipment approved by the Engineer.

2.10.02 Trenches Requiring Compacted Granular Backfill

Trenches and excavations in the following locations shall be backfilled with approved granular material meeting the requirements of Section 902.08 of the MDOT 2003 Standard Specifications for Construction for Granular Material Class II:

- a. Improved areas, including drives, sidewalks, parking areas, around structures, etc.
- b. Within the limits of the roadway (within a 1 on 1 slope beginning two (2) feet from the edge of pavement or back of curb towards the right-of-way line).
- c. Within the limits of future improvements (shown on Drawings).
- d. Within limits specified on Drawings.
- e. All sanitary sewer lateral trenches within the limits of the right-of-way.



All backfill within these areas shall be placed in layers not exceeding twelve (12) inches thick, and shall be compacted to 95% of maximum unit weight in accordance with MDOT procedures. Tests for compaction will be made by the Engineer or other representative designated by the Engineer at no cost to the contractor. When tests indicate a density which is less than that required, the methods or equipment being used shall be modified to obtain the density specified, and the section in question shall be recompacted until the required density is obtained. The cost of retesting shall be borne by the Contractor.

2.10.03 Trenches Not Requiring Compacted Granular Backfill

Where not otherwise specified or directed, backfilling above the pipe embedment shall be made with material which is originally excavated, which is suitable. Backfill materials shall be consolidated by mechanical equipment working longitudinally in the trench, or by other approved methods, so as to be free of large voids with any excess material mounded over the trench or removed as directed by the Engineer. The trench shall be graded to a reasonable uniformity and left in a neat condition.

2.10.04 Basis of Payment

Payment for backfilling including compaction shall be made as follows:

- a. When a contract item has been provided in the Proposal for special backfill, payment will be made under this item as specified in Paragraph 2.11 for approved granular material obtained off the site.
- b. When no specific item for special backfill has been provided in the Proposal, this work shall be included in the major items of work.

2.11 **SPECIAL BACKFILL - MEASUREMENT AND PAYMENT**

2.11.01 Measurement

When an item has been provided in the Proposal for special backfill, approved granular material obtained off the site which is required by these specifications or authorized by the Engineer shall be included in this item. Special backfill shall be measured compacted in place. The Contractor shall furnish a delivery ticket for each truck load at the time the material is delivered to the project. The delivery ticket shall be prepared at least in duplicate, one copy of which shall be furnished to the Engineer or his representative, the other copy to be retained in the Contractor's file. No payment shall be made for special backfill unless the individual truck delivery tickets are furnished in this manner. The Engineer will use the delivery tickets when calculating the compacted in place quantity.

2.11.02 Payment

The Proposal unit price per cubic yard for special backfill shall be payment in full for furnishing, placing, and compacting the special backfill and for disposing of

the material excavated from the trench as directed and in accordance with the Drawings and Specifications.

Stone used specifically for dewatering procedures shall not be classified as special backfill and no specific payment will be made therefor.

**2.12 DISPOSAL OF EXCESS EXCAVATION**

All excavated material in excess of that needed for backfill or that material classified as unsuitable by the Engineer shall be disposed of by the Contractor. However, the Engineer reserves the right to direct the Contractor to haul all or a portion of the material not required for backfilling to an area designated by the Engineer which is not more than 1,000 feet outside the project and which is reasonably accessible. This work, when directed, shall be performed at no additional cost to the Owner.

**2.13 LIMITATIONS ON OPERATIONS**

The Contractor shall at all times conduct his work so that there is a minimum of inconvenience to the residents and businesses in the vicinity of this project. To this end, he shall complete his backfill and remove all debris and unsuitable backfill to a point as close to the actual pipe installation as is practical and keep the area where the pipe construction and backfill has been completed in a neat condition. Open excavations shall be protected by signs, lights, barricades, and/or fence at all times when work is not actually taking place at that excavation. The placement of excavated earth along the line of the trench shall be controlled by the use made of the street or right-of-way by the public and shall always be confined to approved limits.

**Not more than 300 consecutive feet of street shall be closed at one time**, and vehicular traffic through any street shall not be stopped for a period longer than two weeks without the written permission of the Engineer. Not more than one cross street shall be closed to vehicular traffic at the same time except by permission of the Engineer. Contractor shall maintain access for emergency vehicles at all times.

**2.14 SOIL EROSION AND SEDIMENTATION CONTROL**

The Contractor shall conduct his operations in such a manner that all soil is confined within the project limits and prevented from entering storm sewers, water courses, rivers, lakes, reservoirs, or wetlands.

The Contractor shall place a filter or barrier composed of straw, stone or other approved material around all catch basins or other inlets to the storm sewer or drainage courses to prevent sedimentation in these structures. After the construction operations are completed, the Contractor shall remove these filters and clean all the sediment and debris from the catch basins, ditches or other storm sewer structures.

Soil erosion and sedimentation control measures if indicated on the Drawings are considered as minimum requirements and are not to be considered as complete and all-inclusive. Additional control measures as may be required due to circumstances or conditions at the time of construction or as directed by the Engineer, or the designated Soil Erosion Control agency, shall be placed as required to insure conformance with the "Soil Erosion and Sedimentation Control Act of 1972" to insure conformance with the Part 91 of PA 451 of 1994. Deviations from or additions to the erosion control measures shown on the Drawings shall be subject to the approval of the Engineer or enforcing agency.

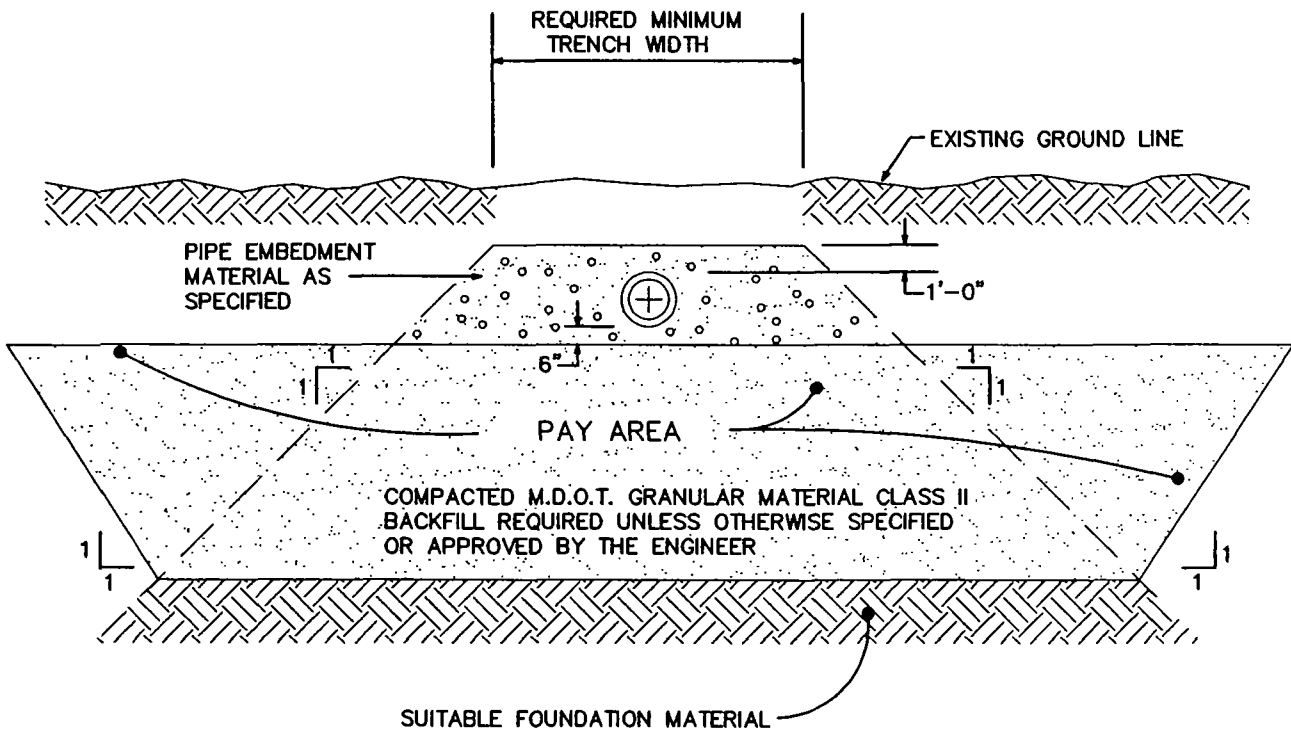
The Contractor is responsible to have a certified storm water operator and complete all such reports as required by regulatory agencies as it relates to storm water and soil erosion and sedimentation control.

The cost of this work and other control measures which may be required or directed by the Engineer shall be included in the major work items to the cost of the project unless specific items have been provided in the proposal.

## 2.15

### **STREAM CROSSING**

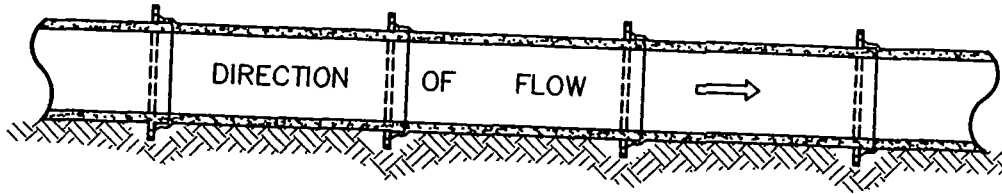
The rules and regulations of Act 451, shall govern all streams, wetland and river crossings.



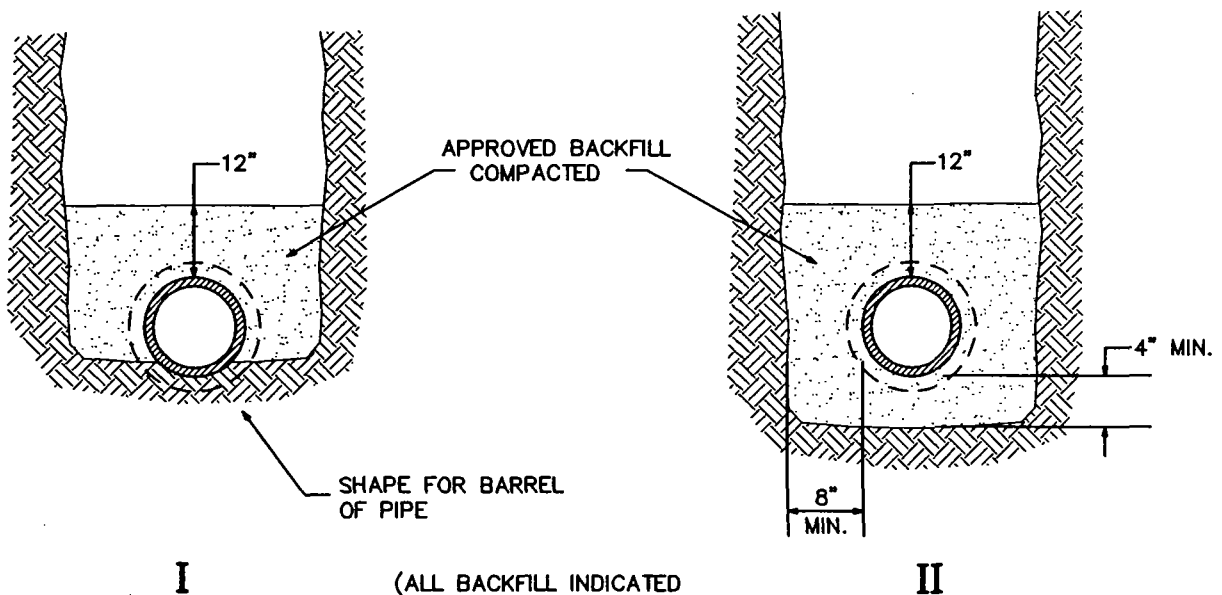
## UNSTABLE SOIL REMOVAL FOR UTILITY

PREIN & NEWHOF  
CONSULTING ENGINEERS

12/2004  
BADSOIL



## EXCAVATION FOR BELLS



(ALL BACKFILL INDICATED SHALL BE COMPACTED TO 95% OF MAX. DENSITY IN ACCORDANCE WITH M.D.O.T. PROCEDURES)

### NOTE:

1. METHOD I SHALL BE USED IN AREAS OF UNCONSOLIDATED SOILS. (SAND, GRAVEL, & ETC.)
2. METHOD II SHALL BE USED IN AREAS OF CONSOLIDATED SOILS. (CLAY, HARDPAN, ROCK, & ETC.)

## CLASS B PIPE EMBEDMENT

PREIN & NEWHOF  
CONSULTING ENGINEERS



## SECTION 3

### SPECIFICATIONS FOR SURFACE RESTORATION

#### 3.01 DESCRIPTION OF WORK

All areas disturbed by construction operations shall be restored to the original condition thereof as determined by the Engineer using information from drawings, surveys, and photographs or video tapes when available.

The work shall be performed in accordance with the specifications and drawings, the MDOT 2003 Standard Specifications for Construction and the following specifications.

#### 3.02 GRADING

All streets, walks, and other improved surfaces disturbed by construction operations shall be replaced to uniform lines and grades established by the Engineer. The finish grade line will be established within three (3) inches of the existing ground profile shown on the drawings unless a proposed grade is shown which indicates otherwise.

The Contractor shall perform all grading, compacting, shaping, and related work required to prepare the subgrade to the satisfaction of the Engineer. The cost for preparing the subgrade as specified herein shall be incidental to the cost of the project, and no specific payment will be made therefor.

#### 3.03 REPLACEMENT OF AGGREGATE STREETS AND DRIVEWAYS

Aggregate streets shall be constructed in accordance with the typical section shown on the drawings and shall consist of a minimum of six (6) inches of aggregate surface course as specified below.

##### 3.03.01 Materials

Aggregate surface course shall meet the requirements specified in Section 3.06 of the MDOT 2003 Standard Specifications for Construction. All material shall be taken from stockpiles that have recently been tested by the county road commission, MDOT, or an independent laboratory.

Aggregate material that is removed from roadways and driveways shall not be reused but shall be replaced with an equivalent depth of newly compacted aggregate conforming to MDOT 22A.

##### 3.03.02 Construction Methods

Placement of aggregate surface course shall be in accordance with the applicable portions of Section 3.06 of the MDOT 2003 Standard Specifications for Construction.

3.03.03 Aggregate Driveways and Field Drives

Aggregate driveways and field drives shall be replaced with a minimum of six (6) inches of MDOT 22A aggregate compacted in place.

3.03.04 Culverts

Culverts that are removed may be reused, if they are in sound condition. If damaged, the culverts shall be replaced with ASTM C76 Class III concrete pipe or equivalent pipe. The cost of removing and replacing the culverts shall be considered part of the major items of work found in the Proposal unless otherwise specified.

3.03.05 Measurement & Payment

Except as specified in Section 3.04, all replacement of aggregate streets and driveways shall be measured in lineal feet along the centerline of the main line utility being constructed and shall include all final grading and shaping required. The width of gravel replacement will not be considered for payment unless specific items to that end have been provided in the Proposal.

**3.04 REPLACEMENT OF SURFACE AGGREGATE IN SPECIFIED AREAS**

The Contractor shall furnish and place additional aggregate conforming to MDOT Specifications in locations determined by the Engineer for the replacement of aggregate shoulders, drives, and streets where linear measurement (as specified in Section 3.03.05) is impractical, where only part of an existing aggregate surface requires replacement, or where field conditions require replacement of the aggregate to a greater or lesser thickness than six (6) inches as determined by the Engineer.

Aggregate shoulders disturbed by the Contractor's operations shall be restored or replaced to their original width and thickness with aggregate conforming to the requirements of Section 902 of the MDOT 2003 Standard Specifications for Construction for 22A or 23A aggregate as specified.

3.04.01 Measurement & Payment

Surface aggregate shall be measured in tons or cubic yards as specified in the Proposal. The Contractor shall furnish a truck delivery ticket for each load when it is delivered to the project which clearly states the quantity in tons or cubic yards, date of delivery, and the specific location used on the project. The price per ton or cubic yard as bid in the Proposal shall be payment in full for furnishing, placing, compacting, and grading the surface aggregate as directed by the Engineer.

Measurement of shoulder restoration shall be in lineal feet along the centerline of the main line utility being constructed directly below the shoulder or in square yards according to the Proposal Item. If there is no Proposal Item for shoulder



restoration, it shall be considered incidental to the project, and no separate payment shall be made therefore.

### 3.05 **REPLACEMENT OF HOT MIX ASPHALT (HMA) STREETS**

Hot Mix Asphalt (HMA) streets shall be constructed in accordance with the typical section shown on the drawings and, unless otherwise specified, shall meet the requirements of 13A in Section 501 of the MDOT 2003 Standard Specifications for Construction placed at 280 lbs./sq.yd. minimum (140 lbs./sq. yd. leveling, 140 lbs./sq. yd. surface) over six (6) inches of compacted 22A aggregate.

#### 3.05.01 Materials

Aggregate base for HMA streets shall meet the requirements of 22A in Section 902 of the MDOT 2003 Standard Specifications for Construction. HMA for base, leveling, and surface courses shall be as specified, and shall conform to the requirements of Section 501 of the MDOT 2003 Standard Specifications for Construction. Materials for bond coat shall be as specified in Section 502 of the MDOT 2003 Standard Specifications for Construction.

#### 3.05.02 Construction Methods

Aggregate base for HMA streets shall be placed in accordance with Section 302 of the MDOT 2003 Standard Specifications for Construction.

HMA mixtures shall be placed in accordance with the applicable portions of Sections 501 & 502 of the MDOT 2003 Standard Specifications for Construction. For replacement of valley gutters, pavers shall be equipped with an extension to the vibrating screed adjustable to fit the typical section shown on the drawings.

The Contractor shall not place the aggregate base course until the subgrade has been approved by the Engineer. The Contractor shall not place the first HMA course and each successive HMA course until the underlying aggregate or HMA course has been approved by the Engineer.

#### 3.05.03 Saw Cutting

HMA street, driveway and spillway replacement shall include saw cutting the asphalt pavement at the edge of the trench for the full depth of the pavement. Payment for saw cutting shall be included in the pay items for street replacement and driveway replacement unless otherwise specified.

#### 3.05.04 Measurement & Payment

HMA street replacement shall be measured in lineal feet along the centerline of the main line utility being constructed. The width of the street replaced will not be considered for payment, and payment will not be made for any length of street replaced beyond that which is directly above the pipe installed. HMA street

replacement may also be measured in square yards or tons as specified in the Proposal.

Aggregate base for HMA shall be considered part of the HMA items, and no separate payment will be made therefor unless a specific Pay Item for aggregate base is listed in the Proposal.

The cost of HMA Bond Coat shall be considered part of the bituminous paving.

**3.06 REPLACEMENT OF AGGREGATE SURFACE OR HOT MIX ASPHALT (HMA) PAVED AREAS (PATCHING)**

When the drawings and specifications do not require that the Contractor replace an entire street, the surface that is disturbed shall be replaced as specified herein.

**3.06.01 Materials**

Surfacing aggregate and aggregate base for HMA pavement shall conform to the requirements for 22A aggregate in Section 902 of the MDOT 2003 Standard Specifications for Construction.

Unless otherwise specified on the plans or in the specifications, HMA 13A, conforming to the requirements in Section 501 of the MDOT 2003 Standard Specifications for Construction, shall be used for HMA patches. When existing seal coat pavement is disturbed, a HMA patch shall be placed.

**3.06.02 Construction Methods**

When an aggregate surface is disturbed by the Contractor's operations, the edges of the existing aggregate surface shall be trimmed and shall be free of all foreign material before the new aggregate is placed. The subgrade shall be graded and compacted to the proper lines and grades to match the adjacent surface. The aggregate shall be placed in layers not to exceed six (6) inches and shall be compacted to 98% of its maximum unit weight in accordance with MDOT procedures.

When a HMA surface is disturbed by the Contractor's operations, that surface shall be replaced at a thickness equal to the thickness of the existing pavement adjacent to the trench but not less than one and one-half (1-1/2) inches thick. If existing pavement is greater than two (2) inches in thickness, the replacement pavement shall be placed in two or more layers. Aggregate base shall be replaced at a thickness equal to the adjacent aggregate base (minimum six inches) as specified for aggregate patches above. After placement of the aggregate base but prior to its final shaping and compaction, the edges of the existing pavement shall be trimmed to straight lines a minimum of one (1) foot from the edge of the trench to permit a straight and uniform surface between the existing and new aggregate base. Trimming of the existing pavement shall be by sawing, or other suitable means approved by the Engineer.

The Contractor shall replace all valley gutter in patching areas and shall be considered part of the HMA replacement.

3.06.03 Measurement & Payment

Replacement of aggregate surface shall be measured in lineal feet along the centerline of the main utility line being constructed and HMA paved areas (patching) shall be measured in square feet or yards of actual aggregate surface and HMA patching replaced. Payment shall be made according to the Proposal Item for the type of surface to be replaced and shall include all trimming, removal, shaping, compacting, aggregate base, and HMA or aggregate surface.

3.07 **REPLACEMENT OF CONCRETE IMPROVEMENTS**

The Contractor shall replace all concrete sidewalk, drives, curb and gutter, and pavement removed during the installation of the utility or broken by the Contractor.

3.07.01 Materials

Concrete shall meet the requirements for Grade S2 Concrete as specified in Section 701 of the MDOT 2003 Standard Specifications for Construction. Other materials shall meet the requirements of the applicable portions of the MDOT 2003 Standard Specifications for Construction.

3.07.02 Construction Methods

The thickness of the concrete shall be the same as the concrete adjacent to the trench but shall not be less than four (4) inches. The alignment and grade and the contour and finish of the surface shall be the same as the concrete adjacent to the trench unless otherwise directed by the Engineer.

Pavements, walks, and drives shall be sawcut at the edges of the trench or removed to existing joints. The depth of the saw cut shall not be less than the full depth of the concrete.

The forms and joints and the methods of placing, curing, and protection shall be consistent with standard practice and shall meet all the requirements of the MDOT 2003 Standard Specifications for Construction for the various items.

3.07.03 Concrete Curb & Gutter (Header Curb, 18 inch, 24 inch, and 30 inch)

Concrete curb and gutter shall match the existing curb and contain two No. 4 steel reinforcing bars. Concrete grade shall be S2. Payment shall be made in lineal feet of curb and gutter replaced. All joints shall be saw cut. Curb and gutter shall be placed in accordance with Section 802 of the MDOT 2003 Standard Specifications for Construction.

3.07.04 Sidewalk and Concrete Driveways

Sidewalk and concrete driveways shall be placed in accordance with Section 801 & 803 of the MDOT 2003 Standard Specifications for Construction. Concrete shall meet MDOT S2 or S3; 6 inch by 6 inch woven wire steel mesh shall be required within all 6-inch concrete sidewalks.

3.07.05 Measurement & Payment

Concrete walks, pavement, and drives will be measured in square feet or yards of actual concrete surface replaced. Concrete curb and gutter shall be considered part of the construction of the utility line unless a specific item is provided in the Proposal for its replacement. If so specified, the concrete curb and gutter or valley gutter replacement shall be paid for in lineal feet measured along the face of a header curb or along the flow line of gutter when constructed as part of the curb. Concrete that has been broken by the Contractor outside the limits of the trench will not be considered for payment unless otherwise specified.

**3.08 REPLACEMENT OF LAWN IMPROVEMENTS**

3.08.01 Underground Sprinkling Equipment

Underground sprinkling lines, valves & heads, and water system curb stops and boxes are specifically excluded from the pay items. The Contractor shall take the necessary precautions to preserve this equipment during construction. Any underground sprinkling equipment disturbed by the Contractor shall be replaced at the Contractor's expense.

All underground sprinkling equipment shall be replaced in a timely fashion so as to minimize damage to the lawn areas. The Contractor will be responsible for any lawn damage caused by delayed replacement of the sprinkling equipment.

3.08.02 Fences

Fences, which are removed for construction, shall be replaced with equal or better type and size. The cost of removing and replacing the fences shall be considered part of the major items of work found in the Proposal unless otherwise specified.

3.08.03 Ornamental Shrubbery and Bushes

Ornamental shrubbery and bushes that are removed during construction shall be replaced in kind and size in a vigorous growing condition. Replacement costs shall be considered part of the major items of work found in the Proposal unless otherwise specified. All shrubs and bushes replaced shall be insured by a one-(1) year warranty commencing from the date of installation.

**3.09 TURF RESTORATION**

All areas of established turf shall be replaced as nearly as possible to their original condition.

**3.09.01 Topsoil**

Topsoil shall be placed at a minimum depth of four (4) inches over all areas disturbed by the Contractor's operations. The subgrade shall be graded to conform to the adjacent contours and shall be approved by the Engineer before placing topsoil. The topsoil shall then be placed in accordance with Section 816 of the MDOT 2003 Standard Specifications for Construction.

The soil shall be dark, organic natural surface soil, exclusive of muck or peat, suitable for the establishment of grass or other vegetable growth.

**3.09.02 Fertilizer**

After the topsoil has been placed, it shall be fertilized at the rate of two (2) pounds per 1,000 square feet, in equal proportions of nitrogen, phosphoric acid and potash, or as directed by the Engineer. Fertilizer shall be applied just before the placing of the seed to retain its full benefit before unfavorable weather can cause deterioration.

**3.09.03 Seeding**

All previously seeded lawn areas shall be reseeded with Class A seed. Other areas disturbed by the Contractor's operations shall be seeded with Roadside seed. Seed mixtures, application rates, and methods shall be in accordance with Section 816 of the MDOT 2003 Standard Specifications for Construction.

Seasonal limitations on seeding in Section 816 of the MDOT 2003 Standard Specifications for Construction are waived. The Contractor shall repeat the seeding procedure as often as necessary to produce a close stand of weed-free grass.

**3.09.04 Mulching**

All seeded areas shall be mulched immediately following the seeding. Mulching shall be applied to all newly seeded areas at a rate of two (2) tons per acre in accordance with the requirements of Section 816 of the MDOT 2003 Standard Specifications for Construction. Separate loose straw mulch is prohibited on residential lawn areas.

**3.09.05 Hydro Application**

All fertilizing, seeding and mulching shall be applied by an approved Hydro seeding and mulching process unless separate applications as heretofore described are approved by the Engineer.

3.09.06 Sod

Sod shall be placed only where directed by the Engineer or as noted on the drawings or specifications.

All sod shall be nursery grown, conforming to MDOT requirements for Class A. Sod shall be approved by the Engineer before placing and shall be placed in accordance with the requirements of Section 816 of the MDOT 2003 Standard Specifications for Construction. The base on which the sod is to be laid shall consist of a minimum of four (4) inches of topsoil placed and fertilized in the same manner required for seeding.

3.09.07 Measurement & Payment

Turf restoration will be measured in lineal feet along the centerline of the main utility line being constructed. Payment will be made according to the appropriate item for seeding or sod. Topsoil, fertilizer, and mulch shall be incidental to these items unless specific proposal items are provided. Any area disturbed by the Contractor's operations outside of the limits of the trench shall be restored by the Contractor to its original condition but will not be considered for payment.

**3.10 SCHEDULING OF RESTORATION WORK**

Initial restoration (rough grading, temporary aggregate if necessary, removal of excess excavated material and debris) shall be done each day to the extent necessary to allow the movement of local traffic and permit access to all properties for emergency vehicles. Maintenance of streets, drives, sidewalks, etc. shall be the responsibility of the Contractor (including dust control, grading, stabilization, etc.) until the restoration is complete and has been accepted by the Engineer.

Restoration of each street or section of utility line shall follow the construction in a timely fashion so as to minimize inconvenience to the adjacent property owners and the general public. The manner in which this restoration is done by the Contractor will be a determining factor in the approval by the Engineer of staking requests and partial payment requests.

**3.11 LIMITS FOR MEASUREMENT & PAYMENT FOR SURFACE RESTORATION**

All work necessary to return the area of construction operations to its original condition, other than the items listed in the Proposal, shall be considered incidental to the construction, and no specific payment will be made therefor.

For surface restoration items measured in lineal feet, payment will be based upon the type of surface that is directly above the utility. Only one surface restoration item shall be paid for each lineal foot of utility. Additional restoration on either side of the utility to the limits of construction will be done by the Contractor at no additional cost to the Owner. For example, when the utility is directly under the bituminous street, only the item of bituminous street restoration will be paid.

Topsoil, seed, fertilizer and mulch required to restore the area adjacent to the street will not be paid for separately.

Payment will be made for the proposal items only. All of the work specified above and indicated on the drawings will be considered included in the unit prices.





**BOARD OF COUNTY ROAD COMMISSIONERS  
OTTAWA COUNTY, MICHIGAN**

**SOUTHWEST OTTAWA COUNTY LANDFILL  
CONTRACT NO. 3 – LANDFILL COVER**

**1.0 GENERAL REQUIREMENTS**

**1.1 Specifications**

The work under this contract shall be performed in accordance with the attached specifications and drawings, the Michigan Department of Transportation Standard Specifications for Highway Construction (current edition) and the following project specifications.

**1.2 Use of Site**

Site areas are outlined in the project drawings. The Contractor shall limit site construction activity to areas defined as the contract limit as shown on the plans.

The Contractor shall keep vehicle traffic across the landfill area to a minimum.

The Contractor shall not unreasonably encumber the site with materials and equipment that interfere with site operations.

Repair of disturbed areas outside of assigned work areas will be considered incidental to the project. Restoration of disturbed vegetative areas shall include grading, topsoil, seed, fertilizer and mulching activities. Existing roads may be utilized by the Contractor. The Contractor will be responsible to improve and maintain the roads as necessary for construction. These improvements shall include but are not limited to, grading, gravel placement, compaction, plowing, and dust control.

**1.3 Work Schedule**

The Contractor shall coordinate construction activities with the Engineer and the Ottawa County Road Commission.

The Contractor shall file a construction work schedule with the Ottawa County Road Commission, and the Engineer within ten (10) days of the Notice to Proceed. Work schedule milestones shall be noted. Work shall not proceed until a work schedule is on file. Should the Contractor need to alter the schedule, a written request must be provided to the Engineer for review and approval.

If the Contractor should fail to adhere to the approved progress schedule as revised, he shall promptly adopt such other or additional means and methods of construction as will make up for the time lost, and will assure completion in accordance with such schedule.

Engineering and construction observation services will be provided to allow the Contractor to work, at his discretion, from 7:00 am to 7:00 pm, Monday through Saturday. No Sunday work will be allowed. No truck traffic will be permitted through Lakewood/144<sup>th</sup> and Lakewood/152<sup>nd</sup> intersections after 5:00 p.m.

Supply of materials from and loading by Waste Management, Inc. (WMI) at the Autumn Hills site will be from 7:00 am to 4:30 pm, Monday through Friday (except Holidays). Loading activities may be suspended if the loading area becomes inaccessible due to weather events, such as precipitation and freeze/thaw.

All soil compaction tests and survey shall be scheduled with the Engineer. Survey notice of seventy-two hours and compaction testing notice of twenty-four hours will be required.

#### 1.4 Site Safety

Safety is of extreme importance to the Owner. The Contractor is solely responsible for site safety (OSHA). All precautions are to be taken for Public and Contractor Safety.

General site safety must be maintained at all times.

The landfill waste degradation process produces a potentially explosive environment. No smoking shall be permitted on any portion of the site.

Construction fence will be required daily around trenches, stockpiles and exposed refuse.

#### 1.5 Dust Control

The Contractor shall be required to provide an approved method for dust control along the construction route, and in the construction vicinity for the duration of the contract. Arrangements must be available and documented in writing for the Engineer prior to construction activities.

Brine, waste oil, or any other material that may compromise the site monitoring system shall not be used for dust control. Dust Control is incidental to the cost of the project.

1.6 Soil Erosion and Sedimentation Control

The Owner shall obtain a permit for soil erosion and sedimentation control from the Ottawa County Drain Commissioner.

All work shall comply with the rules and regulations of P.A. No. 347. The Contractor shall be required to provide approved methods for soil erosion and sedimentation control during the time of the contract.

The Contractor shall conduct all work in a manner that soil, fuels, oils, and all other harmful materials are confined within the project limits and prevented from entering storm sewers, ditches, or water courses. Soil tracked or spilled onto the paved driveway and public roads shall be removed by the Contractor daily, at the end of each work day, or as directed by the Engineer. This may require sweeping, vacuuming, or other measures to remove the soil completely.

1.7 Protection of Natural Resources

The Contractor shall take all necessary steps to prevent damage to fish and game habitat and to preserve the natural resources of the State. Construction shall be carried out so as to minimize discharge of damaging material into any stream, lake or reservoir.

The Contractor shall not permit any sand or debris of any kind to enter the existing ditches, streams, storm sewers or culverts.

The rules and regulations of all work shall comply with P.A. No. 346 (Inland Lakes and Streams Act) and P.A. 347 (Soil Erosion and Sedimentation Control Act).

1.8 Material Testing

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

The Engineer will provided material testing services as part of the repair documentation program. The Contractor shall pay for any test found to be outside the Contract specified values.

The Contractor shall furnish manufacturer's certification for all materials including soils and restoration materials used in this project. Certifications shall indicate that the materials meet requirements for the kind and class of material specified.

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

1.9 Maintenance of Traffic

During the progress of work, the Contractor shall accommodate vehicular traffic associated with the operations of the Ottawa County Road Commission. Access roads shall not be obstructed. The Contractor shall place and maintain temporary drives which in the opinion of the Engineer are necessary to accommodate the site users. Signage, as appropriate, shall be provided by the Contractor at no cost to the Owner.

The Owner will require access to areas southwest of the landfill. The Contractor shall accommodate access by the Owner and the Owner's Contractors on the haul road and landfill perimeter trails

1.10 Protection of Monitoring & Purge Wells

The Ottawa County Road Commission has monitoring and purge wells in and around the work area. All work shall be conducted in a manner that protects well integrity. Contractor shall repair or replace any damaged wells without additional cost to the Owner.

Attached in Appendix C is a map that shows the locations of existing wells. The Contractor shall locate all wells and take necessary measures to protect the wells during construction. The Engineer will assist the Contractor in locating the wells, prior to construction, if the Contractor is unable to locate a well.

1.11 Pressure Relief Vents

The Ottawa County Road Commission has pressure relief vents in and around the work area. These vents may be eliminated in anticipation of replacement with new vents. This will allow grading to be accomplished without obstacles. The vents shall be removed, then filled with flo-able fill up to the existing grade. Vent materials may be placed in the landfill for disposal.

1.12 Submittals

Project submittals are required for quality control, inspection, and reporting purposes. The Contractor shall provide all submittals as described and within the required time as specified. Failure to complete submittals as required shall be sufficient grounds to halt construction activities at no cost to the Owner or his representatives. No claim for Contractor damages shall be reviewed.

1.13 Material Quantities

The Owner has completed an elevation survey of the work area. Elevations obtained during the survey event will be considered original grade. Material quantities are based on original grade elevations obtained prior to construction.

Quantities listed on the plans and in the specifications are estimated. The Contractor shall complete all work items shown on the plans and listed in the specifications for the lump sum bid price. No additional payment will be made for work included in the plans and specifications. Changes in the work requested by the Owner will be covered by written Change Order prior to the work being done.

## 2.0 SITE PREPARATION & SAND SUBGRADE

### 2.1 General

Construction activities are located within the landfill cover area, clay storage area, the haul road between the sand borrow pit and the landfill cover area, and sand borrow pit area as shown on the plans.

Existing grade survey data obtained prior to commencement of work, as shown on the plans, shall be considered original grade.

### 2.2 Site Preparation

Vegetative cover exists on all work areas. Vegetative cover includes trees, stumps, brush, and other miscellaneous items. A majority of the trees have been removed from the clay storage area and a few trees and the stumps remain. The anticipated vegetative cover on the landfill cover area includes brush and some trees. The anticipated vegetative cover in the sand borrow pit area and haul road includes brush, areas of dense trees, and stumps.

The Contractor shall perform all clearing, brushing, and tree removal required for the proposed construction. Clearing, brushing, and tree removal shall be confined to the limits, as shown on the plans, of the areas detailed in section 2.1. The areas shall be completely cleared except that a few trees will be marked by the Engineer to save. The stumps can be ground to at least one foot below grade. However, the sand that is obtained from the sand borrow pit area shall be free of stumps and roots.

All trees, brush, and stumps from the clearing and brushing operations shall be disposed of by the Contractor by burning, hauling from the site, or other suitable means as approved by the Engineer. The Contractor shall obtain the necessary burning permits and shall comply with the safety regulations required.

### 2.3 Pre-Cover Grading

The existing landfill area requires grading prior to placement of the cover in order to achieve proper slopes for the cover.

Pre-Cover proposed grades are approximately 3.5 feet below the finished grades shown on the plans. The refuse shall be graded so that the top of refuse is at least 3.5 feet below the finished grades in all areas. It is anticipated that there will be

approximately 16,000 cyds of reshaping of the refuse. This entails 16,000 cyds of cut that will be relocated to areas with existing grades of more than 3.5 feet below finished grades. In addition to the 16,000 cyd of reshaping the entire landfill area shall be level/smoothed prior to placement of sand. Areas with exposed refuse shall be covered with sand within 48 hours.

#### 2.4 Sand Borrow Pit Area & Pond

See construction plans for locations and cross sections. Sand for the sand subgrade shall be excavated from this area without dewatering. After completion of sand excavation, the area will be restored as a pond as detailed on the construction plans. It is estimated that 78,000 cyd of sand will be removed for use as the sand subgrade for the landfill cover. Sand may be stockpiled as necessary for construction within any of the defined limits shown on the plans.

#### 2.5 Sand Subgrade

The sand subgrade shall be placed one foot thick over the graded refuse. Sand subgrade material shall be obtained from the sand borrow pit area.

The sand shall be placed and compacted to a minimum of 90% of the Modified Proctor Density.

Sand subgrade density testing shall be performed by the Owner's representative. The final thickness of the sand subgrade shall be +/- 0.1 feet of the plan thickness. Sand subgrade verification shall occur prior to placement of the clay cap.

### 3.0 CLAY & TOPSOIL HAULING

#### 3.1 Source

Waste Management, Inc., Autumn Hills landfill at 700 56<sup>th</sup> Avenue in Zeeland Township.

#### 3.2 Estimated Volume

- 165,000 cyd of Clay (300,000 Tons)
- 57,000 cyd of Topsoil (100,000 Tons)

#### 3.3 Excavation & Loading

Waste Management, Inc. will excavate and load the Contractor's trucks. All trucks shall be weighed by Waste Management, Inc. on the landfill scale for each trip. All weigh tickets shall be submitted to the Engineer for the work to be eligible for payment. The Contractor shall consult Waste Management, Inc. to coordinate operations. The Contractor shall comply with all of the requirements of the Ottawa County Road Commission.

### 3.4 Number of Required Trucks (Estimated)

Estimate:

- Waste Management, Inc. has the capacity to load approximately 1,200 cyd/day (2,000 Ton/day).
- Assume 28 cyd/truck (50 Ton/truck).
- Therefore Waste Management can load approximately 40 trucks/day
- Assume six trucks and 1.5 hr/trip
- Therefore approximately 7 trips/truck/day

The Contractor shall anticipate variations from above due to weather and traffic. The Contractor will be allowed to adjust all of the above assumptions provided Waste Management, Inc. can accommodate the changes. No additional payment will be made for accommodating variations.

### 3.5 Haul Route

The Ottawa County Road Commission has designated a haul route for this project. All construction traffic shall utilize the designated haul route. The designated route follows:

56<sup>th</sup> Street to Byron Road to Business I-196 to VanHill to Chicago Drive to Lakewood Boulevard to 160<sup>th</sup> Avenue.

Sheet 5 of the construction plans shows the haul route graphically. Appendix A contains a table developed by the Ottawa County Road Commission that includes distances, traffic counts, traffic control devices, and level of service for two of the intersections.

Trucks will not be allowed through the intersections of Division (144<sup>th</sup>) & Lakewood and 152<sup>nd</sup> and Lakewood after 5:00pm, due to traffic congestion at these intersections.

### 3.6 Clay Storage Area

Clay may be stockpiled in the clay storage area as detailed on sheet 2 of the construction plans. Only the area shown on the plans shall be utilized for clay storage unless approved by Owner and Engineer. All chips from grinding stumps shall be removed prior to storing the clay. A few select trees remain in the clay storage area, these trees shall be protected and saved. After utilization of the clay storage area, all of the clay shall be removed and the area shall be restored in accordance with Section 6.

#### 4.0 COMPACTED CLAY

A minimum two foot thick clay cap is required to be placed above the sand subgrade layer as shown on the plans. The clay shall have a unified soil classification of ML, SC, CL or CH as determined by ASTM D2487-69. The clay cap shall be compacted to a minimum of 90% of Modified Proctor Density at a moisture content between 2% less than and 5% more than the optimum moisture content. The compacted soil shall have a permeability not exceeding  $10^{-7}$  cm/sec.

Clay sloping may require field adjustments. Field changes will be completed at the direction of the Engineer. Capping minimum grade shall be 4 percent.

The clay cap shall be placed in lifts not exceeding 8 inches compacted in place thickness with the final lift filled and graded to 6 inches below the finished grade contours shown on the plans.

Each day's clay shall be placed, compacted and rolled smooth. No material shall be left uncompacted or unrolled at the end of a working day. Should rain halt construction, surface materials shall be recompacted and tested prior to continuing clay placement. Final grading shall be  $\pm 0.1$  foot of plan grades.

Clay material shall be wetted and compacted as required to prevent damage from desiccation of the material or other construction activities. Moisture and compaction shall be maintained until the clay materials are covered by subsequent capping activities.

It shall be the responsibility of the Contractor to maintain compaction and moisture requirements prior to top soil cover placement. Should cracking occur, the Contractor shall be required to scarify to 4 inches below the depth of the cracking, moisten and recompact the clay to meet compaction criteria.

The Contractor will not be allowed to use groundwater from the site. The Contractor will be responsible to obtain water from another source. Mr. Tom VanDerKolk, Holland Charter Township, can be contacted at (616) 396-1891 with the respect to the availability of purchasing water, from the Park Township Water System.

Equipment and personnel for transporting, stock piling, cleaning haul route, placing, grading, and compacting and all other work required by the plans and specifications, shall be the responsibility of the Contractor.



## 5.0 QUALITY CONTROL FOR CLAY CAPPING

Quality control testing of the clay cap will be the responsibility of the Engineer.

The following tests shall be run every day or whenever the soil texture changes significantly:

1. Modified Proctor Test ASTM D1557
2. Natural Moisture Content
3. Grain Size ASTM D422
4. Atterberg Limits ASTM D4318

The compacted density and moisture content of the clay cap shall be tested at a minimum of four tests per day per lift. The testing grid shall be rotated with each lift to maximize coverage.

Final clay capping elevations will be checked and contour surveyed following completion of clay placement and prior to top soil placement. Final clay capping elevations shall be +/- 0.1 feet of the plan grades. The Contractor shall notify the Engineer five working days prior to anticipated completion of clay placement and confirm the completion date 48 hours prior to completion.

Final permeability will be checked by the Engineer at the conclusion of clay placement. The Contractor shall provide assistance in the collection of Shelby tubes.

The quality control program will be documented by written, daily records of all work and tests performed during construction.

## 6.0 LANDSCAPING

Topsoil: Topsoil shall be placed over the clay cap. The Contractor shall use topsoil available at the Waste Management Inc. landfill. Any additional materials required to compensate for lost materials shall be incidental to the project.

Topsoil shall be a minimum of 6" thick and shall be free of roots, debris, or any deleterious objects.

In addition to the areas above the clay cap, any areas disturbed by Contractor activity shall be restored with topsoil, seed, fertilizer and mulch as specified above. This will include the clay storage area, the haul road from the sand borrow pit area to the landfill cover area, and the sand borrow pit area.

Seeding: The Contractor shall seed all areas disrupted by construction. Three types of seeding mixtures shall be used. The seeding mixtures follow:

- Seeding Mixture #1 – MDOT Seeding Mixture TUF
- Seeding Mixture #2 – JF New Low-Profile Prairie Seed Mix (Found in Appendix B) or approved equal.

- Seeding Mixture #3 – MDOT Seeding Mixture TUF revised to eliminate Perennial Ryegrass and substitute the JF New Land fill seed mix, at the Perennial Ryegrass proportions. The JF New Land fill seed mix can be found in Appendix B.

Seeding Mixture #1 shall be used in the clay storage area, the haul road from the sand borrow pit, the pond area above the 620 contour, and the landfill cover area below the 645 contour.

Seeding Mixture #2 shall be used at the pond between contours 616 and 620.

Seeding Mixture #3 shall be used at the landfill cover area above the 645 contour.

Apply at a rate of 3 pounds per 1,000 square feet. Application shall be by the hydro-seed method at 1,200 pounds per acre (use wood fiber mulch).

The JF New Land fill seed mix used in Seeding Mixture #3 shall be broadcast or drill seeded at the above specified rates prior to placing the remaining portion of Seeding Mixture #3 by the hydro-seed method.

Fertilizer: Fertilizer shall be a commercial chemical fertilizer with analysis of 30-30-40. Fertilizer shall be spread uniformly over the area to be seeded at a rate of 400 pounds per acre within the hydroseed mixture.

Plantings: New trees shall be furnished and planted in the Planting Areas.

(8) 1½" caliper Nyssa Sylvatica (Black Gum) trees or approved equal shall be located throughout the planting areas. Locations are to be determined in the field by the Owner.

(50) 8-10 foot tall bare rooted DN-34 hybrid poplar (Imperial Carolina) trees as supplied by Ecolotree or approved equal shall be located throughout the planting area. Locations are to be determined in the field by the Owner.

Black Gum tree placement shall be in accordance with the detail on sheet 5 of the construction plans, MDOT 917 and MDOT 815, Balled and burlapped nursery stock.

Imperial Carolina tree placement shall be in accordance with Ecolotree recommendations as found in Appendix B.

Trees shall be placed prior to seeding.

## 7.0 PLANTING AREA

Planting areas are shown on sheet 3 of the construction plans. These areas shall be constructed after completion of the landfill cover. Topsoil shall be used to fill the planting areas to the contours as shown on the plans.

## 8.0 SOIL EROSION AND SEDIMENTATION CONTROL

The Owner will apply for a Soil Erosion and Sedimentation Control Permit. All the requirements set forth in the permit shall be followed. Additional soil erosion and sedimentation control measures are detailed on the plans.

## 9.0 PRESSURE RELIEF VENTS

Pressure relief vents shall be installed at the locations and in accordance with the detail shown on the plans. Materials encountered will be the cover components and refuse material.

The construction method shall produce a hole with a minimum diameter of twelve inches to provide adequate gravel pack around vent screens/perforated pipe.

The pressure relief vent detail shown on the plans indicates the final vent detail after cap completion. Four inch diameter Schedule 80 PVC pipe shall be used. Below ground pipe and screens/perforated pipe shall have flush joint threaded connections or be one continuous pipe. Solvent welds may be used for the end cap and above ground construction. A stainless steel insect screen shall be provided on the down turned 90° elbow.

Vent construction shall consist of 4-inch diameter slotted/perforated pipe set from the bottom of the hole to top of the sand layer. The slotted/perforated pipe shall contain at least 2.7 square inches of open area per foot. A 4" Schedule 80 PVC slotted pipe with 0.01" opening slots spaced at ¼" spacing or Engineer approved equal shall be used. The slotted/perforated pipe shall be gravel packed with a MDOT 17A coarse graded aggregate or Engineer approved equal. A bentonite slurry shall be used to seal the annular space around the solid casing riser.

The Contractor shall remove and dispose of excess materials within the landfill.

## 10.0 FENCE

There is an existing fence around the perimeter of the landfill cover area. This fence shall be removed to the extent necessary to complete the grading operations. Once grading operations have been completed the fence shall be reinstalled. In addition the fence fabric has come loose from the poles in several areas around the perimeter. There is approximately 500 lineal feet that the Contractor shall secure the fabric to the poles and top wire. Also there is approximately 100 lineal feet of fence that is in disrepair and requires replacement in kind with the existing fence. All work shall be completed in accordance with MDOT Section 808.



DATE & TIME PACKAGE LEFT FOR PICKUP	DROPPED OFF BY	NAME & COMPANY EXPECTED TO PICKUP	DATE PACKAGE WAS PICKUP
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Appendix A

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Haul Route





Southwest Ottawa County Landfill  
Clay Hauling Route

11/16/2005

Street	Estimated Distance (ft)	Cross Street	Loaded	Return	Traffic Counts (vpd)	Control Device
56th	635	Adams				2-way stop
56th	5,300	Perry			1,433	none
56th	5,300	Byron	Left turn	Right turn	1,358	2-way stop
Byron	5,300	64th				4-way stop
Byron	5,300	72nd			6,080	none
Byron	2,700	76th				none
Byron	5,300	84th			6,251	signal
Byron	700	Bus I 196				signal
Bus I 196	2,600	88th				none
Bus I 196	5,300	96th			15,000	signal
Bus I 196	5,300	104th				signal
Bus I 196	3,000	VanHill	Right turn	Left turn		none
VanHill	1,000	Chicago Drive	Left turn	Right turn	1,382	signal
Chicago Drive	2,100	112th			12,199	signal
Lakewood Blvd	5,300	120th			19,793	signal
Lakewood Blvd	3,700	North Park				signal
Lakewood Blvd	3,100	Beeline				signal
Lakewood Blvd	1,700	Douglas				signal
Lakewood Blvd	1,500	N River Ave			11,456	signal
Lakewood Blvd	2,600	Beech			11,697	none
Lakewood Blvd	3,500	Division (144th)			10,281	4-way stop
Lakewood Blvd	5,300	152nd			8,051	4-way stop
Lakewood Blvd	5,300	160th	Right turn	Left turn	5,412	none
160th	2,600	James			1,230	none
160th	3,400	Landfill Drive				none

87,835

Estimated 16.6 miles



Appendix B

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Landscaping



# LOW-PROFILE PRAIRIE SEED MIX

For installation services, please call (574) 586-2412

This mix provides a nice diversity of shorter-profile prairie grass and wildflower species. Most species will grow to four feet or less, making this mix a desirable choice for areas where a dominance of taller forbs and grasses is not appropriate. Once established, the wildflower community will display a variety of colors, blooming from early spring until late summer. This mix is suitable for medium to dry sites. The grass component of this mix will perform best in sandier soils. This seed mix will include at least 4 of 6 native permanent grass species and 30 of 33 native forb species. Seeding instructions begin on page 52.



BOTANICAL NAME	COMMON NAME	OZ./ACRE
<b>PERMANENT GRASSES</b>		
<i>Andropogon scoparius</i>	Little Blue Stem	28.00
<i>Bouteloua curtipendula</i>	Side Oats Grama	10.00
<i>Elymus canadensis</i>	Prairie Wild Rye	16.00
<i>Koeleria cristata</i>	June grass	2.00
<i>Panicum virgatum</i>	Prairie Switch Grass	1.00
<i>Sporobolus heterolepis</i>	Prairie Drop Seed	4.00
		<b>61.00</b>
<b>TEMPORARY COVER</b>		
<i>Avena sativa</i>	Seed oats	360.00
<i>Lolium multiflorum</i>	Annual rye	100.00
<i>Phleum pratense</i>	Timothy	20.00
		<b>480.00</b>
<b>FORBS</b>		
<i>Amorpha canescens</i>	Lead Plant	1.00
<i>Anemone cylindrica</i>	Thimbleweed	0.75
<i>Aquilegia canadensis</i>	Wild Columbine	0.75
<i>Asclepias tuberosa</i>	Butterfly Milkweed	2.00
<i>Aster ericoides</i>	Heath Aster	0.50
<i>Aster laevis</i>	Smooth Blue Aster	0.75
<i>Aster novae-angliae</i>	New England Aster	0.50
<i>Baptisia leucantha</i>	White Wild Indigo	2.00
<i>Cassia fasciculata</i>	Partridge Pea	2.50
<i>Coreopsis lanceolata</i>	Sand coreopsis	1.50
<i>Coreopsis tripteris</i>	Tall Coreopsis	0.50
<i>Echinacea purpurea</i>	Purple coneflower	3.50
<i>Eryngium yuccifolium</i>	Rattlesnake Master	2.50
<i>Lespedeza capitata</i>	Round-Head Bush Clover	2.00
<i>Liatris aspera</i>	Rough Blazing Star	3.00
<i>Lupinus perennis</i>	Wild Lupine	8.00
<i>Monarda fistulosa</i>	Prairie Bergamot	0.50
<i>Parthenium integrifolium</i>	Wild Quinine	1.00
<i>Penstemon digitalis</i>	Foxglove beard tongue	0.50
<i>Petalostemum purpureum</i>	Purple Prairie Clover	1.50
<i>Petalostemum candidum</i>	White prairie clover	1.50
<i>Physostegia virginiana</i>	False Dragonhead	1.00
<i>Pycnanthemum virginianum</i>	Common Mountain Mint	0.50
<i>Ratibida pinnata</i>	Yellow Coneflower	3.00
<i>Rudbeckia hirta</i>	Black-Eyed Susan	3.00
<i>Rudbeckia subtomentosa</i>	Sweet Black-Eyed Susan	2.00
<i>Silphium integrifolium</i>	Rosin Weed	3.00
<i>Silphium terebinthinaceum</i>	Prairie Dock	2.00
<i>Solidago nemoralis</i>	Old-Field Goldenrod	0.50
<i>Solidago rigida</i>	Stiff Goldenrod	1.00
<i>Tradescantia ohioensis</i>	Common spiderwort	1.25
<i>Vernonia altissima taeniotricha</i>	Hairy tall ironweed	1.75
<i>Veronicastrum virginicum</i>	Culver's Root	0.50
		<b>56.25</b>
<b>Annual/Perennial Forbs Mix</b>		<b>32.00</b>
See page 39		

## MIX STATISTICS

Native Component	PLS lbs./Acre	PLS Seeds/Acre	PLS Seeds/Sq. Ft.	% of Native Mix
Forbs	4.58	2,063,025	47.36	72.45%
Grasses	3.81	784,350	18.01	27.55%
Total Natives	8.39	2,847,375	65.37	100.00%
Non-Native Forbs	0.94	938,596	21.55	
Cover	30.00	5,881,250	135.01	
<b>Totals</b>	<b>39.33</b>	<b>9,567,271</b>	<b>219.93</b>	

## SOLD IN 1/4 ACRE INCREMENTS

1/4 More Acres	1/2 Acre	3/4 Acre
\$1,150.00	\$690.00	\$370.00



# INSTALLATION INSTRUCTIONS FOR SEED MIXES

JFNew offers complete design, planting, seeding, management and monitoring services for native prairie, wetland and woodland installations. These services can be provided for large or small projects throughout the Midwest. We also offer site management services such as controlled burning, erosion control and exotic species control.

For those of you who are more hands-on, we have prepared the following general recommendations. **Please note that the specific characteristics of each site play a role in how these general techniques are implemented.**

## GENERAL RECOMMENDATIONS

Restoring native plant communities and creating attractive, dynamic landscapes using native plants is a challenging, fun pursuit. However, to successfully achieve your project's goals, many variables must be understood and considered. We recommend that you consult with restoration and landscape experts before you start your project. It could save you a great deal of time, frustration and money.

**The successful establishment of native plant communities requires six major factors:**

- *selection of a suitable site*
- *appropriate materials selection*
- *appropriate site preparation*
- *proper installation technique*
- *post-installation site management*
- *time*

During the first 6-12 months of a seeding project, it may be hard to differentiate between the germinated native seed and undesirable weeds. Although some

of the wildflower and grass species will be obvious within the first year, it may take 2 to 4 years until the native plant community is sufficiently established to be recognized by most people.

## MANAGEMENT OF NATIVE PLANT COMMUNITIES

A newly seeded prairie should receive the equivalent of 1 inch of water per week for the first 6-8 weeks, either via rainfall or irrigation. Watering is always beneficial, especially during extended dry periods while seed is germinating and plants are becoming established.

Do not pull weeds while seed is germinating and seedlings are establishing or desirable plants may be uprooted with the weeds. Weeds also provide fuel for burning during the first few years of prairie establishment.

Controlled burns are the most effective prairie management tool. Burning is essential to the long-term maintenance of your prairie. Burns should be conducted only by experienced persons who are properly equipped and trained in fire management techniques and safety.

- *Conduct burns from mid-October through April.*
- *Burn your prairie annually for the first three years, and at least every third year thereafter. If there is insufficient growth to sustain a good burn, the burn may be delayed until the second year.*
- *Large sites should be divided into sections and only one section burned each year. This enhances prairie diversity, leaves habitat*

*undisturbed and smaller areas are easier to control.*

• *If burning is not practical, mowing may be substituted. Mow in late fall annually the first three years, and every third year thereafter.*

• *Exotic, invasive species may need to be aggressively managed with the appropriate herbicides.*

Although native plants require the same care and attention as non-native, cultivated varieties in the first few years, once established, native plants should survive and thrive for many years with little maintenance.

## PRAIRIE SEED INSTALLATION RECOMMENDATIONS

### **Optimum seeding time:**

October 1 (fall) to March 15 (late winter)

(Seeding can be done outside of that window but establishment may take longer. Do not seed during the summer when soil moisture and rainfall may be limited.)

### **Seedbed preparation:**

Existing vegetative growth should be removed or killed with herbicides. Surface till the seedbed to a depth of 2 to 4 inches. If the ground is wet, delay tilling until the soil dries enough to break apart when tilled. Lightly compact the tilled soil with a roller, cultipacker, or similar implement. Tilling can usually be omitted if using a no-till seed drill.

### **Sowing seed:**

Sow seed by hand or with a broadcaster and press into the soil with a roller, cultipacker, or similar implement. Do





not cover seed more than ¼" deep. If not already included in the seed mix, plant a cover crop of seed oats at 32 pounds per acre and annual ryegrass at 10 pounds per acre with the seed. If using a no-till seed drill, follow the manufacturer's recommendations, being careful not to cover the seed more than ¼" deep. A 1" thick mulch layer of crimped straw is recommended on erosion-prone areas.

## WETLAND SEED INSTALLATION RECOMMENDATIONS

### Optimum seeding time:

October 1 (fall) to March 15 (late winter)

(Seeding can be done outside of that window but establishment may take longer. Do not seed during the summer when soil moisture and rainfall may be limited.)

Before you plant, be sure surrounding soils are stabilized and cannot erode into the wetland. If the slopes are newly constructed and exposed, the germination and growth of your wetland seeds can be severely inhibited by siltation, sedimentation and cloudy water.

Vegetation on surrounding slopes is the best protection from erosion damage. A quick-growing cover crop such as oats, annual ryegrass, or turf grasses is acceptable, but a seeding of permanent native species is advised for optimum long-term stabilization and natural appeal. Call JFNew for recommendations.

Other controls such as silt fences, erosion control blankets, straw mulches, and straw bale dams should be installed as required to protect your wetland.

The type of soil substrate is important to planting success. A heavy clay substrate is not conducive to seed germination and growth. You should consider incorporating topsoil, peat, compost, or black dirt into the substrate before planting if your soil is heavy or nutrient-poor.

Make sure required permits (if any) have been obtained.

### IF WETLAND IS TEMPORARILY DRY:

Good success can be obtained by planting when the wetland is dry. If the wetland has not naturally dried down then pumping out the water or using outlet water controls (if available) may make sense. Remember to obtain any required permits.

Scarify the soil surface by shallow tilling or raking.

Seed that is packaged wet should be sown in the lower elevations of the wetland where water levels will be deeper. Dry-packaged seed should be sown on the higher elevations but can overlap into the wet-seed areas.

Press seed firmly into the soil using a roller, cultipacker, or similar equipment. Very light raking is an acceptable alternative, but be careful to not cover seed more than ¼" deep.

Restore water level or wait for normal rainfall to bring water level up after seeding. If feasible, use outlet controls to maintain water level depths between ½" and 6" until seed germinates and wetland vegetation is well established.

### IF WETLAND IS WET:

In instances where water level control is not possible, satisfactory results may be obtained by following the techniques listed below.

Sow wet-packaged seed into 4" to 6" of standing water. Mixing seed with damp clay balls aids in distribution and anchoring of seed in desired locations.

Rake or till lightly an area 6" to 10" above waterline elevation (actual width of seeding area along shore will vary with degree of shoreline slope). If undesirable weed growth is present, mow or kill before tilling.

Sow dry-packaged seed in areas at and above waterline. If soil moisture conditions permit, press seed firmly into the soil using a roller, cultipacker, or similar equipment. Use caution so as not to cover seed more than ¼" deep.

### WINTER SOWING:

Good success can be obtained from winter seeding. Sow wet and dry-packaged seed in the zones as described above directly on bare ground during a winter thaw or on old, frozen snow (do not apply to loose, newly-fallen snow due to the potential for wind loss). Normal freezing and thawing will create openings in the ground, allowing the seed to work its way naturally into the soil. The seed will be in place to germinate when conditions are right in the spring.





ATTN: STEVE

J. F. New Native Plant Nursery

128 Sunset Drive, Walkerton, IN 46574 · Phone: (574) 586-2412 · Fax: (574) 586-2718

Quote

Order Number	Quote Date	Salesperson	Shipping Method	Estimated Ship Date	Terms
RM-2005-0451	11/17/2005	Mark O'Brien	UPS Ground	11/29/2005	Net 30 Days

<b>Client Information</b> Name: JF New-RM Division Contact: <del>Brian Majka</del> Project Number: <b>STEVE RICE</b> Project Name: Land fill seed mix		<b>SHIP TO:</b> 11181 Marwill Avenue  West Olive, MI 49460-  <b>PHONE:</b> (616) 847-1680
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Stock Number	Scientific Name	Common Name	Quantity Ordered	Units	Extended Price	Line Total
CC-AGRALA-SP	Agrostis alba	Red top grass	64	oz.	\$0.40	\$25.60
PF-ASTLAE-SP	Aster laevis	Smooth blue aster	1.5	oz.	\$34.65	\$51.98
WF-ASTNOV-SP	Aster novae-angliae	New england aster	1.5	oz.	\$14.17	\$21.26
CC-AVESAT-SP	Avena sativa	Seed Oats	600	oz.	\$0.03	\$18.00
PF-CASFAS-SP	Cassia fasciculata	Partridge pea	16	oz.	\$3.82	\$61.12
PF-CORLAN-SP	Coreopsis lanceolata	Sand coreopsis	16	oz.	\$4.05	\$64.80
PG-ELYCAN-SP	Elymus canadensis	Canada wild rye	64	oz.	\$1.12	\$71.68
PF-LIAASP-SP	Liatris aspera	Rough blazing star	2	oz.	\$15.97	\$31.94
PF-LIAPYC-SP	Liatris pycnostachya	Prairie blazing star	2	oz.	\$16.20	\$32.40
CC-LOLMUL-SP	Lolium multiflorum	Annual rye	200	oz.	\$0.08	\$16.00
PF-MONFIS-SP	Monarda fistulosa	Wild bergamot	2	oz.	\$20.25	\$40.50
CC-PHLPRA-SP	Phleum pratense	Timothy	32	oz.	\$0.45	\$14.40
PF-RUDHIR-SP	Rudbeckia hirta	Black-eyed susan	24	oz.	\$3.37	\$80.68

<b>Notes:</b> This is quoted at 1 acre. The thought is that most of these are short lived perennials or shallow rooted. Liatris is a bulb plant with a limited root. Red top and timothy for stabilization. No guarantee's for landfills.	<b>Subtotal</b>	\$530.56
	<b>Sales Tax</b>	\$0.00
	<b>Shipping/Handling</b>	\$0.00
	<b>Amount Paid</b>	\$0.00
	<b>Amount Due</b>	\$530.56

This amount includes any discounts and credits <-----

This quote good until 12/18/2005

To convert this quote to an order, please sign and date below and mail or fax quote back. Your signature indicates your acceptance of our terms and agreements as published in our catalog or as may be revised from time to time. For a copy of our terms, please call.

Signature \_\_\_\_\_ Date \_\_\_\_\_





3917 Valley View Ln  
North Liberty, Iowa 52317  
Phone (319) 665-3517  
Fax (319) 665-8035  
www.ecolotree.com  
Email: info@ecolotree.com

## What To Do When You Get Your Trees

### 1. Check Your Order

Please look over the tree order and contact us immediately if you think anything may be unsatisfactory. All packages should be opened, inspected, and cared for within 12 hours of receipt.

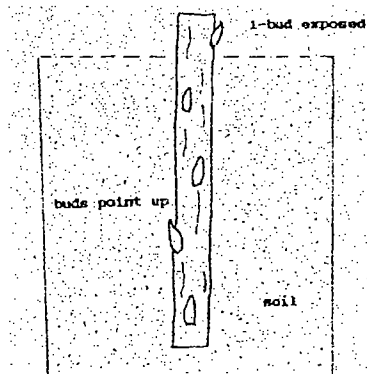
### 2. Pre-Planting Care

For best results, the trees should be planted within 1-2 days after receiving the shipment.

If this is not possible, place the trees in cold storage (36-45° F) until you are ready to plant them (should be within one week of receipt). If cold storage is not available, find somewhere that is cool, dark, and out of the wind, such as a shed or barn.

### 3. Planting

- a.) For bare-root trees, soak the tree roots for 2-5 hours. Place the trees out of direct wind and sunlight while soaking. Then take the trees to already prepared planting holes and plant at least 1/3 of the tree below ground. For example, if planting a 6-foot tree should plant at least 2 feet of it below ground.
- b.) For poles, soak the portion of the trees that will be planted below ground for 4-12 hours. Keep the poles out of direct wind and sunlight while soaking. Then take the trees to their desired planting locations and plant the trees, with at least 40% below ground. For example a 5-foot pole should be planted at least 2 feet below ground. Thoroughly water around the base of the trees.
- c.) For cuttings, soak them for 4-12 hours. Keep them out of direct wind and sunlight while soaking. The diagram to the right shows how to plant cuttings. Be sure to leave one bud showing and to have the buds pointed up. Thoroughly water around the base of the cuttings.





#### 4. Post-Planting Care

Once the cutting, pole, or bare-root tree has been planted, it is essential to continue to care for the tree throughout the rest of the first growing season and subsequent years. In particular, make sure the trees have sufficient water, either by rainfall or irrigation. The following links provide detailed information about tree care:

**Iowa State University Extension**

<http://www.extension.iastate.edu/Publications/PM1677.pdf>

**North Dakota State University**

<http://www.ext.nodak.edu/extpubs/plantsci/trees/h531w.htm>





Appendix C

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Wells

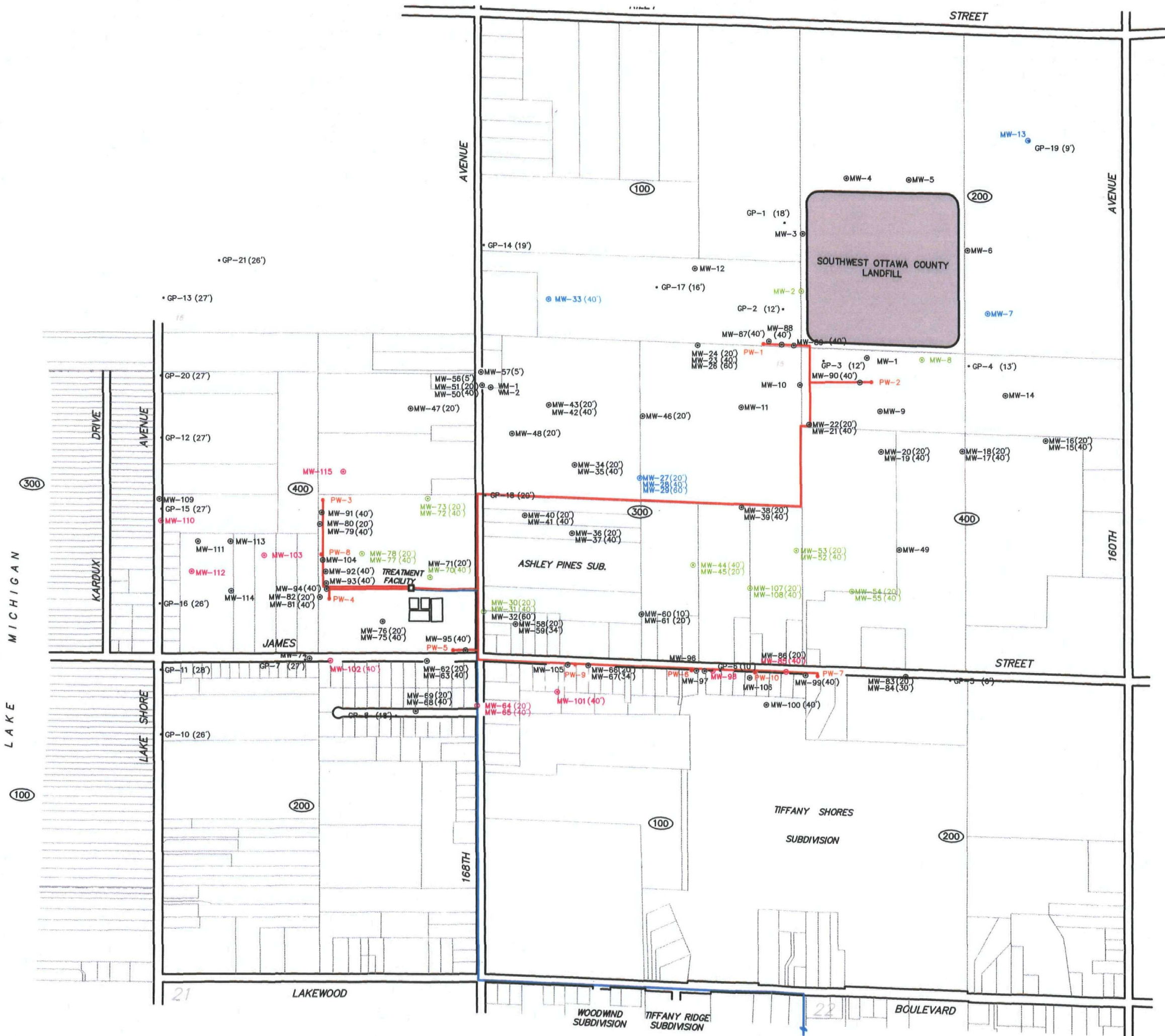




SCALE : 1" = 800'

### LEGEND

	MW (40')	MONITORING WELL
	PW	PURGE WELL
		PURGE WELL PIPING
		DISCHARGE PIPING
		CONE OF INFLUENCE WELLS
		UPGRADIENT & INTERMEDIATE WELLS
		PERIMETER WELLS (DOWNGRADIENT)



SOUTHWEST OTTAWA COUNTY LANDFILL  
OTTAWA COUNTY ROAD COMMISSION

### SITE PLAN FIGURE 1

PREIN & NEWHOF  
CONSULTING ENGINEERS  
GRAND RAPIDS, MICHIGAN  
79049

