

CONTRACT DOCUMENTS  
FOR

ANN ARBOR MAINTENANCE FACILITY  
MAINTENANCE/RESTORATION PLAN



Due: Monday, December 12, 2011

BID NO. 4192

Fleet and Facility Services Unit  
Public Services Area

CITY OF ANN ARBOR  
301 East Huron  
Ann Arbor, Michigan 48104

# TABLE OF CONTENTS

<u>Section</u>	<u>Pages</u>
Table of Contents .....	TC-1
Advertisement .....	AD-1
Human Rights Division Contract Compliance Forms .....	AAF-1 to 2
Notice of Pre-Bid Conference .....	NP-1
Instructions to Bidders .....	IB-1 to 2
Proposal.....	P-1 to 3
Bid Forms.....	BF-1 to 2
Contract.....	C-1 to 4
Bond Forms.....	B-1 to 2
General Conditions .....	GC-1 to 17
Standard Specifications.....	SS-1
Detailed Specifications .....	1 to 42
Plan Sheets .....	1 to 7

ADVERTISEMENT FOR  
ANN ARBOR MAINTENANCE FACILITY MAINTENANCE/RESTORATION PLAN  
FOR THE  
CITY OF ANN ARBOR, MICHIGAN

BID NO. 4192

Sealed Bids will be received by the Ann Arbor Procurement Office, Fifth Floor, City Hall, on or before 10:00 a.m, Monday, December 12 , 2011 for construction of the Ann Arbor Maintenance Facility Maintenance/Restoration Plan. Bids will be publicly opened and read aloud at this time.

Work to be done includes slope stabilization, removal of sediment from sediment basin, reconstruction of storm sewer outfalls, swale and channel construction and repair, rip-rap and hard armor installation, topsoil placement in existing wetland mitigation area, wetland planting and seeding, and all related work at the Ann Arbor Maintenance Facility, also known as Wheeler Service Center, 4251 Stone School Road, Ann Arbor, Michigan 48108. Bid documents may be obtained on or after November 18, 2011 from the Michigan Intergovernmental Trade Network (MITN) web site at [www.govbids.com](http://www.govbids.com) or the City of Ann Arbor Procurement Office web site at: <http://www.a2gov.org/government/financeadminservices/procurement/Pages/OpenBidsandProposals.aspx>.

Each proposal shall be accompanied by a certified check, or Bid Bond by a recognized surety, in the amount of 5% of the total of the bid price. A proposal, once submitted, becomes the property of the City. In the sole discretion of the City, the City reserves the right to allow a bidder to reclaim submitted documents provided the documents are requested and retrieved no later than 48 hours prior to the scheduled bid opening.

The successful Bidder will be required to furnish satisfactory performance and labor and material bonds in the amount of 100% of the bid price and satisfactory insurance coverage.

Precondition for entering into a contract with the City of Ann Arbor: (i) compliance with Chapter 112 of Title IX of the Code of the City of Ann Arbor, and (ii) compliance with applicable prevailing wage and living wage requirements of Chapter 23 of Title I of the Code of the City of Ann Arbor. Further information is outlined in the contract documents.

After the time of opening, no Bid may be withdrawn for a period of 45 days. The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

Any further information may be obtained from the Ann Arbor Procurement Office, (734) 794-6500 ext. 4-5206.

CITY OF ANN ARBOR, MICHIGAN

City of Ann Arbor

**LIVING WAGE ORDINANCE  
DECLARATION OF COMPLIANCE**

The Ann Arbor Living Wage Ordinance (Section 1:811-1:821 of Chapter 23 of Title I of the Code) requires that employers providing services to the City or recipients of grants for financial assistance (in amounts greater than \$10,000 in a twelve-month period of time) pay their employees who are working on the City project or grant, a minimum level of compensation known as the **Living Wage**. This wage must be paid to the employees for the length of the contract/project.

*Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from the Ordinance. If this exemption applies to your firm, please check below:*

- \_\_\_\_\_ This company is exempt due to the fact that we employ or contract with fewer than 5 individuals.
- \_\_\_\_\_ This non-profit agency is exempt due to the fact that we employ or contract with fewer than 10 employees.

The Ordinance requires that all contractors/vendors and/or grantees agree to the following terms:

- a) To pay each of its employees performing work on any covered contract or grant with the City, no less than the living wage, which is defined as \$11.83/hour when health care is provided, or no less than \$13.19/hour for those employers that do *not* provide health care. It is understood that the Living Wage will be adjusted each year on April 30, and covered employers will be required to pay the adjusted amount thereafter. The rates stated above include any adjustment for 2011.
- b) Please check the boxes below which apply to your workforce:
  - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage without health benefits Yes \_\_\_\_\_ No \_\_\_\_\_
  - OR**
  - Employees who are assigned to *any covered* City project or grant will be paid at or above the applicable living wage with health benefits Yes \_\_\_\_\_ No \_\_\_\_\_
- c) To post a notice approved by the City regarding the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- d) To provide the City payroll records or other documentation as requested; and,
- e) To permit access to work sites to City representatives for the purposes of monitoring compliance, investigating complaints or non-compliance.

The undersigned authorized representative hereby obligates the contractor/vendor or grantee to the above stated conditions under penalty of perjury and violation of the Ordinance.

\_\_\_\_\_  
Company Name

\_\_\_\_\_  
Address City State Zip

\_\_\_\_\_  
Signature of Authorized Representative

\_\_\_\_\_  
Phone (area code)

\_\_\_\_\_  
Type or Print Name and Title

\_\_\_\_\_  
Email address

\_\_\_\_\_  
Date signed

**Questions about this form? Please contact:**  
Procurement Office City of Ann Arbor  
Phone: 734/794-6576 Fax:734/994-1795

→ RATE EFFECTIVE MAY 1, 2011-ENDING APRIL 29, 2012←

## LIVING WAGE ORDINANCE – CITY OF ANN ARBOR

**\$11.83** per hour

if the employer provides health care benefits\*

**\$13.19** per hour

if the employer does **NOT** provide health care benefits\*

Employers providing services to or for the City of Ann Arbor or recipients of grants or financial assistance from the City of Ann Arbor for a value of more than \$10,000 in a twelve-month period of time ***must pay those employees performing work on a City of Ann Arbor contract or grant, the above living wage.***

## ENFORCEMENT

The City of Ann Arbor may recover back wages either administratively or through court action for the employees that have been underpaid in violation of the law. Persons denied payment of the living wage have the right to bring a civil action for damages in addition to any action taken by the City.

Violation of this Ordinance is punishable by fines of not more than \$500/violation plus costs, with each day being considered a separate violation. Additionally, the City of Ann Arbor has the right to modify, terminate, cancel or suspend a contract in the event of a violation of the Ordinance.

*\* Health Care benefits include those paid for by the employer or making an employer contribution toward the purchase of health care. The employee contribution must not exceed \$.50 an hour for an average work week; and the employer cost or contribution must equal no less than \$1/hr for the average work week.*

**The Law Requires Employers to Display This Poster Where Employees Can Readily See It.**

***For Additional Information or to File a Complaint  
Contact:***

**Dee Lumpkin, Procurement Assistant  
734/794-6576 or dlumpkin@a2gov.org**

**CITY OF ANN ARBOR HUMAN RIGHTS OFFICE  
CONTRACT COMPLIANCE FORM**

Form #1

*Entire Organization (Totals for All Locations where applicable)*

Name of Company/Organization \_\_\_\_\_ Date Form Completed \_\_\_\_\_

Name and Title of Person Completing this Form \_\_\_\_\_ Name of President \_\_\_\_\_

Address \_\_\_\_\_ County \_\_\_\_\_ Phone # \_\_\_\_\_  
 (Street address) (City) (State) (Zip) (Area Code)

Fax# \_\_\_\_\_ Email Address \_\_\_\_\_  
 (Area Code)

**EMPLOYMENT DATA**

**Number of Employees  
(Report employees in only one category)**

Job Categories	Number of Employees (Report employees in only one category)												TOTAL COLUMNS A-M
	Male						Female						
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
A	B	C	D	F	G	H	I	J	K	L	M		
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
<b>TOTAL</b>													
<b>PREVIOUS YEAR TOTAL</b>													

**CITY OF ANN ARBOR HUMAN RIGHTS OFFICE  
CONTRACT COMPLIANCE FORM**

Form #2

*Local Office (Only those employees that will do local or on-site work, if applicable)*

Name of Company/Organization \_\_\_\_\_ Date Form Completed \_\_\_\_\_

Name and Title of Person Completing this Form \_\_\_\_\_

Fax# \_\_\_\_\_ Email Address \_\_\_\_\_  
(Area Code)

**EMPLOYMENT DATA**

Job Categories	Number of Employees (Report employees in only one category)												TOTAL COLUMNS A-M
	Male						Female						
	White	Black or African American	Asian	Hispanic or Latino	Native Hawaiian or Other Pacific Islander	American Indian or Alaska Native	White	Black or African American	Asian	Hispanic or LatinO	Native Hawaiian or Other Pacific Islander	American Indian or Alaskan Native	
A	B	C	D	F	G	H	I	J	K	L	M		
Exec/Sr. Level Officials													
Supervisors													
Professionals													
Technicians													
Sales													
Admin. Support													
Craftspeople													
Operatives													
Service Workers													
Laborers/Helper													
Apprentices													
Other													
<b>TOTAL</b>													
<b>PREVIOUS YEAR TOTAL</b>													

## **NOTICE OF PRE-BID CONFERENCE**

A pre-bid conference for this project will be held on Tuesday, November 29, 2011 at 10:00 a.m. in the Wheeler Service Center, Conference Room B, 4251 Stone School Road, Ann Arbor, Michigan 48108.

Attendance at this conference is optional, but highly recommended. Administrative and technical questions regarding this project will be answered at this time. Questions may also be emailed to Lara Treemore-Spears at [ltreemore-spears@a2gov.org](mailto:ltreemore-spears@a2gov.org). The deadline for written questions is 4:00 p.m. Wednesday, December 7, 2011. If any questions arise whose answers constitute modifications to the bid documents, an addendum will be issued.

## INSTRUCTIONS TO BIDDERS

### General

Work to be done under this Contract is generally described through the detailed specifications and must be completed fully in accordance with the contract documents. All work to be done under this Contract is located in or near the City of Ann Arbor.

The City shall make available to all prospective Bidders, prior to receipt of the Bids, access to the area in which the work is to be performed. Advance notice should be given to the Administering Service Area/Unit in cases where access to the site must be arranged by the City.

Any proposal which does not conform fully with these instructions may be rejected.

### Proposals

Proposals must be submitted on the "Proposal Forms" and "Bid Forms" provided, with each blank properly filled in. **Sealed Bids that include a complete original bid document and one additional proposal section copy** must be received by the City of Ann Arbor Procurement Office, Fifth Floor, City Hall, Ann Arbor, Michigan, at the time stipulated in the Advertisement, promptly after which proposals will be publicly opened and read aloud. Each proposal must be enclosed in a sealed envelope, endorsed across one end:

### **BID #4192, Proposal for Ann Arbor Maintenance Facility Maintenance/Restoration Plan**

The City intends to award a Contract(s) to the lowest responsible Bidder(s). On multi-divisional contracts, separate divisions may be awarded to separate Bidders. The City may also utilize discounts offered in the Bid Forms, if any, to determine the lowest responsible Bidder on each division, and award multiple divisions to a single Bidder, so that the lowest total cost is achieved for the City. For unit price bids, the contract will be awarded based upon the lump sum and unit prices stated by the bidder for the work items specified in the bid documents, with consideration given to any alternates selected by the City. If the City determines that the unit price for any item is materially different for the work item bid than either other bidders or the general market, the City, in its sole discretion, in addition to any other right it may have, may reject the bid as not responsible or non-conforming.

The acceptability of major subcontractors will be considered in determining if a Bidder is responsible. In comparing proposals, the City will give consideration to alternate proposals for items listed in the forms, or other alternates which the Bidder may wish to submit, but preference will be given to Base Bid Proposals.

The City reserves the right to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

## Bid Security

Each proposal must be accompanied by a certified check, or Bid Bond by a surety licensed and authorized to do business within the State of Michigan, in the amount of 5% of the total of the bid price.

## Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of days specified in the Advertisement.

## Contract Time

Time is of the essence in the performance of the work under this Contract. The available time for work under this Contract is indicated on page C-1, Article III of the Contract. If these time requirements can not be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

## Liquidated Damages

A liquidated damages clause, as given on page C-2, Article III of the Contract, provides that the Contractor shall pay the City as liquidated damages, and not as a penalty, a sum certain per day for each and every day that the Contractor may be in default of completion of the specified work, within the time(s) stated in the Contract, or written extensions.

Liquidated damages clauses, as given in the General Conditions, provide further that the City shall be entitled to impose and recover liquidated damages for breach of the obligations under Chapter 112 of the City Code.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

## Human Rights Information

Section 5, beginning at page GC-3, outlines the requirements for fair employment practices under City of Ann Arbor Contracts. To establish compliance with this Ordinance, the Bidder must complete and return with its bid completed copies of the two pages of Human Rights Division Contract Compliance Forms (copy attached) or an acceptable equivalent.

## Wage Requirements

Section 4, beginning at page GC-1, outlines the requirements for payment of prevailing wages or of a “living wage” to employees providing service to the City under this contract. The successful bidder must comply with all applicable requirements and provide documentary proof of compliance when requested.

### Major Subcontractors

The Bidder shall identify each major subcontractor it expects to engage for this Contract if the work to be subcontracted is 15% or more of the bid sum or over \$50,000, whichever is less. The Bidder also shall identify the work to be subcontracted to each major subcontractor.

## PROPOSAL

City of Ann Arbor  
Guy C. Larcom Municipal Building  
Ann Arbor, Michigan 48107

Ladies and Gentlemen:

The undersigned, as Bidder, declares that this Bid is made in good faith, without fraud or collusion with any person or persons bidding on the same Contract; that this Bidder has carefully read and examined the bid documents, including Advertisement, Human Rights Division Contract Compliance Forms, Notice of Pre-Bid Conference, Instructions to Bidders, Proposal, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

The Bidder acknowledges that it has not received or relied upon any representations or warrants of any nature whatsoever from the City of Ann Arbor, its agents or employees, and that this Bid is based solely upon the Bidder's own independent business judgment.

The undersigned proposes to perform all work shown on the plans or described in the bid documents, including any addenda issued, and to furnish all necessary machinery, tools, apparatus, and other means of construction to do all the work, furnish all the materials, and complete the work in strict accordance with all terms of the Contract of which this proposal is one part.

In accordance with these bid documents, and Addenda numbered \_\_\_\_\_, the undersigned, as Bidder, proposes to perform at the sites in and/or around Ann Arbor, Michigan, all the work included herein for the amounts set forth in the Bid Forms.

The Bidder declares that it has become fully familiar with the liquidated damage clauses for completion times and for compliance with City Code Chapter 112, understands and agrees that the liquidated damages are for the non-quantifiable aspects of non-compliance and do not cover actual damages that may be shown and agrees that if awarded the Contract, all liquidated damage clauses form part of the Contract.

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:319 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder encloses a certified check or Bid Bond in the amount of 5% of the total of the Bid Price. The Bidder agrees both to contract for the work and to furnish the necessary Bonds and insurance documentation within 10 days after being notified of the acceptance of the Bid.

If this Bid is accepted by the City and the Bidder fails to contract and furnish the required Bonds and insurance documentation within 10 days after being notified of the acceptance of this Bid, then the Bidder shall be considered to have abandoned the Contract and the certified check or Bid Bond accompanying this Proposal shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Proposal, or if this Proposal is rejected, then the accompanying check or Bid Bond shall be returned to the Bidder.

In submitting this Bid, it is understood that the right is reserved by the City to accept any Bid, to reject any or all Bids, to waive irregularities and/or informalities in any Bid, and to make the award in any manner the City believes to be in its best interest.

SIGNED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 201\_\_.

\_\_\_\_\_  
Bidder's/Contractor Name

\_\_\_\_\_  
Official Address

.....  
Authorized Signature of Bidder

\_\_\_\_\_  
Telephone Number

.....  
(Print Name of Signer Above)

## LEGAL STATUS OF BIDDER

(The Bidder shall fill out the appropriate form and strike out the other two.)

Bidder declares that it is:

\* A corporation organized and doing business under the laws of the state of \_\_\_\_\_, for whom \_\_\_\_\_, bearing the office title of \_\_\_\_\_, whose signature is affixed to this proposal, is authorized to execute contracts.

\* A partnership, list all members and the street and mailing address of each:

Also identify the County and State where partnership papers are filed:

County of \_\_\_\_\_, State of \_\_\_\_\_

\* An individual, whose signature with address, is affixed to this proposal:  
(initial here)

BID FORM  
ANN ARBOR MAINTENANCE FACILITY MAINTENANCE/RESTORATION PLAN  
BID #4192

Section 1 - Schedule of Prices

<u>Item Description</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
1. Remove portions of concrete fence foundations and dispose of off-site.	LS		\$ _____
2. Construct, clean out and stabilize new and existing Type 1 and Type 2 drainage swales.	LS		\$ _____
3. Supply and install two (2) 12" CL-IV RCP and one (1) 8" CL-IV RCP culverts with end sections and rip rap aprons, and connect to existing storm structure as shown on plans.	LS		\$ _____
4. Reinstall 36" end section with concrete footing per MDOT detail R-86-D	2 EA	\$ _____	\$ _____
5. All grading as shown on plans, including but not limited to excavation of portion of sediment basin approximately 674 cubic yards, channel grade restoration, slope restoration, channel bank restoration, and removal of wetland mitigation area sediment, with removal and legal disposal of any excess sediment and soil.	LS		\$ _____
6. Supply and install permanent turf reinforcing mat as shown in the plans and specifications.	1,349 SY	\$ _____	\$ _____
7. Supply and install hard armor as shown in the plans and specifications.	370 SY	\$ _____	\$ _____
8. Construct temporary access routes, including supply and installation of any materials used in construction of those access routes, such as non-woven filter fabric and rock, removal of those materials within the wetland mitigation area, and restoration of the access route area.	LS		\$ _____
9. Supply and install topsoil mounds as shown in the plans and specifications, approximately 3,408 cubic yards in place.	LS	\$ _____	\$ _____

BID FORM  
ANN ARBOR MAINTENANCE FACILITY MAINTENANCE/RESTORATION PLAN  
BID #4192

Section 1 - Schedule of Prices

10. Supply and install bare-root trees with a dense, fibrous, air-pruned root system, 4 foot height and ½-inch caliper, as shown in the plans and specifications.	250 EA	\$ _____	\$ _____
11. Supply and install shrubs, 2 gallon container size, as shown in the plans and specifications.	58 EA	\$ _____	\$ _____
12. Stabilize all disturbed areas with specified seed mixes, including two (2) year maintenance period, and including heavy natural jute net temporary erosion control blanket as shown on plans and on any disturbed area with a slope steeper than 4:1.	LS		\$ _____
13. Mobilization and General Conditions, bonds, including SESC permit, performing required soil erosion control measures, and all restoration to same or better quality.	LS		\$ _____
<b>TOTAL BASE BID</b>			\$ _____

## BID FORM

### Section 2 - Material and Equipment Alternates

The Base Bid proposal price shall include materials and equipment selected from the designated items and manufacturers listed in the bidding documents. This is done to establish uniformity in bidding and to establish standards of quality for the items named.

If the Contractor wishes to quote alternate items for consideration by the City, it may do so under this Section. A complete description of the item and the proposed price differential must be provided. Unless approved at the time of award, substitutions where items are specifically named will be considered only as a negotiated change in Contract Sum.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
--------------------	--------------------	--------------------------

If the Bidder does not suggest any material or equipment alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any material or equipment alternate under the contract.

---

Signature of Authorized Representative of Bidder

BF-6

## BID FORM

### Section 3 - Time Alternate

If the Bidder takes exception to the time stipulated in Article III of the Contract, Time of Completion, page C-1, it is requested to stipulate below its proposed time for performance of the work. Consideration will be given to time in evaluating bids.

If the Bidder does not suggest any time alternate, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT propose any time alternate under the contract.

---

Signature of Authorized Representative of Bidder

BF-7

## BID FORM

### Section 4 - Subcontractors

For purposes of this contract, a Subcontractor is anyone (other than the Contractor) who performs work (other than or in addition to the furnishing of materials, plans or equipment) at or about the construction site, directly or indirectly for or on behalf of the Contractor (and whether or not in privity of contract with the Contractor), but shall not include any individual who furnishes merely the individual's own personal labor or services.

For the work outlined in these documents the Bidder expects to engage the following subcontractors to perform the work identified:

<u>Subcontractor (Name and Address)</u>	<u>Work</u>	<u>Amount</u>
---	-------------	---------------

If the Bidder does not expect to engage any major subcontractor, the Bidder **MUST** complete the following statement:

For the work outlined in this request for bid, the bidder does NOT expect to engage any major subcontractor to perform work under the contract.

---

Signature of Authorized Representative of Bidder

## CONTRACT

THIS AGREEMENT is made on the \_\_\_\_\_ day of \_\_\_\_\_, 200\_, between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 E. Huron, Ann Arbor, Michigan 48104 (ACity@) and \_\_\_\_\_ (AContractor@)

\_\_\_\_\_  
(An individual/partnership/corporation, include state of incorporation)

\_\_\_\_\_  
(Address)

Based upon the mutual promises below, the Contractor and the City agree as follows:

### ARTICLE I - Scope of Work

The Contractor agrees to furnish all of the materials, equipment and labor necessary; and to abide by all the duties and responsibilities applicable to it for the project titled "ANN ARBOR MAINTENANCE FACILITY MAINTENANCE/RESTORATION PLAN" in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

Human Rights Division Contract

Compliance Forms

Living Wage Declaration of

Compliance Forms

(if applicable)

Bid Forms

Proposal

Contract and Exhibits

Bonds

General Conditions

Standard Specifications

Detailed Specifications

Plans

Addenda

### ARTICLE II - Definitions

Administering Service Area/Unit means Public Services Area, Fleet and Facility Services Unit.

Supervising Professional means Sue McCormick or other persons acting under the authorization of the Administrator/Manager of the Administering Service Area/Unit.

Project means Ann Arbor Maintenance Facility Maintenance/Restoration Plan Bid No. 4192.

### ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately after the Contractor's receipt of a fully executed Contract.
- (B) The entire work for this Contract shall be completed within the time schedule specified on the plans. Shorter completion times for certain portions of the work are specified in the Detailed Specifications.

- (C) Failure to complete all the work within the time specified above, including any extension granted in writing by the Supervising Professional, shall obligate the Contractor to pay the City, as liquidated damages and not as a penalty, an amount equal to \$100.00 for each calendar day of delay in the completion of all the work. If any liquidated damages are unpaid by the Contractor, the City shall be entitled to deduct these unpaid liquidated damages from the monies due the Contractor.

As an independent requirement, where the Detailed Specifications identify certain portions of the work to be completed within a shorter period of time and the Contractor fails to complete each portion within the shorter period specified for each portion, including any extension granted in writing by the Project Supervisor, the City is entitled to deduct from the monies due the Contractor, as liquidated damages and not as a penalty, the amount identified in the Detailed Specifications for each portion of the work not timely completed for each calendar day of delay in completion of each portion of the work.

The liquidated damages are for the non-quantifiable aspects of any of the previously identified events and do not cover actual damages that can be shown or quantified nor are they intended to preclude recovery of actual damages in addition to the recovery of liquidated damages.

Liquidated damages under this section are in addition to any liquidated damages due under Section 5 of the General Conditions.

#### ARTICLE IV - The Contract Sum

- (A) The City shall pay to the Contractor for the performance of the Contract, the unit prices as given in the Bid Forms for the estimated total of:

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

- (B) The amount paid shall be equitably adjusted to cover changes in the work ordered by the Supervising Professional but not required by the contract documents.

#### ARTICLE V - Assignment

This Contract may not be assigned or subcontracted without the written consent of the City.

#### ARTICLE VI - Choice of Law

This Contract shall be construed, governed, and enforced in accordance with the laws of the State of Michigan. By executing this agreement, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract.

Whenever possible, each provision of the contract will be interpreted in a manner as to be effective and valid under applicable law. The prohibition or invalidity, under applicable law, of any provision will not invalidate the remainder of the contract.

## ARTICLE VII - Relationship of the Parties

The parties of the Contract agree that it is not a contract of employment but is a contract to accomplish a specific result. Contractor is an independent contractor performing services for the City. Nothing contained in this Contract shall be deemed to constitute any other relationship between the City and the Contractor.

Contractor certifies that it has no personal or financial interest in the project other than the compensation it is to receive under the Contract. Contractor certifies that it is not, and shall not become, overdue or in default to the City for any contract, debt, or any other obligation to the City including real or personal property taxes. City shall have the right to set off any such debt against compensation awarded for services under this agreement.

## ARTICLE VIII - Notice

All notices given under this contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the contract documents or other address the Contractor may specify in writing..

## ARTICLE IX - Indemnification

To the fullest extent permitted by law, for any loss not covered by insurance under this contract, Contractor shall indemnify, defend and hold harmless the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this contract, by the Contractor or anyone acting on the Contractor's behalf under this contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence.

## ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations or agreements whether written or oral. Neither party has relied on any prior representations in entering into this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

**FOR CONTRACTOR**

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

Its: \_\_\_\_\_

**FOR THE CITY OF ANN ARBOR**

By \_\_\_\_\_  
John Hieftje, Mayor

By \_\_\_\_\_  
Jacqueline Beaudry, City Clerk

**Approved as to substance**

By \_\_\_\_\_  
Steve Powers, City Administrator

By \_\_\_\_\_  
Sue McCormick,  
Public Services Area Administrator

**Approved as to form and content**

\_\_\_\_\_  
Stephen K. Postema, City Attorney

PERFORMANCE BOND

(1) \_\_\_\_\_ of \_\_\_\_\_ (referred to as "Principal"), and \_\_\_\_\_, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for \$ \_\_\_\_\_, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.

(2) The Principal has entered a written contract with the City dated \_\_\_\_\_, for: \_\_\_\_\_ and this bond is given for that contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.

(3) Whenever the Principal is declared by the City to be in default under the contract, the Surety may promptly remedy the default or shall promptly:

- (a) complete the contract in accordance with its terms and conditions; or
- (b) obtain a bid or bids for submission to the City for completing the contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.

(4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the contract.

(5) Surety agrees that no change, extension of time, alteration or addition to the terms of the contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the contract or to the work, or to the specifications.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_.

(Name of Surety Company)

(Name of Principal)

By

(Signature)

By

(Signature)

Its

(Title of Office)

Its

(Title of Office)

Name and address of agent:

Approved as to form:

Stephen K. Postema, City Attorney

LABOR AND MATERIAL BOND

- (1) \_\_\_\_\_ of  
\_\_\_\_\_, (referred to as "Principal"), and  
\_\_\_\_\_, a corporation duly authorized to do business in the State of  
Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"),  
for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended,  
being MCL 129.201 et seq., in the amount of  
\$ \_\_\_\_\_, for the payment of which Principal and Surety bind themselves, their heirs, executors,  
administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written contract with the City, dated \_\_\_\_\_, for  
\_\_\_\_\_; and this bond is given for that contract in  
compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under  
the contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation  
if the Principal promptly and fully pays the claimants.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 200\_\_.

(Name of Surety Company)

(Name of Principal)

By  
(Signature)

By  
(Signature)

Its  
(Title of Office)

Its  
(Title of Office)

Approved as to form:

Name and address of agent:

Stephen K. Postema, City Attorney

## **GENERAL CONDITIONS**

### **Section 1 - Execution, Correlation and Intent of Documents**

The contract documents shall be signed in 2 copies by the City and the Contractor.

The contract documents are complementary and what is called for by any one shall be binding. The intention of the documents is to include all labor and materials, equipment and transportation necessary for the proper execution of the work. Materials or work described in words which so applied have a well-known technical or trade meaning have the meaning of those recognized standards.

In case of a conflict among the contract documents listed below in any requirement(s), the requirement(s) of the document listed first shall prevail over any conflicting requirement(s) of a document listed later.

(1) Addenda in reverse chronological order; (2) Detailed Specifications; (3) Standard Specifications; (4) Plans; (5) General Conditions; (6) Contract; (7) Bid Forms; (8) Bond Forms; (9) Proposal.

### **Section 2 - Order of Completion**

The Contractor shall submit with each invoice, and at other times reasonably requested by the Supervising Professional, schedules showing the order in which the Contractor proposes to carry on the work. They shall include the dates at which the Contractor will start the several parts of the work, the estimated dates of completion of the several parts, and important milestones within the several parts.

### **Section 3 - Familiarity with Work**

The Bidder or its representative shall make personal investigations of the site of the work and of existing structures and shall determine to its own satisfaction the conditions to be encountered, the nature of the ground, the difficulties involved, and all other factors affecting the work proposed under this Contract. The Bidder to whom this Contract is awarded will not be entitled to any additional compensation unless conditions are clearly different from those which could reasonably have been anticipated by a person making diligent and thorough investigation of the site.

The Bidder shall immediately notify the City upon discovery, and in every case prior to submitting its Bid, of every error or omission in the bidding documents that would be identified by a reasonably competent, diligent Bidder. In no case will a Bidder be allowed the benefit of extra compensation or time to complete the work under this Contract for extra expenses or time spent as a result of the error or omission.

## Section 4 - Wage Requirements

Under this Contract, the Contractor shall conform to Chapter 14 of Title I of the Code of the City of Ann Arbor as amended; which in part states "...that all craftsmen, mechanics and laborers employed directly on the site in connection with said improvements, including said employees of subcontractors, shall receive the prevailing wage for the corresponding classes of craftsmen, mechanics and laborers, as determined by statistics for the Ann Arbor area compiled by the United States Department of Labor. At the request of the City, any contractor or subcontractor shall provide satisfactory proof of compliance with the contract provisions required by the Section."

Where the Contract and the Ann Arbor City Ordinance are silent as to definitions of terms required in determining contract compliance with regard to prevailing wages, the definitions provided in the Davis-Bacon Act as amended (40 U.S.C. 278-a to 276-a-7) for the terms shall be used.

Further, to the extent that any employees of the Contractor providing services under this contract are not part of the class of craftsmen, mechanics and laborers who receive a prevailing wage in conformance with Section 1:319 of Chapter 14 of Title I of the Code of the City of Ann Arbor, the Contractor agrees to conform to Chapter 23 of Title I of the Code of the City of Ann Arbor, as amended, which in part states:

### **1:814. Applicability.**

- (1) This Chapter shall apply to any person that is a contractor/vendor or grantee as defined in Section 1:813 that employs or contracts with five (5) or more individuals; provided, however, that this Chapter shall not apply to a non-profit contractor/vendor or non-profit grantee unless it employs or contracts with ten (10) or more individuals.
- (2) This Chapter shall apply to any grant, contract, or subcontract or other form of financial assistance awarded to or entered into with a contractor/vendor or grantee after the effective date of this Chapter and to the extension or renewal after the effective date of this Chapter of any grant, contract, or subcontract or other form of financial assistance with a contractor/vendor or grantee.

### **1:815. Living Wages Required.**

- (1) Every contractor/vendor or grantee, as defined in Section 1:813, shall pay its covered employees a living wage as established in this Section.
  - (a) For a covered employer that provides employee health care to its employees, the living wage shall be \$11.83 an hour, or the adjusted amount hereafter established under Section 1:815(3).
  - (b) For a covered employer that does not provide health care to its employees, the living wage shall be \$13.19 a hour, or the adjusted amount hereafter established under Section 1:815(3).
- (2) In order to qualify to pay the living wage rate for covered employers providing employee health care under subsection 1:815(1)(a), a covered employer shall furnish proof of said health care coverage and payment therefor to the City Administrator or

his/her designee.

- (3) The amount of the living wage established in this Section shall be adjusted upward no later than April 30, 2012, and every year thereafter by a percentage equal to the percentage increase, if any, in the federal poverty guidelines as published by the United States Department of Health and Human Services for the years 2001 and 2002. Subsequent annual adjustments shall be based upon the percentage increase, if any, in the United States Department of Health and Human Services poverty guidelines when comparing the prior calendar year's poverty guidelines to the present calendar year's guidelines. The applicable percentage amount will be converted to an amount in cents by multiplying the existing wage under Section 1.815(1)(b) by said percentage, rounding upward to the next cent, and adding this amount of cents to the existing living wage levels established under Sections 1:815(1)(a) and 1:815(1)(b). Prior to April 1 of each calendar year, the City will notify any covered employer of this adjustment by posting a written notice in a prominent place in City Hall, and, in the case of a covered employer that has provided an address of record to the City, by a written letter to each such covered employer.

#### Section 5 - Non-Discrimination

The Contractor agrees to comply with the nondiscrimination provisions of Chapter 112 of the Ann Arbor City Code and to take affirmative action to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate any inequality based upon race, national origin or sex. The Contractor agrees to comply with the provisions of Section 9:161 of Chapter 112 of the Ann Arbor City Code and in particular the following excerpts:

##### 9:161 NONDISCRIMINATION BY CITY CONTRACTORS

- (1) All contractors proposing to do business with the City of Ann Arbor shall satisfy the nondiscrimination administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All contractors shall receive approval from the Director prior to entering into a contract with the City, unless specifically exempted by administrative policy. All City contractors shall take affirmative action to insure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity and tends to eliminate inequality based upon race, national origin or sex.
- (2) Each prospective contractor shall submit to the City data showing current total employment by occupational category, sex and minority group. If, after verifying this data, the Director concludes that it indicates total minority and female employment commensurate with their availability within the contractor's labor recruitment area, i.e., the area from which the contractor can reasonably be expected to recruit, said contractor shall be accepted by the Director as having fulfilled affirmative action requirements for a period of one year at which time the Director shall conduct another review. Other contractors shall develop an affirmative action program in conjunction with the Director. Said program shall include specific goals and timetables for the hiring and promotion of minorities and females. Said goals shall reflect the availability of minorities and females within the contractor's labor recruitment area. In the case of construction contractors, the Director shall use for

employment verification the labor recruitment area of the Ann Arbor-Ypsilanti standard metropolitan statistical area. Construction contractors determined to be in compliance shall be accepted by the Director as having fulfilled affirmative action requirements for a period of six (6) months at which time the Director shall conduct another review.

- (3) In hiring for construction projects, contractors shall make good faith efforts to employ local persons, so as to enhance the local economy.
- (4) All contracts shall include provisions through which the contractor agrees, in addition to any other applicable Federal or State labor laws:
  - (a) To set goals, in conference with the Human Resources Director, for each job category or division of the work force used in the completion of the City work;
  - (b) To provide periodic reports concerning the progress the contractor has made in meeting the affirmative action goals it has agreed to;
  - (c) To permit the Director access to all books, records and accounts pertaining to its employment practices for the purpose of determining compliance with the affirmative action requirements.
- (5) The Director shall monitor the compliance of each contractor with the nondiscrimination provisions of each contract. The Director shall develop procedures and regulations consistent with the administrative policy adopted by the City Administrator for notice and enforcement of non-compliance. Such procedures and regulations shall include a provision for the posting of contractors not in compliance.
- (6) All City contracts shall provide further that breach of the obligation not to discriminate shall be a material breach of the contract for which the City shall be entitled, at its option, to do any or all of the following:
  - (a) To cancel, terminate, or suspend the contract in whole or part and/or refuse to make any required periodic payments under the contract;
  - (b) Declare the contractor ineligible for the award of any future contracts with the City for a specified length of time;
  - (c) To recover liquidated damages of a specified sum, said sum to be that percentage of the labor expenditure for the time period involved which would have accrued to minority group members had the affirmative action not been breached;

(d) Impose for each day of non-compliance, liquidated damages of a specified sum, based upon the following schedule:

<u>Contract Amount</u>	<u>Assessed Damages Per Day of Non-Compliance</u>
\$ 10,000 - 24,999	\$ 25.00
25,000 - 99,999	50.00
100,000 - 199,999	100.00
200,000 - 499,999	150.00
500,000 - 1,499,999	200.00
1,500,000 - 2,999,999	250.00
3,000,000 - 4,999,999	300.00
5,000,000 - and above	500.00

(e) In addition the contractor shall be liable for any costs or expenses incurred by the City of Ann Arbor in obtaining from other sources the work and services to be rendered or performed or the goods or properties to be furnished or delivered to the City under this contract.

#### Section 6 - Materials, Appliances, Employees

Unless otherwise stipulated, the Contractor shall provide and pay for all materials, labor, water, tools, equipment, light, power, transportation, and other facilities necessary or used for the execution and completion of the work. Unless otherwise specified, all materials incorporated in the permanent work shall be new, and both workmanship and materials shall be of the highest quality. The Contractor shall, if required, furnish satisfactory evidence as to the kind and quality of materials.

The Contractor shall at all times enforce strict discipline and good order among its employees, and shall seek to avoid employing on the work any unfit person or anyone not skilled in the work assigned.

Adequate sanitary facilities shall be provided by the Contractor.

#### Section 7 - Qualifications for Employment

The Contractor shall employ competent laborers and mechanics for the work under this Contract. For work performed under this Contract, employment preference shall be given to qualified local residents.

## Section 8 - Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringements of any patent rights and shall hold the City harmless from loss on account of infringement except that the City shall be responsible for all infringement loss when a particular process or the product of a particular manufacturer or manufacturers is specified, unless the City has notified the Contractor prior to the signing of the Contract that the particular process or product is patented or is believed to be patented.

## Section 9 - Permits and Regulations

The Contractor must secure and pay for all permits, permit or plan review fees and licenses necessary for the prosecution of the work. These include but are not limited to City building permits, right-of-way permits, lane closure permits, right-of-way occupancy permits, and the like. The City shall secure and pay for easements shown on the plans unless otherwise specified.

The Contractor shall give all notices and comply with all laws, ordinances, rules and regulations bearing on the conduct of the work as drawn and specified. If the Contractor observes that the contract documents are at variance with those requirements, it shall promptly notify the Supervising Professional in writing, and any necessary changes shall be adjusted as provided in the Contract for changes in the work.

## Section 10 - Protection of the Public and of Work and Property

The Contractor is responsible for the means, methods, sequences, techniques and procedures of construction and safety programs associated with the work contemplated by this contract. The Contractor, its agents or sub-contractors, shall comply with the "General Rules and Regulations for the Construction Industry" as published by the Construction Safety Commission of the State of Michigan and to all other local, State and National laws, ordinances, rules and regulations pertaining to safety of persons and property.

The Contractor shall take all necessary and reasonable precautions to protect the safety of the public. It shall continuously maintain adequate protection of all work from damage, and shall take all necessary and reasonable precautions to adequately protect all public and private property from injury or loss arising in connection with this Contract. It shall make good any damage, injury or loss to it's work and to public and private property resulting from lack of reasonable protective precautions, except as may be due to errors in the contract documents, or caused by agents or employees of the City. The Contractor shall obtain and maintain sufficient insurance to cover damage to any City property at the site by any cause.

In an emergency affecting the safety of life, or the work, or of adjoining property, the Contractor is, without special instructions or authorization from the Supervising Professional, permitted to act at its discretion to prevent the threatened loss or injury. It shall also so act, without appeal, if authorized or instructed by the Supervising Professional.

Any compensation claimed by the Contractor for emergency work shall be determined by agreement or in accordance with the terms of Claims for Extra Cost - Section 15.

## Section 11 - Inspection of Work

The City shall provide sufficient competent personnel for the inspection of the work.

The Supervising Professional shall at all times have access to the work whenever it is in preparation or progress, and the Contractor shall provide proper facilities for access and for inspection.

If the specifications, the Supervising Professional's instructions, laws, ordinances, or any public authority require any work to be specially tested or approved, the Contractor shall give the Supervising Professional timely notice of its readiness for inspection, and if the inspection is by an authority other than the Supervising Professional, of the date fixed for the inspection. Inspections by the Supervising Professional shall be made promptly, and where practicable at the source of supply. If any work should be covered up without approval or consent of the Supervising Professional, it must, if required by the Supervising Professional, be uncovered for examination and properly restored at the Contractor's expense.

Re-examination of any work may be ordered by the Supervising Professional, and, if so ordered, the work must be uncovered by the Contractor. If the work is found to be in accordance with the contract documents, the City shall pay the cost of re-examination and replacement. If the work is not in accordance with the contract documents, the Contractor shall pay the cost.

## Section 12 - Superintendence

The Contractor shall keep on the work site, during its progress, a competent superintendent and any necessary assistants, all satisfactory to the Supervising Professional. The superintendent will be responsible to perform all on-site project management for the Contractor. The superintendent shall be experienced in the work required for this Contract. The superintendent shall represent the Contractor and all direction given to the superintendent shall be binding as if given to the Contractor. Important directions shall immediately be confirmed in writing to the Contractor. Other directions will be confirmed on written request. The Contractor shall give efficient superintendence to the work, using its best skill and attention.

## Section 13 - Changes in the Work

The City may make changes to the quantities of work within the general scope of the Contract at any time by a written order and without notice to the sureties. If the changes add to or deduct from the extent of the work, the Contract Sum shall be adjusted accordingly. All the changes shall be executed under the conditions of the original Contract except that any claim for extension of time caused by the change shall be adjusted at the time of ordering the change.

In giving instructions, the Supervising Professional shall have authority to make minor changes in the work not involving extra cost and not inconsistent with the purposes of the work, but otherwise, except in an emergency endangering life or property, no extra work or change shall be made unless in pursuance of a written order by the Supervising Professional, and no claim for an addition to the Contract Sum shall be valid unless the additional work was ordered in writing.

The Contractor shall proceed with the work as changed and the value of the work shall be determined as provided in Claims for Extra Cost - Section 15.

## Section 14 - Extension of Time

Extension of time stipulated in the Contract for completion of the work will be made if and as the Supervising Professional may deem proper under any of the following circumstances:

- (1) When work under an extra work order is added to the work under this Contract;
- (2) When the work is suspended as provided in Section 20;
- (3) When the work of the Contractor is delayed on account of conditions which could not have been foreseen, or which were beyond the control of the Contractor, and which were not the result of its fault or negligence;
- (4) Delays in the progress of the work caused by any act or neglect of the City or of its employees or by other Contractors employed by the City;
- (5) Delay due to an act of Government;
- (6) Delay by the Supervising Professional in the furnishing of plans and necessary information;
- (7) Other cause which in the opinion of the Supervising Professional entitles the Contractor to an extension of time.

The Contractor shall notify the Supervising Professional within 7 days of an occurrence or conditions which, in the Contractor's opinion, entitle it to an extension of time. The notice shall be in writing and submitted in ample time to permit full investigation and evaluation of the Contractor's claim. The Supervising Professional shall acknowledge receipt of the Contractor's notice within 7 days of its receipt. Failure to timely provide the written notice shall constitute a waiver by the Contractor of any claim.

In situations where an extension of time in contract completion is appropriate under this or any other section of the contract, the Contractor understands and agrees that the only available adjustment for events that cause any delays in contract completion shall be extension of the required time for contract completion and that there shall be no adjustments in the money due the Contractor on account of the delay.

## Section 15 - Claims for Extra Cost

If the Contractor claims that any instructions by drawings or other media issued after the date of the Contract involved extra cost under this Contract, it shall give the Supervising Professional written notice within 7 days after the receipt of the instructions, and in any event before proceeding to execute the work, except in emergency endangering life or property. The procedure shall then be as provided for Changes in the Work-Section 13. No claim shall be valid unless so made.

If the Supervising Professional orders, in writing, the performance of any work not covered by the contract documents, and for which no item of work is provided in the Contract, and for which no unit price or lump sum basis can be agreed upon, then the extra work shall be done on a Cost-Plus-Percentage basis of payment as follows:

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's supervision and contractual responsibility;
- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

No additional compensation will be provided for additional equipment, materials, personnel, overtime or special charges required to perform the work within the time requirements of the Contract.

When extra work is required and no suitable price for machinery and equipment can be determined in accordance with this Section, the hourly rate paid shall be 1/40 of the basic weekly rate listed in the Rental Rate Blue Book published by Dataquest Incorporated and applicable to the time period the equipment was first used for the extra work. The hourly rate will be deemed to include all costs of operation such as bucket or blade, fuel, maintenance, "regional factors", insurance, taxes, and the like, but not the costs of the operator.

#### Section 16 - Progress Payments

The Contractor shall submit each month, or at longer intervals, if it so desires, an invoice covering work performed for which it believes payment, under the Contract terms, is due. The submission shall be to the City's Finance Department - Accounting Division. The Supervising Professional will, within 10 days following submission of the invoice, prepare a certificate for payment for the work in an amount to be determined by the Supervising Professional as fairly representing the acceptable work performed during the period covered by the Contractor's invoice. To insure the proper performance of this Contract, the City will retain a percentage of the estimate in accordance with Act 524, Public Acts of 1980. The City will then, following the receipt of the Supervising Professional's Certificate, make payment to the Contractor as soon as feasible, which is anticipated will be within 15 days.

An allowance may be made in progress payments if substantial quantities of permanent material have been delivered to the site but not incorporated in the completed work if the Contractor, in the opinion of the Supervising Professional, is diligently pursuing the work under this Contract. Such materials shall be properly stored and adequately protected. Allowance in the estimate shall be at the invoice price value of the items. Notwithstanding any payment of any allowance, all risk of loss due to vandalism or any damages to the stored materials remains with the Contractor.

In the case of Contracts which include only the Furnishing and Delivering of Equipment, the payments shall be; 60% of the Contract Sum upon the delivery of all equipment to be furnished, or in the case of delivery of a usable portion of the equipment in advance of the total equipment delivery, 60% of the estimated value of the portion of the equipment may be paid upon its delivery in advance of the time of the remainder of the equipment to be furnished; 30% of the Contract Sum upon completion of erection of all equipment furnished, but not later than 60 days after the date of delivery of all of the equipment to be furnished; and payment of the final 10% on final completion of erection, testing and acceptance of all the equipment to be furnished; but not later than 180 days after the date of delivery of all of the equipment to be furnished, unless testing has been completed and shows the equipment to be unacceptable.

With each invoice for periodic payment, the Contractor shall enclose a Contractor's Declaration - Section 43, and an updated project schedule per Order of Completion - Section 2.

#### Section 17 - Deductions for Uncorrected Work

If the Supervising Professional decides it is inexpedient to correct work that has been damaged or that was not done in accordance with the Contract, an equitable deduction from the Contract price shall be made.

#### Section 18 - Correction of Work Before Final Payment

The Contractor shall promptly remove from the premises all materials condemned by the Supervising Professional as failing to meet Contract requirements, whether incorporated in the work or not, and the Contractor shall promptly replace and re-execute the work in accordance with the Contract and without expense to the City and shall bear the expense of making good all work of other contractors destroyed or damaged by the removal or replacement.

If the Contractor does not remove the condemned work and materials within 10 days after written notice, the City may remove them and, if the removed material has value, may store the material at the expense of the Contractor. If the Contractor does not pay the expense of the removal within 10 days thereafter, the City may, upon 10 days written notice, sell the removed materials at auction or private sale and shall pay to the Contractor the net proceeds, after deducting all costs and expenses that should have been borne by the Contractor. If the removed material has no value, the Contractor must pay the City the expenses for disposal within 10 days of invoice for the disposal costs.

The inspection or lack of inspection of any material or work pertaining to this Contract shall not relieve the Contractor of its obligation to fulfill this Contract and defective work shall be made good. Unsuitable materials may be rejected by the Supervising Professional notwithstanding that the work and materials have been previously overlooked by the Supervising Professional and accepted or estimated for payment or paid for. If the work or any part shall be found defective at any time before the final acceptance of the whole work, the Contractor shall forthwith make good the defect in a manner satisfactory to the Supervising Professional. The judgment and the decision of the

Supervising Professional as to whether the materials supplied and the work done under this Contract comply with the requirements of the Contract shall be conclusive and final.

### Section 19 - Acceptance and Final Payment

Upon receipt of written notice that the work is ready for final inspection and acceptance, the Supervising Professional will promptly make the inspection. When the Supervising Professional finds the work acceptable under the Contract and the Contract fully performed, the Supervising Professional will promptly sign and issue a final certificate stating that the work required by this Contract has been completed and is accepted by the City under the terms and conditions of the Contract. The entire balance found to be due the Contractor, including the retained percentage, shall be paid to the Contractor by the City within 30 days after the date of the final certificate.

Before issuance of final certificates, the Contractor shall file with the City:

- (1) The consent of the surety to payment of the final estimate;
- (2) The Contractor's Affidavit in the form required by Section 44.

In case the Affidavit or consent is not furnished, the City may retain out of any amount due the Contractor, sums sufficient to cover all lienable claims.

The making and acceptance of the final payment shall constitute a waiver of all claims by the City except those arising from:

- (1) unsettled liens;
- (2) faulty work appearing within 12 months after final payment;
- (3) hidden defects in meeting the requirements of the plans and specifications;
- (4) manufacturer's guarantees.

It shall also constitute a waiver of all claims by the Contractor, except those previously made and still unsettled.

### Section 20 - Suspension of Work

The City may at any time suspend the work, or any part by giving 5 days notice to the Contractor in writing. The work shall be resumed by the Contractor within 10 days after the date fixed in the written notice from the City to the Contractor to do so. The City shall reimburse the Contractor for expense incurred by the Contractor in connection with the work under this Contract as a result of the suspension.

If the work, or any part, shall be stopped by the notice in writing, and if the City does not give notice in writing to the Contractor to resume work at a date within 90 days of the date fixed in the written notice to suspend, then the Contractor may abandon that portion of the work suspended and will be entitled to the estimates and payments for all work done on the portions abandoned, if any, plus 10% of the value of the work abandoned, to compensate for loss of overhead, plant expense, and anticipated profit.

## Section 21 - Delays and The City's Right to Terminate Contract

If the Contractor refuses or fails to prosecute the work, or any separate part of it, with the diligence required to insure completion, ready for operation, within the allowable number of consecutive calendar days specified plus extensions, or fails to complete the work within the required time, the City may, by written notice to the Contractor, terminate its right to proceed with the work or any part of the work as to which there has been delay. After providing the notice the City may take over the work and prosecute it to completion, by contract or otherwise, and the Contractor and its sureties shall be liable to the City for any excess cost to the City. If the Contractor's right to proceed is terminated, the City may take possession of and utilize in completing the work, any materials, appliances and plant as may be on the site of the work and useful for completing the work. The right of the Contractor to proceed shall not be terminated or the Contractor charged with liquidated damages where an extension of time is granted under Extension of Time - Section 14.

If the Contractor is adjudged a bankrupt, or if it makes a general assignment for the benefit of creditors, or if a receiver is appointed on account of its insolvency, or if it persistently or repeatedly refuses or fails except in cases for which extension of time is provided, to supply enough properly skilled workers or proper materials, or if it fails to make prompt payments to subcontractors or for material or labor, or persistently disregards laws, ordinances or the instructions of the Supervising Professional, or otherwise is guilty of a substantial violation of any provision of the Contract, then the City, upon the certificate of the Supervising Professional that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy and after giving the Contractor 3 days written notice, terminate this Contract. The City may then take possession of the premises and of all materials, tools and appliances thereon and without prejudice to any other remedy it may have, make good the deficiencies or finish the work by whatever method it may deem expedient, and deduct the cost from the payment due the Contractor. The Contractor shall not be entitled to receive any further payment until the work is finished. If the expense of finishing the work, including compensation for additional managerial and administrative services exceeds the unpaid balance of the Contract Sum, the Contractor and its surety are liable to the City for any excess cost incurred. The expense incurred by the City, and the damage incurred through the Contractor's default, shall be certified by the Supervising Professional.

## Section 22 - Contractor's Right to Terminate Contract

If the work should be stopped under an order of any court, or other public authority, for a period of 3 months, through no act or fault of the Contractor or of anyone employed by it, then the Contractor may, upon 7 days written notice to the City, terminate this Contract and recover from the City payment for all acceptable work executed plus reasonable profit.

## Section 23 - City's Right To Do Work

If the Contractor should neglect to prosecute the work properly or fail to perform any provision of this Contract, the City, 3 days after giving written notice to the Contractor and its surety may, without prejudice to any other remedy the City may have, make good the deficiencies and may deduct the cost from the payment due to the Contractor.

## Section 24 - Removal of Equipment and Supplies

In case of termination of this Contract before completion, from any or no cause, the Contractor, if notified to do so by the City, shall promptly remove any part or all of its equipment and supplies from the property of the City, failing which the City shall have the right to remove the equipment and supplies at the expense of the Contractor.

The removed equipment and supplies may be stored by the City and, if all costs of removal and storage are not paid by the Contractor within 10 days of invoicing, the City upon 10 days written notice may sell the equipment and supplies at auction or private sale, and shall pay the Contractor the net proceeds after deducting all costs and expenses that should have been borne by the Contractor and after deducting all amounts claimed due by any lien holder of the equipment or supplies.

## Section 25 - Responsibility for Work and Warranties

The Contractor assumes full responsibility for any and all materials and equipment used in the construction of the work and may not make claims against the City for damages to materials and equipment from any cause except negligence or willful act of the City. Until its final acceptance, the Contractor shall be responsible for damage to or destruction of the project (except for any part covered by Partial Completion and Acceptance - Section 26). The Contractor shall make good all work damaged or destroyed before acceptance. All risk of loss remains with the Contractor until final acceptance of the work (Section 19) or partial acceptance (Section 26). The Contractor is advised to investigate obtaining its own builders risk insurance.

The Contractor shall guarantee the quality of the work for a period of one year. The Contractor shall also unconditionally guarantee the quality of all equipment and materials that are furnished and installed under the contract for a period of one year. At the end of one year after the Contractor's receipt of final payment, the complete work, including equipment and materials furnished and installed under the contract, shall be inspected by the Contractor and the Supervising Professional. Any defects shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days. Any defects that are identified prior to the end of one year shall also be inspected by the Contractor and the Supervising Professional and shall be corrected by the Contractor at its expense as soon as practicable but in all cases within 60 days.

The Contractor shall assign all manufacturer or material supplier warranties to the City prior to final payment. The assignment shall not relieve the Contractor of its obligations under this paragraph to correct defects.

## Section 26 - Partial Completion and Acceptance

If at any time prior to the issuance of the final certificate referred to in Acceptance and Final Payment - Section 19, any portion of the permanent construction has been satisfactorily completed, and if the Supervising Professional determines that portion of the permanent construction is not required for the operations of the Contractor but is needed by the City, the Supervising Professional shall issue to the Contractor a certificate of partial completion, and immediately the City may take over and use the portion of the permanent construction described in the certificate, and exclude the Contractor from that portion.

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the

Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

If prior use increases the cost of, or delays the work, the Contractor shall be entitled to extra compensation, or extension of time, or both, as the Supervising Professional may determine.

#### Section 27 - Payments Withheld Prior to Final Acceptance of Work

The City may withhold or, on account of subsequently discovered evidence, nullify the whole or part of any certificate to the extent reasonably appropriate to protect the City from loss on account of:

- (1) Defective work not remedied;
- (2) Claims filed or reasonable evidence indicating probable filing of claims by other parties against the Contractor;
- (3) Failure of the Contractor to make payments properly to subcontractors or for material or labor;
- (4) Damage to another Contractor.

When the above grounds are removed or the Contractor provides a Surety Bond satisfactory to the City which will protect the City in the amount withheld, payment shall be made for amounts withheld under this section.

#### Section 28 - Contractor's Insurance

- A. The Contractor shall procure and maintain during the life of this Contract, including the guarantee period and during any warranty work, such insurance policies, including those set forth below, as will protect itself from all claims for bodily injuries, death or property damage which may arise under this Contract; whether the acts were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. The following insurance policies are required:
  1. Worker's Compensation Insurance in accordance with all applicable state and federal statutes. Further, Employers Liability Coverage shall be obtained in the following minimum amounts:  
  
Bodily Injury by Accident - \$500,000 each accident  
Bodily Injury by Disease - \$500,000 each employee  
Bodily Injury by Disease - \$500,000 each policy limit
  2. Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 07 98. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements including, but not limited to: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further, the following minimum limits of liability are required:

\$1,000,000 Each occurrence as respect Bodily Injury Liability or Property Damage Liability, or both combined.

\$2,000,000 Per Job General Aggregate

\$1,000,000 Personal and Advertising Injury

\$2,000,000 Products and Completed Operations Aggregate

3. Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. Further, the limits of liability shall be \$1,000,000 for each occurrence as respects Bodily Injury Liability or Property Damage Liability, or both combined.
  4. Umbrella/Excess Liability Insurance shall be provided to apply excess of the Commercial General Liability, Employers Liability and the Motor Vehicle coverage enumerated above, for each occurrence and for aggregate in the amount of \$1,000,000.
- B. Insurance required under Section A.2 and A.3 of this Contract shall be considered primary as respects any other valid or collectible insurance that the City may possess, including any self-insured retentions the City may have; and any other insurance the City does possess shall be considered excess insurance only and shall not be required to contribute with this insurance. Further, the Contractor agrees to waive any right of recovery by its insurer against the City.
- C. In the case of all Contracts involving on-site work, the Contractor shall provide to the City before the commencement of any work under this Contract documentation demonstrating it has obtained the above mentioned policies. Documentation must provide and demonstrate an unconditional 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified. An original certificate of insurance may be provided as an initial indication of the required insurance, provided that no later than 21 calendar days after commencement of any work the Contractor supplies a copy of the endorsements required on the policies. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) to the City. If any of the above coverages expire by their terms during the term of this Contract, the Contractor shall deliver proof of renewal and/or new policies to the Administering Service Area/Unit at least ten days prior to the expiration date.
- D. Any Insurance provider of Contractor shall be admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of AA-@ Overall and a minimum Financial Size Category of AV@. Insurance policies and certificates issued by non-admitted insurance companies are not acceptable unless approved in writing by the City.

## Section 29 - Surety Bonds

Bonds will be required from the successful bidder as follows:

- (1) A Performance Bond to the City of Ann Arbor for the amount of the bid(s) accepted;
- (2) A Labor and Material Bond to the City of Ann Arbor for the amount of the bid(s) accepted.

Bonds shall be executed on forms supplied by the City in a manner and by a Surety Company satisfactory to the City Attorney.

## Section 30 - Damage Claims

The Contractor shall be held responsible for all damages to property of the City or others, caused by or resulting from the negligence of the Contractor, its employees, or agents during the progress of or connected with the prosecution of the work, whether within the limits of the work or elsewhere. The Contractor must restore all property injured including sidewalks, curbing, sodding, pipes, conduit, sewers or other public or private property to not less than its original condition with new work.

## Section 31 - Refusal to Obey Instructions

If the Contractor refuses to obey the instructions of the Supervising Professional, the Supervising Professional shall withdraw inspection from the work, and no payments will be made for work performed thereafter nor may work be performed thereafter until the Supervising Professional shall have again authorized the work to proceed.

## Section 32 - Assignment

Neither party to the Contract shall assign the Contract without the written consent of the other. The Contractor may assign any monies due to it to a third party acceptable to the City.

## Section 33 - Rights of Various Interests

Whenever work being done by the City's forces or by other contractors is contiguous to work covered by this Contract, the respective rights of the various interests involved shall be established by the Supervising Professional, to secure the completion of the various portions of the work in general harmony.

The Contractor is responsible to coordinate all aspects of the work, including coordination of, and with, utility companies and other contractors whose work impacts this project.

## Section 34 - Subcontracts

The Contractor shall not award any work to any subcontractor without prior written approval of the City. The approval will not be given until the Contractor submits to the City a written statement concerning the proposed award to the subcontractor. The statement shall contain all information the City may require.

The Contractor shall be as fully responsible to the City for the acts and omissions of its subcontractors, and of persons either directly or indirectly employed by them, as it is for the acts and omissions of persons directly employed by it.

The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind subcontractors to the Contractor by the terms of the General Conditions and all other contract documents applicable to the work of the subcontractors and to give the Contractor the same power to terminate any subcontract that the City may exercise over the Contractor under any provision of the contract documents.

Nothing contained in the contract documents shall create any contractual relation between any subcontractor and the City.

#### Section 35 - Supervising Professional's Status

The Supervising Professional has the right to inspect any or all work. The Supervising Professional has authority to stop the work whenever stoppage may be appropriate to insure the proper execution of the Contract. The Supervising Professional has the authority to reject all work and materials which do not conform to the Contract and to decide questions which arise in the execution of the work.

The Supervising Professional shall make all measurements and determinations of quantities. Those measurements and determinations are final and conclusive between the parties.

#### Section 36 - Supervising Professional's Decisions

The Supervising Professional shall, within a reasonable time after their presentation to the Supervising Professional, make decisions in writing on all claims of the City or the Contractor and on all other matters relating to the execution and progress of the work or the interpretation of the contract documents.

#### Section 37 - Storing Materials and Supplies

Materials and supplies may be stored at the site of the work at locations agreeable to the City unless specific exception is listed elsewhere in these documents. Ample way for foot traffic and drainage must be provided, and gutters must, at all times, be kept free from obstruction. Traffic on streets shall be interfered with as little as possible. The Contractor may not enter or occupy with agents, employees, tools, or material any private property without first obtaining written permission from its owner. A copy of the permission shall be furnished to the Supervising Professional.

#### Section 38 - Lands for Work

The Contractor shall provide, at its own expense and without liability to the City, any additional land and access that may be required for temporary construction facilities or for storage of materials.

#### Section 39 - Cleaning Up

The Contractor shall, as directed by the Supervising Professional, remove at its own expense from the City's property and from all public and private property all temporary structures, rubbish and waste materials resulting from its operations unless otherwise specifically approved, in writing, by the Supervising Professional.

#### Section 40 - Salvage

The Supervising Professional may designate for salvage any materials from existing structures or underground services. Materials so designated remain City property and shall be transported or stored at a location as the Supervising Professional may direct.

#### Section 41 - Night, Saturday or Sunday Work

No night or Sunday work (without prior written City approval) will be permitted except in the case of an emergency and then only to the extent absolutely necessary. The City may allow night work which, in the opinion of the Supervising Professional, can be satisfactorily performed at night. Night work is any work between 8:00 p.m. and 7:00 a.m. No Saturday work will be permitted unless the Contractor gives the Supervising Professional at least 48 hours but not more than 5 days notice of the Contractor's intention to work the upcoming Saturday.

#### Section 42 - Sales Taxes

Under State law the City is exempt from the assessment of State Sales Tax on its direct purchases. Contractors who acquire materials, equipment, supplies, etc. for incorporation in City projects are not likewise exempt. State Law shall prevail. The Bidder shall familiarize itself with the State Law and prepare its Bid accordingly. No extra payment will be allowed under this Contract for failure of the Contractor to make proper allowance in this bid for taxes it must pay.

**CONTRACTOR'S DECLARATION**

I hereby declare that I have not, during the period \_\_\_\_\_, 200\_\_, to \_\_\_\_\_, 20\_\_, performed any work, furnished any materials, sustained any loss, damage or delay, or otherwise done anything in addition to the regular items (or executed change orders) set forth \_\_\_\_\_ in \_\_\_\_\_ the \_\_\_\_\_ Contract \_\_\_\_\_ titled \_\_\_\_\_,

for which I shall ask, demand, sue for, or claim compensation or extension of time from the City, except as I hereby make claim for additional compensation or extension of time as set forth on the attached itemized statement. I further declare that I have paid all payroll obligations related to this Contract that have become due during the above period and that all invoices related to this Contract received more than 30 days prior to this declaration have been paid in full except as listed below.

There is/is not (Contractor please circle one and strike one as appropriate) an itemized statement attached regarding a request for additional compensation or extension of time.

\_\_\_\_\_  
Contractor

Date

By  
(Signature)

Its  
(Title of Office)

Past due invoices, if any, are listed below.

Section 44

**CONTRACTOR'S AFFIDAVIT**

The undersigned Contractor, \_\_\_\_\_, represents that on \_\_\_\_\_, 20\_\_\_\_\_, it was awarded a contract by the City of Ann Arbor, Michigan to \_\_\_\_\_ under the terms and conditions of a Contract titled \_\_\_\_\_.

The Contractor represents that all work has now been accomplished and the Contract is complete.

The Contractor warrants and certifies that all of its indebtedness arising by reason of the Contract has been fully paid or satisfactorily secured; and that all claims from subcontractors and others for labor and material used in accomplishing the project, as well as all other claims arising from the performance of the Contract, have been fully paid or satisfactorily settled. The Contractor agrees that, if any claim should hereafter arise, it shall assume responsibility for it immediately upon request to do so by the City of Ann Arbor.

The Contractor, for valuable consideration received, does further waive, release and relinquish any and all claims or right of lien which the Contractor now has or may acquire upon the subject premises for labor and material used in the project owned by the City of Ann Arbor.

This affidavit is freely and voluntarily given with full knowledge of the facts.

Contractor  
By  
(Signature)  
Its  
(Title of Office)

Subscribed and sworn to before me, on this \_\_\_\_\_ day of \_\_\_\_\_, 200  
\_\_\_\_\_, \_\_\_\_\_ County, Michigan

Notary Public  
My commission expires on:

## **STANDARD SPECIFICATIONS**

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the Advertisement. All work under this Contract which is not included in these Standard Specifications, or which is performed using modifications to these Standard Specifications, shall be performed in accordance with the Detailed Specifications included in these contract documents.

A copy of the Public Services Department Standard Specifications may be purchased from the Engineering Division, (Fourth Floor, City Hall, Ann Arbor, Michigan), for \$35.00 per copy. In addition, a copy of these Standard Specifications is available for public viewing at the Engineering Division office, for review Monday through Friday between the hours of 8:30 a.m. and 4:00 p.m. In addition, a copy of these Standard Specifications is available for public viewing on the City of Ann Arbor Website:  
[www.a2gov.org/government/publicservices/project\\_management/privatedev/Pages/Standardspecificationbook.aspx](http://www.a2gov.org/government/publicservices/project_management/privatedev/Pages/Standardspecificationbook.aspx).

SECTION 01000  
GENERAL REQUIREMENTS

1.00 GENERAL

1.01 DESCRIPTION OF WORK

- A. Work under this Contract consists of, but is not limited to, the construction of new drainage swales, installation of drainage culverts, installation and re-installation of end sections, installation of turf reinforcing mats, reconstruction of existing drainage channels, installation of hard armor, removal of sediment from sediment basin, earthwork, topsoil placement, seeding, planting, site restoration, soil erosion control, and all related work.
- B. Contract Drawings are included which give specific locations for all work under this Contract.

1.02 EXISTING PUBLIC ACCESS

- A. The CONTRACTOR shall be responsible for maintaining access to existing sidewalks, driveways, roads, pedestrian paths and facilities during the construction period. The main access drive is used 24 hours a day, 7 days a week, 365 days a year by police and other municipal services. At least one lane of vehicular traffic on the main access drive shall be maintained by the CONTRACTOR at all times.
- B. If access to existing areas must be temporarily disrupted, the CONTRACTOR shall be responsible for providing appropriate signage, barricades and safety devices.
- C. Access to existing roads and walkways shall not be temporarily disrupted without coordination with and prior approval of the OWNER.
- D. The Ann Arbor Maintenance Facility is a limited access facility. Access badges will be necessary to enter the work area during hours when the site gates are closed. The CONTRACTOR shall be responsible for requesting an adequate number of access badges at the beginning of the project from the OWNER. The CONTRACTOR shall return all access badges to the OWNER upon substantial completion of work. The access procedure may be revised by the City at any time.

1.03 CONSTRUCTION WATER

- A. Water for construction may be purchased from the OWNER. The CONTRACTOR shall be responsible for making the necessary arrangements. There is a call box at the facility to obtain access to water.

1.04 CONSTRUCTION POWER

- A. Electrical power to be used during construction is not available from the OWNER. The CONTRACTOR shall be responsible for providing all power generation.

1.05 NOTIFICATION OF UTILITIES

- A. The CONTRACTOR shall notify all utilities prior to any excavation. Information regarding size and location is available from the utility.
- B. MISS DIG - The Detroit Edison Co., Consumers Energy Co., Michigan Consolidated Gas Co., and the telephone companies are members of a utility communication system called "MISS DIG" that provides service to participating utilities. The CONTRACTOR shall contact "MISS DIG" not

less than 72 hours before starting construction for assistance in locating utilities or for any work to be done on utilities.

#### 1.06 WORK SCHEDULE AND CONSTRUCTION SEQUENCE

- A. Prior to commencing the work, the CONTRACTOR shall provide the ENGINEER a detailed schedule and sequence of the proposed work. The schedule shall include a list of tasks required to complete the work; their relevancy to each other; expected duration; and completion dates.
- B. The following construction sequence is provided to the CONTRACTOR as guidance on the expected order of completion of the incorporated work items.
  - 1. Install soil erosion control measures.
  - 2. Install topsoil mounds.
  - 3. Grading and earthwork.
  - 4. Install culverts.
  - 5. Install channel armor and turf reinforcing mat.
  - 6. Install trees and shrubs.
  - 7. Seed and restore the site.
- C. Items of work not specifically mentioned above may be constructed separately or concurrently in accordance with a schedule approved by ENGINEER.

#### 1.09 CONSTRUCTION PERMITS

- A. The CONTRACTOR will be required to follow the requirements established by all permits necessary for the construction of this project.
- B. The Soil Erosion and Sedimentation Control Permit, as part of Public Act 451 (1994), Part 91 (Pittsfield Township), shall be applied for by the CONTRACTOR. The plan review fee will be paid for by the CONTRACTOR. The CONTRACTOR will be required to obtain the permit, pay all associated fees, and adhere to all requirements of the permit. The CONTRACTOR must submit a copy of the permit to the ENGINEER prior to construction.
- C. The wetland mitigation area restoration is permitted under MDEQ/USACE Joint Wetlands Permit 04-81-0090-P, and associated corrective action plans. The CONTRACTOR shall obtain a copy of this permit from the OWNER prior to construction.

#### 1.10 SOIL AND CONCRETE TESTING

- A. The CONTRACTOR shall be responsible for providing a testing firm (acceptable to the OWNER) to perform soil compaction tests and material quality control and testing at CONTRACTOR cost.
- B. The CONTRACTOR shall provide and pay for the service of an independent materials testing laboratory to provide material and compaction testing. The type and minimum frequency of testing shall be as specified in the City of Ann Arbor Public Services Department Standard Specifications (Orange Book). Testing shall include but not be limited to subbase, base and concrete for concrete drive replacement, and backfill for utility installation.
- C. The CONTRACTOR shall notify the ENGINEER of all test results at least 48 hours in advance of all new materials to be used. Any area failing tests shall be corrected and retested at the CONTRACTOR's expense.

- D. Copies of test reports shall be furnished to the OWNER and distributed to parties designated by the OWNER, including the CONTRACTOR.

#### 1.11 DUST CONTROL

- A. All haul roads, and public and private roads, driveways and parking lots used by the CONTRACTOR must be maintained in a dust free condition during the life of this Contract. The control of the dust shall be accomplished by the application of dust control materials and methods of application as approved and as directed by the ENGINEER.
- B. Should the CONTRACTOR be negligent of his duties in providing dust control, the OWNER may, with or without notice, cause the same to be done and deduct the cost of such work from any monies due or to become due the CONTRACTOR under this Contract, but the performance of such work by the OWNER, or at his insistence, shall service in no way to release the CONTRACTOR from his liability for dust control.

#### 1.12 CONSTRUCTION STAKING

- A. The CONTRACTOR will be required to provide all necessary staking.

#### 1.13 PROJECT PROGRESS MEETING

- A. It shall be the responsibility of the CONTRACTOR to have a representative present at each meeting. The meetings shall be held at least once a month as directed by the ENGINEER.

#### 1.14 METHOD OF MEASUREMENT AND BASIS OF PAYMENT

##### A. General

1. The method of measurement and the basis of payment for each item in the Proposal will be as specified in the schedule attached. The items are generally grouped by the section of the Specifications under which the particular unit of work is detailed. There will be no payment allowed for any unit of work not specifically mentioned in the Proposal as a bid item, and any such unit of work not mentioned in the Proposal, but necessary for the completion of the Project, will be considered as incidental to the construction of the Project.

2. MEASUREMENT

Quantities of work completed under the Contract will be measured by the ENGINEER according to the United States standard measures. When measurements are stated in miles, stations, acres, they will be horizontal measurements unless specified otherwise. Where measurements are specified to be "in place," they will be taken along the actual surface of the completed item to obtain lineal, area, or volume measurements.

3. PAYMENT

In each and every instance, where a Basis of Payment is specified, it shall be understood to be prefaced by the following statement, "The contract unit price and/or lump sum bid in the Proposal will be payment in full for all labor, materials, and equipment necessary to do the following according to the Plans and Specifications." Payment shall be made on the basis of the actual quantity of the item completed and accepted at the unit price, or at the percent complete for lump sum, for such item named in the Proposal. Surface restoration percentages identified under these items will not be paid until landscaping has been completed.

4. A description of the items generally serving as the Basis of Payment is included in the Bid Form – Section 1 Schedule of Prices.

END OF SECTION 1000

## SECTION 02010

### SITE GENERAL PROVISIONS

#### 1.00 GENERAL

#### 1.01 DESCRIPTION

- A. The CONTRACTOR shall provide all labor, materials, tools and equipment necessary for the preparation and restoration of the site of the project.

#### 1.02 CLEARING AND GRUBBING

- A. Trees and shrubs are not to be removed unless required by the Plans and with the express permission of the ENGINEER. Where trees are permitted to be removed by the ENGINEER, the ENGINEER shall flag those trees in advance, and the CONTRACTOR shall remove such trees by cutting and allowing stumps to remain. Any logs, branches, brush and debris that interfere with the work may be removed from the site and disposed of by the CONTRACTOR.

#### 1.03 PROTECTION OF TREES

- A. All trees which are to be preserved and which, in the opinion of the ENGINEER, might be subject to damage by the CONTRACTOR's operations, shall be adequately protected against damage by orange construction fencing securely wired or tied to stakes around the tree or group of trees. Such protection shall not be removed until authorized by the ENGINEER.
- B. Machine excavation shall not be made within a circular area of any tree, the diameter of the area in feet being equal to the diameter of the tree in inches or around the drip edge of the trees; whichever is greater. Provide fencing around the trees zone of influence. If hand excavation within this area cuts across a large root of a tree, the cutting of which, in the opinion of the ENGINEER, would be injurious to the tree, the CONTRACTOR shall tunnel under such root and protect it from injury throughout the work.
- C. No trees are to be removed without the expressed approval of the OWNER.

#### 1.04 TEMPORARY ROADWAYS

- A. The location of temporary access routes shall be subject to the approval of the OWNER.
- B. The OWNER may require that materials used in construction of temporary access routes remain in place after project completion to provide permanent access, or may require the CONTRACTOR to remove such materials and restore and stabilize grades per the plans and specifications.
- C. Materials used for temporary access within the wetland mitigation area shall be removed by the CONTRACTOR prior to the beginning of the second growing season after seeding, and the access routes within the wetland mitigation area restored and stabilized per the plans and specifications.

#### 1.05 WORK AREA AND STORAGE OF MATERIALS

- A. CONTRACTOR shall utilize staging areas as approved by the OWNER. CONTRACTOR shall restore the space to existing or better conditions.
- B. The working area shall be organized in an orderly manner with storage and tool sheds, offices and sanitary facilities, parking areas for employees, and all other necessary facilities developed and maintained by the CONTRACTOR. The CONTRACTOR shall keep the site and all haul roads reasonably clean and dust free.

- C. All materials, supplies and equipment, whether furnished by the CONTRACTOR or by the OWNER, shall be delivered, stored and handled as to prevent the inclusion of foreign materials and/or damage by water, freezing, breakage or other causes. Packaged materials shall be delivered in the original unopened containers and shall be stored until ready for use. All materials which have been stored shall meet the requirements of the Specifications at the time they are used in the project.
- D. Where the CONTRACTOR is required to do work within the rights-of-way under the jurisdiction of governmental bodies, he shall meet the requirements of said governmental bodies for the work and storage within their jurisdiction. Such requirements must be met as a minimum requirement, and if the specifications given herein impose further limitations on the work, they shall also be met as the required work standard.

#### 1.06 EXISTING PUBLIC UTILITIES

- A. Existing public utilities and underground structures, such as pipe lines, electric conduits, sewers and water lines are shown on the Plans. The information shown is believed to be reasonably correct and complete; however, neither the correctness nor the completeness of such information is guaranteed.
- B. The CONTRACTOR shall conduct his operations so as not to damage any existing utility whether shown in the Plans or not. The CONTRACTOR shall correct, at his own expense, any injury caused during the operations of his subcontractors or suppliers.
- C. If the CONTRACTOR desires, or is required by the utility companies, to relocate or protect any power or telephone poles to facilitate his work, any expense encountered from such relocation shall be borne by the CONTRACTOR.

#### 1.07 NOTIFICATION TO UTILITIES

- A. Prior to the start of any operations in the vicinity of any utilities, the CONTRACTOR shall notify the utility companies and request that they stake out the locations of the utilities in question.

#### 1.08 SANITARY REQUIREMENTS

- A. The CONTRACTOR shall provide adequate sanitary facilities for all persons employed on the project. The sanitary facilities shall conform in every way to the requirements of the "General Safety Rules and Regulations for the Construction Industry."

#### 1.09 UTILITIES

- A. The CONTRACTOR shall make all necessary arrangements for the provisions of all utility services, temporary or permanent, required under this contract. The CONTRACTOR shall pay all costs for such connections and services.
- B. All utility services shall be inspected by and shall meet the requirements of the applicable codes and governmental bodies.

## 1.10 PUMPING AND DRAINAGE

- A. Adequate pumping and drainage facilities shall be provided and water, from whatever source, entering the work during any stage of construction shall be controlled in a manner satisfactory to the ENGINEER. All pumping and drainage shall be done with no damage to property or structures and without interference with the right of the public, owners of private property, pedestrians, vehicular traffic, or the work of other contractors. Dewatering shall be done in such a manner that the soil under or adjacent to existing structures shall not be disturbed, removed or displaced.
- B. The overloading or obstructing of existing drainage facilities shall not be permitted, and the CONTRACTOR shall be solely responsible for any damages caused to such existing drainage facilities during his operations.

## 1.11 WINTER CONSTRUCTION

- A. The OWNER shall have permissive authority over the work which is proposed to be done during the winter months. The CONTRACTOR shall provide adequate weather protection, temporary heating and take any other measures which are necessary to insure that the work performed during the winter months is properly installed and protected against damage from freezing.

## 2.00 PRODUCTS

Not Applicable

## 3.00 EXECUTION

### 3.01 CONTROL OF WATER POLLUTION AND SILTATION

#### A. General Requirements

1. The CONTRACTOR shall conduct his work in a manner to comply with the Soil Erosion and Sedimentation Control Act of 1972, (MICH P.A. 347) that will not cause damaging siltation or pollution of the water in streams, rivers, lakes and reservoirs. All work of water pollution and siltation control is subject to inspection by the OWNER and/or the Department of Natural Resources and Environment.
2. All applicable regulations of fish and wildlife agencies and statutes relating to the prevention and abatement of pollution shall be complied with in the performance of the Contract.
3. Construction operations shall be conducted in such manner as to reduce erosion to the practicable minimum and prevent damaging siltation to streams or lakes. The area of erodible land exposed to the elements by grading operations, including gravel pits, waste or disposal areas and haul roads, at any one time shall be subject to approval of the ENGINEER and the duration of such exposure prior to final trimming and finishing of the areas shall be as short as practical. The ENGINEER shall have full authority to order the suspension of grading and other operations pending adequate and proper performance of trimming, finishing and maintenance work or to restrict the area of erodible land exposed to the elements.
4. Gravel or stone, consisting of durable particles of rock and containing only negligible quantities of fines, shall be used for construction pads, haul roads and temporary roads in or across streams.

5. The disturbance of lands and waters that are outside the limits of construction as staked is prohibited, except as found necessary and approved by the ENGINEER.
6. The CONTRACTOR shall conduct his work in such manner as to prevent the entry of fuels, oils, bituminous materials, chemicals, sewage or other harmful materials into streams, rivers, lakes or reservoirs.
7. Water from aggregate washing or other operations containing sediment shall be treated by filtration, by use of a settling basin or other means to reduce the sediment content to a level acceptable to the MDEQ.
8. All waterways shall be cleared as soon as practical of falsework, piling, debris or other obstructions placed during construction operations not a part of the finished work. Care shall be taken during construction and removal of such barriers to minimize the muddying of a stream.

B. Temporary Control Requirements

1. The CONTRACTOR shall provide temporary soil erosion and sedimental controls according to current local soil conservation district soil erosion and sedimentation control standards and specifications or revisions thereof.
2. Permanent soil erosion control measures for all slopes, channels, ditches or any disturbed land area shall be completed within 15 calendar days after final grading or the final earth change has been completed or where significant earth change activity ceases, temporary soil erosion control measures shall be implemented within 30 calendar days. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are implemented.

3.02 FINISH GRADING, TOP SOIL

- A. After all backfilling and rough grading has been completed and thoroughly compacted, the entire disturbed area at the site shall be graded to smooth, even surfaces as shown by the proposed new contours shown on the Plans. The portion of the disturbed area where no new contours are shown shall be graded to smooth, even surfaces approximating the original surfaces.
- B. All debris and larger stones and sticks and the like shall be removed and disposed of and the entire disturbed area made ready for the addition of top soil and seeding.
- C. After all construction has been completed, the CONTRACTOR shall spread 4 inches of approved and screened top soil over all graded areas.

END OF SECTION 2010

## SECTION 3120 - EARTH MOVING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

A. Work shall include furnishing of labor, materials, tools, equipment, accessories, and services necessary for completing the excavation and backfilling for the items as shown on the contract drawings and/or as herein required. This also includes trenching, trench or subgrade undercutting, roadway earthwork, complete and continual drainage of excavation, sheeting, bracing, and shoring of sides of the excavation, backfilling around structures and over pipelines, and the disposal of excess excavated material.

B. Section Includes:

1. Preparing subgrades for new drainage channels, channel reconstruction, hard armor, turf reinforcing mats, native seeding and planting.
2. Excavating and backfilling for structures.
3. Excavating and backfilling trenches for utilities and pits for buried utility structures.
4. Dewatering.

#### 1.02 DEFINITIONS

A. Backfill: Soil material or controlled low-strength material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.
2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Drainage Course: Aggregate layer supporting the slab-on-grade that also minimizes upward capillary flow of pore water.

F. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

1. Authorized Additional Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions as directed by Engineer. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
2. Bulk Excavation: Excavation more than 10 feet in width and more than 30 feet in length.
3. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated lines and dimensions without direction by Engineer. Unauthorized excavation, as well as remedial work directed by Engineer, shall be without additional compensation.

- G. Fill: Soil materials used to raise existing grades.
- H. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.
- I. Subbase Course: Aggregate layer placed between the subgrade and base course for hot-mix asphalt pavement, or aggregate layer placed between the subgrade and a cement concrete pavement or a cement concrete or hot-mix asphalt walk.
- J. Subgrade: Uppermost surface of an excavation or the top surface of a fill or backfill immediately below subbase, drainage fill, drainage course, or topsoil materials.
- K. Utilities: On-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

### 1.03 SUBMITTALS

- A. Product Data: For each type of the following manufactured products required:
  - 1. Geotextiles.
  - 2. Controlled low-strength material, including design mixture.
  - 3. Geofam.
  - 4. Warning tapes.
- B. Samples for Verification: For the following products, in sizes indicated below:
  - 1. Geotextile: 12-inch by 12-inch.
- C. Qualification Data: For qualified testing agency.
- D. Material Test Reports: For each borrow soil material proposed for fill and backfill as follows:
  - 1. Classification according to ASTM D 2487.
  - 2. Laboratory compaction curve according to ASTM D 698 and ASTM D 1557.

### 1.04 QUALITY ASSURANCE

- A. Pre-excavation Conference: Conduct conference at Project site.
- B. References to Michigan Department of Transportation (MDOT) Specifications shall pertain to the 2003 Standard Specifications for Construction.

### 1.05 PROJECT CONDITIONS

- A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth moving operations.
  - 1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
  - 2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.
- B. Utility Locator Service: Notify MISS DIG for area where Project is located before beginning earth moving operations. Provide a minimum of three full working days advance notification.

- C. Do not commence earth-moving operations until temporary erosion- and sedimentation-control measures are in place.
- D. Do not commence earth-moving operations until plant-protection measures are in place.
- E. The following practices are prohibited within protection zones, 100-year floodplain and wetlands:
  - 1. Storage of construction materials, debris, or excavated material.
  - 2. Parking vehicles or equipment.
  - 3. Foot traffic.
  - 4. Erection of sheds or structures.
  - 5. Impoundment of water.
  - 6. Excavation or other digging unless otherwise indicated.
  - 7. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
- F. Do not direct vehicle or equipment exhaust towards protection zones, 100-year floodplain and wetlands.
- G. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones, 100-year floodplain and wetlands.

## PART 2 - PRODUCTS

### 2.01 SOIL MATERIALS - GENERAL

- A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

### 2.02 BEDDING

- A. Sand shall be a sharp, clean sand free of lumps of clay or debris with 100 percent passing a 3/8 inch sieve and less than 10 percent loss by wash.
- B. Granular material shall meet the requirements of Section 902.08 of the MDOT Standard Specifications for Construction for Granular Material Class II and Class III.
- C. Pea gravel shall be unwashed and shall be from 1/4 inch to 5/8 inch in size.
- D. Bedding material shall be provided from offsite unless the trench passes through a well-defined strata of sand or gravel. Bedding material shall be subject to the approval of the Engineer.
- E. Stone material shall meet the requirements of Section 902.03 of the MDOT Standard Specifications for Construction for 6A crushed Coarse Aggregate or approved equal.

### 2.03 BACKFILL

- A. Job Excavated Backfill: Job excavated backfill shall be defined as material excavated from the site that is free from frozen earth, boulders, rocks, stones larger than 3 inch in size, debris, blue and gray clay, and organic material.

B. Granular Backfill: Granular backfill shall be defined as sharp sand, gravel, or crushed stone that is free from lumps of clay and soft or flaky material and shall conform to the latest MDOT Standard Specification for Granular Material Class II or III. Granular backfill shall be used for fill work located under or within the influence of roadway surfaces. The Owner's standard details shall dictate which type of granular material (Class II or III) is required for the project. Material excavated from the trench may be used as granular backfill when, in the opinion of the Engineer, it meets the granular backfill grading requirements.

C. Stone Refill

1. Stone refill shall consist of natural gravel, slag, or crushed gravel that is equivalent in gradation to MDOT 6A unless otherwise called for in the plan details.

D. Embankment

1. Embankment material shall consist of sound earth as described in Section 205.03H of the MDOT Standard Specifications for Construction.

2.04 ACCESSORIES

A. Warning Tape: Acid- and alkali-resistant, polyethylene film warning tape manufactured for marking and identifying underground utilities, 6 inches wide and 4 mils thick, continuously inscribed with a description of the utility; colored as follows:

- 1 Red: Electric.
- 2 Yellow: Gas, oil, steam, and dangerous materials.
- 3 Orange: Telephone and other communications.
- 4 Blue: Water systems.
- 5 Green: Sewer systems.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, protection zones, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.
- B. Protect and maintain erosion and sedimentation controls during earth moving operations.
- C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.02 PAVEMENT CUTS

- A. Where a trench must be cut through pavement, driveway, or sidewalk, particular care shall be taken to avoid unnecessary damage to adjoining areas of the pavement, driveway or sidewalk. All cuts through existing surfaces shall be made full-depth with a concrete saw. Cuts in concrete pavement shall be made parallel with longitudinal and transverse construction or contraction joints.
- B. Saw cuts in concrete pavement shall not be nearer than five feet (5'-0") to a transverse joint, to the centerline of pavement, or to the edge of pavement or curb, i.e., no existing or replacement

pavement shall be less than five feet (5'-0") in width. If the damaged pavement or surfacing is nearer than five feet (5'-0") to a joint or centerline of pavement , or to edge of pavement, surfacing or curb, removal and replacement shall be extended to said joint, centerline, edge of pavement, surfacing, or curb. These same requirements shall apply to the saw cutting and replacement of concrete driveways.

- C. If a square or block of sidewalk is cut, broken, or cracked, the entire square or block shall be removed and replaced.

### 3.03 EXCAVATION AND TRENCH DEWATERING

- A. The Contactor shall maintain any excavation or trench free of water during construction of any structures and/or pipelines. Water accumulated due to rainfall or runoff and minor groundwater inflow that can be controlled through the use of portable trash, submersible or positive displacement pumps shall be considered normally expected and anticipated conditions associated with underground construction. This effort will be considered as included in the cost of construction and will not be reimbursable at the unit price bid for dewatering in the bid form.
- B. The required use of deep wells and/or well points to lower and maintain a reduction in the groundwater elevation below the trench bottom shall be subject to approval of the Engineer and shall constitute a reimbursable expense for trench or excavation dewatering. If a pay item for dewatering is included in the bid form, then the Contractor would receive payment for this work based upon the unit bid price. If there are no provisions in the contract for payment for dewatering (i.e. bid item of included in other pay items), then the Contractor shall submit a detailed estimate of the additional cost. Upon acceptance of the Contractor's estimate, the Engineer shall issue a change order. The Contractor must demonstrate that a continuous effort is required to control hydrostatic pressure in the construction area in order to claim compensation for dewatering.
- C. The Contractor shall take adequate precautions to control the discharge of dewatering pumps so as to prevent soil erosion or sedimentation of drainage ditches, structures, storm sewers, culverts, natural drainage courses, ponds, lakes or wetlands.
- D. The Contractor shall insure that discharge from any dewatering operations has a suitable outlet and that it will not cause any damage to adjacent dwellings or property. Water and discharge hoses shall be placed and/or controlled so as to prevent a hazard to pedestrians or motor vehicles passing in the vicinity of the construction site.
- E. Electric pumps shall have suitable power supply and appurtenances meeting NEC requirements and properly fused and grounded to prevent electrical shock hazards to on-site personnel.
- F. Internal combustion engine driven pumps, if operated 24 hours per day, shall have adequate exhaust silencers in good repair to muffle engine noise to an acceptable level for the area where located.

### 3.04 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rock, soil materials, and obstructions. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions.
  - 1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

- B. Classification of Excavation:

1. Earth, as a name for excavated material, shall include all glacial deposits whether cemented or not, except solid boulders one-half cubic yard or more in volume. It shall also include all alluvial deposits and material of every kind that can be excavated with equal facility by the equipment and means typically used for earth excavation.
2. Peat, as a name for excavated material, shall include all unstable organic soils such as peat, muck, marl, and underlying very soft clay.
3. Rock, as a name for excavated material, shall include pre-glacial solid ledge rock that can be removed most practically by blasting, barring or wedging, or by some other standard method of quarrying solid rock. It shall also include solid boulders of one-half cubic yard or more in volume as well as existing concrete, masonry with mortar joints, or other existing structural work that can be excavated practically only by methods of quarrying solid rock. It shall not include fragile, friable, or disintegrated materials of any kind that can be excavated by equipment and means used for earth excavation.

### 3.05 METHODS OF EXCAVATION IN EARTH

- A. All excavation shall be by open cut from the surface, except in special cases where boring/jacking under pavement or structures may be required, or where boring/jacking under the root system will be required for tree root protection. All excavation shall be made in such a manner and to such depth, length, and width as will give ample room for building the structures, bracing, sheeting, and supporting the sides of the excavation, pumping and drainage of ground water and sewage which may be encountered, and removal of all materials excavated. Special care shall be taken so that the soil below the bottom of structures to be built shall be left undisturbed so that a firm bed will be provided for construction. Any voids shall be backfilled with suitable granular material and shall be properly compacted.

### 3.06 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. If applicable, extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.
  1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
  2. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended as bearing surfaces.

#### B. Excavations at Edges of Tree- and Plant-Protection Zones:

1. Excavate by hand to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.

### 3.07 EXCAVATION FOR WALKS, PAVEMENTS AND ROADWAYS

- A. Excavate surfaces under walks and pavements to indicated lines, cross sections, elevations, and subgrades.

- B. Roadway earthwork shall be performed in accordance with the construction methods that are described in Section 205 of the MDOT Standard Specifications for Construction unless otherwise called for in the plan notes, details, or supplemental specifications.

### 3.08 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.

- 1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line.

- B. General

- 1. Excavation shall be of sufficient width and depth to provide adequate room for construction and installation of the work to the lines, grades and dimensions called for on the plans. Unless otherwise called for on the Owner's standard details, the width of a trench from the invert to a height twelve (12) inches above the top of the pipe barrel shall be indicated as follows:

- a. Pipe size 4" through 12": Maximum trench width = 30"

- b. Pipe size larger than 12": Maximum trench width = outside diameter plus 24"

- If the maximum trench width as specified above is exceeded, unless otherwise shown on the drawings, the Contractor shall install, at his own expense, such concrete cradling or other bedding as is approved by the Engineer, to support the added load of the backfill.

- 2. Where trench excavation is in granular material, the last six (6) inches of trench depth shall be carefully excavated and trimmed by hand to the exact elevation and contour of pipe. Where trench excavation is in rock or clay soil, the trench bottom shall be undercut a minimum of four (4) inches below the final elevation of pipe. The bedding material as hereinafter specified shall be placed and compacted to the underside of the pipe.

- 3. Excavation for structures shall be made to the outside lines and surfaces of such structures wherever it is practicable to build directly against the sides and bottoms of excavations. In such cases, care shall be taken not to disturb the original foundation or backing. Final trimming shall be done by hand just before construction of the structure. If excess excavation is made, or the material becomes disturbed so as to require removal beyond the prescribed limits, the resulting space shall be refilled with bedding, as specified hereinafter, and solidly machine tamped into place to 95 percent of maximum unit weight before the construction work proceeds.

- 4. Excavation for structures shall be extended sufficiently beyond the limits of the structure to provide ample room for form construction and other construction methods to be followed, wherever necessary.

- C. Bedding

- 1. Where the subgrade below the bottom of the pipe is disturbed during the construction, the space shall be refilled with sand or pea gravel bedding material solidly tamped to form a firm foundation for the pipe. Sand or pea gravel bedding material shall be extended to one (1) foot above the pipe, except that the bedding shall be exclusively pea gravel to the springline for pipe 36-inch and greater in diameter.

- D. Amount of Trench Opening

1. Not more than 50 feet of trench shall be open at one time in advance of the pipe unless permitted by the Engineer. The length of street that may be occupied by the construction work at any one time shall be subject to the direction of the Engineer and will be based on requirements of the use of the street by the public. No more than 600 consecutive feet of street length shall be occupied at one time, and vehicle traffic through the street shall not be entirely stopped without permission of the Engineer. After placement of the utility line, the Contractor shall backfill the trench promptly in order to minimize the length of open trench and avoid any unsafe conditions.

E. Trenches in Tree- and Plant-Protection Zones:

1. Hand-excavate to indicated lines, cross sections, elevations, and subgrades. Use narrow-tine spading forks to comb soil and expose roots. Do not break, tear, or chop exposed roots. Do not use mechanical equipment that rips, tears, or pulls roots.
2. Do not cut main lateral roots or taproots; cut only smaller roots that interfere with installation of utilities.
3. Cut and protect roots according to requirements in Division 01 Section "Temporary Tree and Plant Protection."

### 3.09 SUBGRADE INSPECTION

- A. Notify Engineer when excavations have reached required subgrade.
- B. If Engineer determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Authorized additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- D. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

### 3.10 UNAUTHORIZED EXCAVATION

- A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.
  1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

### 3.11 STORAGE OF SOIL MATERIALS

- A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
  1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.
  2. Do not store in protection zones, 100-year floodplain, or wetlands, as identified on the plans.

### 3.12 TRANSPORT OF NATIVE MATERIALS OFFSITE

- A. If the Contractor encounters good materials (sand, gravel, topsoil, etc.) during the course of construction, he shall not be allowed to transport these materials offsite without the written approval of the Engineer. Wherever possible, suitable native sands and gravels shall be used as backfill rather than transporting them offsite and replacing them with non-native materials of a lesser quality.

### 3.13 STONE REFILL FOR TRENCH UNDERCUT

- A. In locations where soil at the bottom trench is unstable, the Contractor shall excavate (undercut) below the trench bottom and place stone refill as called for in the Section 2.

### 3.14 DIVERTING EXISTING SEWERS

- A. Where existing sewers or drains are encountered in the work, adequate provision shall be made for diverting flow in the existing sewers so that the excavation will be kept dry during the progress of the construction work. Upon completion of the construction work, the existing sewers shall be restored or otherwise provided with an adequate outlet as directed by the Engineer.

### 3.15 SHEETING, BRACING, SHORING

- A. Where required to properly support the surfaces of excavations to protect the construction work, adjacent work or workers, sheeting, bracing and shoring shall be provided. If the Engineer is of the opinion that at any point sufficient or proper supports have not been provided, he may order such additional supports at the expense of the Contractor, but neither the placing of such additional supports by the order of the Engineer nor failure of the Engineer to order such additional supports placed shall release the Contractor from his responsibility for the sufficiency of such supports and the integrity of the work. In removing the sheeting and bracing after the construction has been completed, special care shall be taken to prevent any caving of the sides of the excavation and injury to the completed work or to the adjacent property.

### 3.16 SHEETING LEFT IN PLACE

- A. Sheeting, bracing and shoring shall not be left in place after completion of the work except as required by the Engineer. Where sheeting, bracing, and shoring must be left in place in order to protect the work, adjacent structures, or property, it shall be cut off or left not less than two (2) feet below the established surface grade. If sheeting, shoring or bracing must be left in place, then it shall be paid for at the contract unit bid price that is shown on the Bid Form. If a pay item was not included on the Bid Form, then a work order shall be negotiated.

### 3.17 CROSSING EXISTING STRUCTURES AND PIPES

- A. During construction, it may be necessary to cross under certain sewers, drains, culverts, water lines, gas lines, electric conduits and other underground structures. Every effort shall be made to prevent damage to such structures. Wherever such structures are disturbed or broken, they shall be restored to good condition. Specified granular backfill shall be placed as described in the section pertaining to backfilling. MDOT Grade S3 concrete shall be utilized where directed by the Engineer at no additional cost to the project. Either granular backfill or concrete shall be brought to the spring line of the higher utility.

### 3.18 TUNNELING TREES

- A. Trees eight (8) inches in diameter or less will require a minimum tunnel length of eight (8) feet. Trees over eight (8) inches in diameter, measured four (4) feet above the ground surface, will require a minimum tunnel length equal to one foot for each inch of tree diameter.

Trees shall be tunneled whenever any portion of an excavation approaches within a distance equal to one-half the required tunnel length except as otherwise noted on the plans.

Tunneling under trees may be accomplished by one of the following:

- 1 Boring and jacking casing pipe along with placement of a carrier pipe.
- 2 Boring and jacking of sewer pipe or water main without a casing pipe.
- 3 Jacking sewer or water main without boring and without a casing pipe.

Plan notes or existing field conditions shall indicate which method may be used for the tree tunneling work.

### 3.19 BACKFILL

- A. Place and compact backfill in excavations promptly, but not before completing the following:

- 1 Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.
- 2 Surveying locations of underground utilities for Record Documents.
- 3 Testing and inspecting underground utilities.
- 4 Removing concrete formwork.
- 5 Removing trash and debris.
- 6 Removing temporary shoring and bracing, and sheeting.

- B. Place backfill on subgrades free of mud, frost, snow, or ice.

- C. Where called for on the plans, the CONTRACTOR shall backfill trenches and/or other excavations with suitable excavated material (not including gray or blue clay) replaced into the trench or excavation and compacted to not less than 95 percent of maximum unit weight as determined at existing moisture content during backfilling. Compaction shall be provided by means of suitable mechanical compaction equipment.

If the moisture content of cohesive backfill material exceeds the optimum moisture content for maximum density by more than three percent (3%), the CONTRACTOR shall dry the material to meet the foregoing moisture content limitation or provide, at his own expense, MDOT Granular Material Class III. No sloppy or wet backfill will be allowed.

Maximum unit weight will be determined by current methods of Test for Compaction and Density of Soil, AASHTO Designation T-180 or by the Cone Density Method developed by MDOT, as the material may require.

The ENGINEER shall make compaction tests at all locations requiring granular backfill.

Any depression resulting from settlement of any backfill prior to the date of final payment for all work under this contract shall be brought to the proper grade and surface and made to match the adjacent surface.

#### D. Compaction

Backfill material shall be placed in layers not to exceed 12 inches in thickness unless the contractor can demonstrate to the satisfaction of the Engineer that he can consistently attain the specified density on thicker lifts.

Specified compaction shall be obtained with the use of a bulldozer, sheepsfoot roller, mechanical tamper or other similar and effective equipment. Specified compaction means not less than 95 percent (not average 95 percent) of maximum unit weight when tested in accordance with current MDOT Specifications.

If excavated material is not suitable to obtain 95 percent minimum compaction, the CONTRACTOR shall, at his expense, remove unsuitable materials or add granular materials, or both, to obtain ninety-five percent (95%) minimum compaction as specified.

Compaction tests will be made by a representative of the OWNER and paid for by the OWNER, unless otherwise specified in the Contract Documents.

#### E. Backfilling Trenches

##### 1. Bedding

The type of bedding required is shown on the detail drawings.

Bedding shall be worked under the haunches of the pipe to provide firm continuous support.

Bedding placed on the sides of and above the pipe shall be compacted by machine tamping to not less than ninety-five percent (95%) of maximum unit weight in layers not exceeding 12 inches in depth.

##### 2. Trench or Excavated Area

All trenches in paved streets, shoulders, traveled roadways, parking areas and driveways shall be backfilled with suitable excavated backfill or granular backfill, as shown on the drawings from one (1) foot above top of pipe up to the required subgrade elevation which will allow for placement of the required gravel base and/or pavement surface. The approved excavated backfill or granular backfill shall be placed and thoroughly and uniformly compacted by machine tamping to the specified compaction. With the approval of the ENGINEER, water jetting may be accepted in lieu of tamping for granular backfill only.

Specified compaction shall be required of the entire trench when the edge of trench is within three (3) feet of edge of pavement. On road crossings, specified compaction shall extend ten (10) feet beyond the edge of pavement for paved roadways with gravel shoulders or shall extend three (3) feet beyond the back of curb for roadways with curb.

Trenches under concrete sidewalks and bike paths shall be backfilled from one foot above top of pipe to a level four (4) inches below finished grade of the sidewalk with approved suitable excavated backfill or granular backfill and compacted to ninety-five percent (95%) maximum density.

Trenches not in paved streets, shoulders, traveled roadways, parking areas, driveways or under sidewalks, shall be backfilled from one (1) foot above the top of the pipe up to the ground surface (except as noted under the Restoration Specification) with suitable excavated backfill and shall require compaction equal to adjacent undisturbed earth.

Wherever gas mains, water mains, sewers, or other utilities are located in the trench area, granular backfill shall be used for backfill from bottom of the trench up to the springline of the pipes. Granular backfill shall be placed across the full trench width and extend far enough either side of the existing pipe to allow specified compaction so as to thoroughly support the pipe within the trench area.

#### F. Backfilling Around Structures

As soon as practicable after concrete structures have set, forms and debris shall be removed and the surface of the concrete pointed. After the structure has been checked and approved, the excavated area around the structure shall be backfilled up to specified subgrade with granular material or suitable excavated material as called for on the drawings for the adjacent trench. The fill shall be thoroughly compacted by machine tamping. No large boulders or masonry shall be placed in backfill. No backfill will be placed against manhole walls within 48 hours after the plaster coat has been applied to the outside of the walls nor shall backfill be placed about concrete structures until concrete has attained at least 75 percent of its design strength and approval of the ENGINEER has been obtained.

### 3.20 PLACING AND COMPACTING EMBANKMENT

- A. Embankment material for fill work shall be in accordance with Section 2.08.10d of the MDOT Standard Specifications for Construction.

### 3.21 DISPOSAL OF EXCAVATED MATERIAL

- A. After all suitable excavated material has been used on site, the CONTRACTOR shall be responsible for properly removing and disposing of the excess.

The CONTRACTOR shall also be responsible for disposing of all other excavated materials that are unsuitable for use as fill or backfill. Unsuitable materials may include, but are not limited to, broken concrete, asphalt, rock, stone, and other related debris. The CONTRACTOR shall be required to obtain his own disposal areas and permits and shall receive no additional compensation for this disposal work.

Surplus or unsuitable material shall not be disposed of either temporarily or permanently beyond the plan grading limit line or across any wetland or flood plain unless the plans provide for such placement.

Any agreements that the CONTRACTOR makes with local residents concerning the placement of fill on private property shall be the sole responsibility of the CONTRACTOR. The OWNER will not become involved with any such agreements and will not be liable for damages that the CONTRACTOR may cause to private property.

Placement of fill on private property may require that the resident or CONTRACTOR obtain a grading permit or fill permit from the OWNER.

### 3.22 GRADING

- A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.
  2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.
- B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
1. Unpaved Areas: Plus or minus 1 inch.
  2. Walks: Plus or minus 1 inch.
  3. Pavements: Plus or minus 1/2 inch.
- C. Grading inside Building Lines: Finish subgrade to a tolerance of 1/2 inch when tested with a 10foot straightedge.
- D. Final Cleanup and Grading: Upon completion of the construction, and before final payment is made, the Contractor shall restore his working area to as clean a condition as existed before his operations were started. He shall go over the entire line and refill any place that may have settled. He shall then re-grade and put in shape all backfilled trenches, all fills he may have made from excess excavated materials, and all other areas that may have been disturbed through all operations.

### 3.23 SUBSURFACE DRAINAGE

- A. Subdrainage Pipe: As specified on drawings or per Owner standard.
- B. Drainage Backfill: Place subsurface drainage geotextile around perimeter of subdrainage trench. Place a course of filter material on subsurface drainage geotextile equal to half the pipe diameter to support subdrainage pipe. Encase subdrainage pipe in a minimum of 12 inches of filter material, placed in compacted layers 6 inches thick, and extend in subsurface drainage geotextile, as noted on the plans.
1. Compact each filter material layer to 85 percent of maximum dry unit weight according to ASTM D 698 with a minimum of two passes of a plate-type vibratory compactor.

### 3.24 SUBBASE AND BASE COURSES UNDER PAVEMENTS AND WALKS

- A. Place subbase course and base course on subgrades free of mud, frost, snow, or ice.
- B. On prepared subgrade, place subbase course and base course under pavements and walks as follows:
1. Install separation geotextile on prepared subgrade according to plans and manufacturer's written instructions, overlapping sides and ends.
  2. Place base course material over subbase course under hot-mix asphalt pavement.
  3. Shape subbase course and base course to required crown elevations and cross-slope grades.
  4. Place subbase course and base course 6 inches or less in compacted thickness in a single layer.
  5. Place subbase course and base course that exceeds 6 inches in compacted thickness in

layers of equal thickness, with no compacted layer more than 6 inches thick or less than 3 inches thick.

6. Compact subbase course and base course at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 698 and ASTM D 1557.

### 3.25 FIELD QUALITY CONTROL

- A. Special Inspections: CONTRACTOR will engage a qualified special inspector to perform the following special inspections:
  1. Determine prior to placement of fill that site has been prepared in compliance with requirements.
  2. Determine that fill material and maximum lift thickness comply with requirements.
  3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.
- B. Testing Agency: CONTRACTOR will engage a qualified geotechnical engineering testing agency to perform tests and inspections.
- C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.
- D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

### 3.26 PROTECTION

- A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.
- B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.
  1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
  1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

### 3.27 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property.

### 3.28 CONTACTOR SAFETY REQUIREMENTS

The excavation and trenching operations shall be conducted by the CONTRACTOR in a manner that will provide safe working conditions for all persons on the site who may be affected by the Work. The CONTRACTOR shall also conduct his operations in a manner that will protect adjacent property from damage.

Trench sides shall be either cut back to the slope as necessitated by soil and ground water conditions which will provide stable sides, or supporting systems shall be installed that are capable of restraining the earth sides from movement. A qualified employee of the CONTRACTOR shall design the trench supporting systems.

The CONTRACTOR shall employ, at all times at the site of the work, a qualified person who will be responsible for the safety of both the work and workmen, and who will make all the decisions relevant to the stability of trenches, the adequacy of any and all protective devices, proper operation of equipment, and all other matters related to safety.

The CONTRACTOR shall not store, along and adjacent to the trench, excavated material, heavy equipment, backfill materials, sewer pipe, or other construction materials which may impose too great a load on the earth and cause displacement or caving of the earth. The CONTRACTOR shall, at all times, provide a safe means of emergency exit from all trench excavations

END OF SECTION 3120

## SECTION 3210 – BASES AND PAVING

### PART 1 - GENERAL

#### 1.01 DESCRIPTION

- A. Work shall include the furnishing of all labor, materials, tools, equipment, and services necessary for the restoration of the surfaces shown on the drawings and/or as herein required.
- B. Disposal of excess or unsuitable materials shall be considered as part of the work. All such work shall be in accordance with the best modern practice, the Owner's standards, and as specified herein. No permanent surface restoration shall be performed until all underground work has been approved.
- B. This Section includes the following:
  - 1 Aggregate base course.
  - 2 Bituminous surface, leveling and base courses.
  - 3 Concrete pavement, sidewalk, curb and gutter.

#### 1.02 SUBMITTALS

- A. Prior to performing work under this section, the Contractor shall submit to the Engineer for approval his construction methods and design mixes, sieve analysis, and/or certification of compliance with the 2003 Michigan Department of Transportation (MDOT) Standard Specifications for Construction except where otherwise noted.

#### 1.03 QUALITY ASSURANCE

- A. References to the Michigan Department of Transportation (MDOT) Specifications shall pertain to the 2003 Standard Specifications for Construction.

### PART 2- PRODUCTS

#### 1.01 AGGREGATE

- A. Gravel Approaches and Roads: Natural aggregate shall be used for gravel approach (driveways) and road construction and shall meet the requirements of MDOT 21 AA or MDOT 22A as shown in Table 902-1 of the MDOT Standard Specifications for Construction.

- B. Shoulders: Natural aggregate shall be used for shoulders and shall meet the requirements of MDOT 21 AA, 22A, or 23A as shown in table 902-1 of the MDOT Standard Specifications for Construction.
- C. Base Course: Natural aggregate shall be used for base course construction and shall meet the requirements of MDOT 21A, 21AA, or 22A as shown in table 902-1 of the MDOT Standard Specifications for Construction.

## 2.02 HOT MIX ASPHALT SURFACE, LEVELING and BASE COURSES

- A. Hot mix asphalt materials used for pavement construction shall meet the requirements of Section 501.02 of the MDOT Standard Specifications for Construction or the requirements of the controlling agency as called for on the construction plans.

## 2.03 CONCRETE PAVEMENT, SIDEWALKS, CURB AND GUTTER

- A. Concrete used for pavement, sidewalk, and curb and gutter construction shall meet the requirements of MDOT grade P1 concrete, or the requirements of the controlling agency as called for on the construction plans. Refer to Table 601-2 of the MDOT Standard Specifications for Construction.

## 2.04 PAVEMENT STRIPING

- A. Pavement Striping materials shall meet the requirements shown in Section 920 of the MDOT Standard Specifications for Construction.

## PART 3 - EXECUTION

### 3.01 GENERAL:

- A. The aggregate and pavement thicknesses shown in the following sections are intended to be a guideline for minimum thicknesses. Thicker sections may be required depending upon the requirements of the Owner or the controlling agency. In pavement restoration areas, all pavements shall be restored to the elevation and section that existed prior to construction.

### 3.02 GRAVEL SHOULDERS and APPROACHES

- A. Gravel shoulders and approaches shall be constructed as described in Section 307.03 of the MDOT Standard Specifications for Construction.
- B. Gravel shoulder construction shall consist of placement and compaction of MDOT 21AA limestone or MDOT 22A gravel on a suitable subgrade to form a minimum six (6) inch thick section. The 21AA limestone or 22A gravel shall be compacted to a minimum density of ninety-eight (98) percent of the maximum unit weight. In shoulder restoration areas, the restored shoulder shall match the existing shoulder width.
- C. Construction of gravel approaches shall consist of placement and compaction of MDOT 21AA limestone or MDOT 22A gravel on a suitable subgrade as called for on the drawings to form a minimum six (6) inch thick section. The 21AA limestone or 22A gravel shall be compacted to a minimum density of ninety-eight (98) percent of the maximum unit weight. In approach restoration areas, the restored approach width shall match the existing width.

### 3.03 GRAVEL ROADS

- A. Construction and restoration of gravel roads shall consist of placement and compaction of MDOT21AA limestone, MDOT 22A gravel, of MDOT 23A gravel as called for in the plans to form a minimum eight (8) inch thick section. The restored road width shall match the existing road width. Gravel roads shall be constructed as described in Section 306.03 of the MDOT Standard Specifications for Construction.

### 3.04 AGGREGATE BASE COURSES

- A. Aggregate base courses shall be placed and compacted to the thickness and width as called for on the plans and as described in Section 302.03 of the MDOT Standard Specifications for Construction. Unless otherwise indicated in the Contract Documents, aggregate base courses shall be compacted to a minimum density of ninety-eight (98) percent of the maximum unit weight.

### 3.05 SAWCUTTING

- A. All pavement, curb and gutter, and sidewalk removals shall be accomplished by sawcutting with a power-driven concrete saw. Sawcutting shall be full depth for all pavements (concrete, bituminous, concrete with bituminous overlay).
- B. In bituminous pavement, sawcut lines shall be parallel with pavement joints. Sawcuts shall not be nearer than five (5) feet to a transverse joint, to the center of pavement, or to the edge of pavement such that no existing or replacement pavement section shall be less than five (5) feet in width. If the proposed sawcut is nearer than five (5) feet to a joint or centerline of a pavement, then removal and replacement shall be extended to said joint or centerline.
- C. If an integral concrete curb is to be removed, then the minimum removal width shall be eighteen (18) inches.

### 3.06 HOT MIX ASPHALT (HMA) PAVEMENT

- A. Hot mix asphalt pavements shall be constructed in accordance with the plans and Section 502 of the MDOT Standard Specifications for Construction. Where new asphalt pavement is to adjoin existing asphalt pavement, a two (2) foot wide butt joint shall be constructed. A bond coat shall be applied to the existing pavement surface. Unless otherwise called for in the plan details, the following sections shall apply as a minimum.
  - 1 Bike Paths: 3-inch HMA over 4-inch MDOT 21AA aggregate base (with soil sterilant application)
  - 2 Residential driveways: 3-inch HMA over 6-inch MDOT 21AA aggregate base
  - 3 Commercial driveways: 4-inch HMA over 8-inch MDOT 21AA aggregate base; or 8-inch asphalt
  - 4 Residential streets: 4-inch HMA over 8-inch MDOT 21AA aggregate base; or 8inch asphalt
  - 5 Collector Road: 9-inch HMA over 6-inch MDOT 21AA aggregate base

- B. The laboratory density of HMA pavement shall be determined by the Marshall Procedure ASTM D-1559 using 50 blows on each of the specimens as the compactive effort. One set of three (3) specimens shall be made on the first day of placement and on subsequent days as determined by the Engineer.
- C. The measurement of field-compacted density shall be done with a nuclear gage. The percent of compaction obtained shall be determined by dividing the field-compacted density by the laboratory density and multiplying the result by 100. Unless otherwise indicated in the plan details or Contract Documents, all HMA pavements shall be compacted to a minimum calculated density of 97 percent.
- D. Density tests shall be taken on the completed pavement at a frequency of one test every 500 linear feet of paving lane, except for the last unit which will be 500 linear feet, plus any fractional unit less than 250 feet in length, or will be a fractional unit of 250 feet or more in length. Miscellaneous areas such as intersections, crossovers and widening lanes less than 250 feet long will be tested as directed by the Engineer.

### 3.07 CONCRETE PAVEMENT

- A. Concrete pavements shall be constructed in accordance with the drawings as well as Sections 602 and 801 of the MDOT Standard Specifications for Construction. Where new concrete pavement is to be anchored to old pavement, dowel bars and lane ties shall be installed in accordance with MDOT Standard Plans. Joints shall be installed in the new concrete pavement to match existing joint types and locations. Reinforcing steel shall be similar to that in the existing pavement and shall provide the same cross sectional area of reinforcement per foot as the existing pavement. Unless otherwise called for in the plan details, the following sections shall apply as a minimum:

- 1 Residential driveways: 6-inch non-reinforce concrete over 4-inch sand base
- 2 Commercial driveways: 8-inch non-reinforced concrete over 4-inch sand base
- 3 Residential streets: 8-inch non-reinforced concrete over 6-inch sand base
- 4 Collector road: 9-inch non-reinforce concrete over 6-inch sand base

### 3.08 CONCRETE SIDEWALK AND RAMPS

- A. Concrete sidewalks and ramps shall be constructed in accordance with the drawings and Section 803 of the MDOT Standard Specifications for Construction. Unless otherwise called for in the details, the following sections shall apply as a minimum:

- 1 Sidewalks: 4-inch concrete over 4-inch sand base
- 2 Sidewalks (at residential drive crossing): 6-inch concrete over 4-inch sand base
- 3 Sidewalks (at commercial drive crossing): 8-inch concrete over 4-inch sand base
- 4 Sidewalk ramps: 4-inch concrete over 4-inch sand base

3.09 CONCRETE CURB and GUTTER

- A. Concrete curb and gutter shall be constructed in accordance with the drawings and Section 802 of the MDOT Standard Specifications for Construction.

END OF SECTION 3210

## SECTION 3292 – NATIVE SEEDING

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

- A. This work shall consist of preparing the seedbed, seeding, and maintaining the seeded areas as indicated on the plans or as directed by the Engineer.
- B. All work shall be performed in accordance with Section 816 of the 2003 Michigan Department of Transportation Standard Specifications for Construction and the City of Ann Arbor Public Services Department Standard Specifications for Construction (Orange Book), and as specified herein. In the event that these specifications conflict, the more stringent requirements shall govern.
- C. An on-site meeting with the LANDSCAPE CONTRACTOR and the ENGINEER shall be scheduled by the ENGINEER prior to seeding.

#### 1.02 SUBMITTALS

- A. Within thirty (30) days after award of the contract the CONTRACTOR shall provide seed sources and documentation of species availability to the ENGINEER.
- B. The CONTRACTOR shall provide seed certificates containing the following information to the OWNER a minimum of one (1) month prior to the time of seeding:
  - 1. Botanical name, including cultivar and genotype, and common name.
  - 2. Net weight.
  - 3. Percentage of seed by weight.
  - 4. Purity of seed.
  - 5. Germination percentage.
  - 6. Amount of undesirable plant seeds present in mixture.
  - 7. Date of production.
  - 8. Date of packaging.
  - 9. Location of packaging.
  - 10. Name, address, phone number and contact name of supplier.
- C. The CONTRACTOR shall provide a small physical sample of the temporary erosion control blanket with the name, address, phone number and contact name of supplier, a minimum of one (1) month prior to the time of seeding.
- D. The CONTRACTOR shall not make substitutions if specified seed is not obtainable. Submit proof of non-availability to ENGINEER together with proposal for use of equivalent material. All substitutions for materials or execution shall be approved by the ENGINEER in writing a minimum of one (1) month prior to construction.
- E. The ENGINEER reserves the right to require a sample of substituted material(s) prior to approval for construction.

#### 1.03 QUALITY ASSURANCE

- A. Installation of seed shall be carried out by LANDSCAPE CONTRACTORS and their employees who are thoroughly experienced and skilled in the work and who are completely familiar with the specified requirements and methods needed for proper performance of the

work in this section. The LANDSCAPE CONTRACTOR shall have a minimum of five (5) years of documented experience in comparable work, particularly native wetland seed installation. Upon request, the contractor must supply documentation of such experience with at least three successful projects completed in the last five years. This documentation shall include at a minimum, the number of acres planted, year project was completed, along with the project name, contact person, phone number, and address.

- B. The CONTRACTOR shall warrant all plant material to be true to botanical name.
- C. All seed shall be inspected and approved by the ENGINEER prior to installation. The ENGINEER shall reserve the right to refuse any plant material that is unacceptable upon delivery to the site.

## PART 2 – PRODUCTS

### 2.01 SEED

- A. All materials shall meet the requirements of the 2003 Michigan Department of Transportation Standard Specifications for Construction and the City of Ann Arbor Public Services Department Standard Specifications for Construction (Orange Book), and as specified herein.
- B. Suppliers shall belong to the “Michigan Native Plant Producers Association,” and seed shall be Michigan Genotype, with the exception of temporary grasses and Elymus species, if Michigan Genotype is unavailable.
- C. The Contractor shall provide a fresh, clean, new crop seed along with a guaranteed statement of the composition of the mixture and the percentages of purity and germination of each variety. All seeds shall be packaged and kept dry and cool to ensure adequate protection against damage, and maintain dormancy while in transit, storage or during planting operations. Seed shall be less than one year old. Seed shall be stored as recommended by supplier. Seed exhibiting signs of extended periods of storage, excessive moisture, mold, decay, depredation or other physical damage will be unacceptable.
- D. All seed shall be delivered to the site in sealed containers and labeled, in compliance with the Federal Seed Act and Michigan Seed Law (P.A. 329, 1965). Large and small seed shall be delivered in separate containers.
- E. The seed mixtures and application rate shall be as shown on the plans, and consist of Slope Seed Mix, Detention Basin Seed Mix, and Wooded Wetland Seed Mix.
- F. Seed shall be free from weeds and undesirable plant species according to industry standards. Seed shall contain no federal or state listed noxious or invasive weeds, as determined by a standard purity test.
- G. No aggressive, threatened, endangered, or special concern species shall be in the seed mix.

### 2.02 TEMPORARY EROSION CONTROL BLANKET

- A. The CONTRACTOR shall provide erosion control net material constructed of heavy, woven jute mesh with plain weave of unbleached single jute yarn having openings of ¾-inch or less, with a fabric weight of 20 ounces per square yard or more, having high tensile strength and durability.
- B. Plastic poly-netting will not be allowed.

- C. Fasteners for jute mesh shall be 11 gauge steel wire, formed into a "U" shaped staple 6 inches long.

## 2.03 TOPSOIL

- A. Quantity: The CONTRACTOR shall be responsible for estimating the quantity of imported topsoil necessary to obtain the necessary depth of topsoil for planting. The approximate in-place quantity estimated on the plans is for information purposes only. The CONTRACTOR shall report any discrepancy between the estimate on the Plans to the ENGINEER.
- B. Imported topsoil shall be friable sandy loam capable of supporting optimal plant growth and development. It shall be free of clay lumps, subsoil, invasive weeds and seeds, stones, sticks and other extraneous materials.
- D. Analysis for existing and imported topsoil shall be done at the CONTRACTOR'S expense and shall be submitted to ENGINEER for approval prior to use. CONTRACTOR shall supply recommendations for starter fertilizer for both planting and seeding areas.
- E. The structural topsoil analysis for the wetland mitigation area shall include the following and be within the listed parameters:
  - Clay content: 5-10%
  - pH range: 6.0-7.0
  - Organic matter content: 5-20%
- F. The chemical soil analysis for the wetland mitigation area shall include the following and soils shall be adjusted with starter fertilizer based on the testing agencies recommendations:
  - Available Phosphorus
  - Exchangeable Potassium
  - Magnesium
  - Calcium
  - Cation Exchange Capacity
  - Percent Base Saturation of Cation Elements
  - Available Nitrogen
- G. The structural topsoil analysis for other areas shall include the following and be within the listed parameters:
  - Clay content: 5-15%
  - pH range: 6.0-7.5
  - Organic matter content: 2-5%
- H. The chemical soil analysis for other areas shall include the following and soils shall be adjusted with starter fertilizer based on the testing agencies recommendations:
  - Available Phosphorus
  - Exchangeable Potassium
  - Magnesium
  - Calcium
  - Cation Exchange Capacity
  - Percent Base Saturation of Cation Elements
  - Available Nitrogen
- I. Testing and recommendations for starter fertilizer for wetland mitigation area and other area

topsoil may be performed through A&L Great Lakes Laboratories, Inc., Fort Wayne Indiana 1.260.483.4759.

## 2.04 COMPOST

A. Compost shall be used only from City of Ann Arbor, available from WeCare Organics 1.734.477.0334, or approved substitution.

## PART 3 – EXECUTION

### 3.01 GENERAL

- A. Avoid soil compaction in seeding areas as much as possible. Equipment access and travel should be routed to limit repeat passes over the same area during all grading, topsoil application, and decompaction work. Equipment having low unit pressure ground contact should be utilized whenever possible. Prior to seeding, repair any ruts, rills or gullies greater than 2 inches in depth to create smooth continuous grades.
- B. Damage to restored areas resulting from storms, including major storms, settlement, or erosion shall be repaired by the Contractor, at the Contractor's expense.
- C. Temporary Erosion Control Blanket shall be installed by CONTRACTOR as shown on the plans and on any disturbed area with a slope steeper than 4:1, including access routes, and other areas where the ENGINEER determines it to be necessary for seed establishment. Blanket shall be secured with specified fasteners.

### 3.02 SEED INSTALLATION

- A. The seeding shall be done from April 1 to June 15 or from September 15 to first frost. Optimal wetland seeding time is October 1 through first frost to allow repeat freeze-thaw cycles to incorporate the seed into the substrate and provide cold stratification to break seed dormancy. The seeding must be complete before June 15 or after September 15 of a given calendar year.
- B. Seeding shall not occur between June 15 and September 15 except with special approval by the Engineer. Seeding that occurs during this time frame may require additional measures to protect seedlings until they are well established, at no additional expense to the City.
- C. Seeding shall not be performed during periods of any snow or ice cover. Winter seeding may be allowed during periods of thaw prior to refreezing, providing that areas of snow are no longer present. Seed shall not be placed in areas of standing or moving water.
- D. Do not apply seeds, seed mixtures, or slurries with seeds when wind conditions are such that materials would be carried beyond designated areas or materials would not be uniformly applied. Do not undertake seeding and planting activities during stormy weather when excessive precipitation may result in washing of seeds and plantings away from location intended. Do not install plant materials during periods of temperature extremes when atmospheric temperature may drop below 36 degrees F or rise above 90 degrees F.
- E. Seed installation method(s) will be approved by the Engineer prior to seed installation. Seed installation method(s) selected shall insure complete coverage of the areas to be seeded. Seed installation methods selected shall be dependent on the season of installation (*i.e.*, spring vs. fall) and shall be appropriate for the type of seed installed. If the seed is installed in the spring, large seed may be installed with a no-till drill or, if one is not available, shall be

broadcast followed by pressing the seed with a roller or cultipacker. If the seed is installed in the fall, the large seed may be broadcast without pressing since the frost heave experienced in the following winter will accomplish this.

- F. Seed installation method(s) shall insure good contact between seed and mineral soil. Scarify or loosen topsoil as necessary to bring it to the proper condition. Remove foreign matter larger than 1-inch diameter. Lightly rake or drag the topsoil in the planted area following seed application, resulting in no more than 1/8-inch cover over the seed.
- G. In no event shall the small seed be rolled or cultipacked since this seed requires surface sowing. Small seed shall be installed separately from the large seed and shall be mixed with a seed carrier to ensure proper distribution. A carrying agent such as vermiculite must be pre-approved by the Engineer. Sawdust and sand are inadequate carriers and will not be permitted.
- H. Hydro seeding will not be permitted.
- I. Break bulk seed mix down into smaller quantities for better management to provide even distribution over the site. The areas to be seeded shall be crossed twice, the second time shall be perpendicular to the first pass, to ensure even seed distribution.
- J. Seeding must be coordinated with topsoil placement, turf reinforcing mat, and erosion control blanket installation.
- K. Unless otherwise specified on the plans, on all disturbed areas including access routes to remain, the CONTRACTOR shall install a minimum of 4 inches of topsoil prior to seeding.

### 3.03 MAINTENANCE

- A. Maintenance shall include all measures necessary to establish and maintain vegetation in a vigorous and healthy growing condition.
- B. Maintenance of seeding shall begin immediately after provisional acceptance is granted and shall continue as required until final acceptance at the end of the warranty period. Maintenance required prior to provisional acceptance shall be included in the contract unit price for each plant.
- C. The Contractor shall promptly perform needed maintenance.
- D. The Contractor shall irrigate all seed adequately to maintain an optimum supply of moisture within the root zone. Reoccurring overly dry or wet conditions shall be grounds for rejection of plant material. Water shall come from a source approved by the Engineer. Water shall not be applied with a force that will displace the seed or mulch blankets or cause soil erosion, and shall not be applied so quickly that the seed or mulch blankets cannot absorb it. Water is to be supplied for plants that is clean, free from toxic amounts of salt, oil, acid alkali, organic matter or other substances harmful to plants.
- E. Watering seed during the establishment period shall be considered as incidental to the seeding work unless a pay item for watering and cultivating has been included in the Bid Form.
- F. The growing season is the period from April 1 to October 15 each year.

- G. Additional watering will be required during the first growing season to obtain the required plant cover, at no additional expense to the City. Soil moisture must be sufficient to stimulate germination and sustain viable plant growth. Once areas have been watered, watering must continue during the growing season to maintain optimal soil moisture. Water shall be applied to moisten the soil to a minimum depth of three inches, in a manner that does not cause erosion. It will be the Contractor's responsibility to furnish adequate equipment for watering and an appropriate source and supply.
- H. Restored areas shall be protected and maintained after seeding by watering correcting all erosion and settlement until acceptance by the Engineer.
- I. Maintenance of the seeding areas shall consist of the following: mowing (or weed-whacking) vegetation to prevent the flowering and seeding of perennial and annual weeds throughout the growing season; removing invasive species via hand pulling; spot seeding with species from the original seed mix; and other practices considered necessary by the Contractor (and approved by Engineer) to achieve the required conditions for final acceptance.
- J. Maintenance visits will include, but not be limited to, at least three times during the growing season, during which activities will be undertaken such as mowing or cutting the plants to 6"-8" when the plantings reach a 12"-18" height, and spot spraying and hand-pulling of undesirable plants. The contractor shall supply projected dates, times, and activities of maintenance visits to the ENGINEER at the beginning of each growing season. The maintenance visit activities shall be approved by the Engineer prior to the work.
- K. Any herbicide or pesticide intended for use on site must be approved by the ENGINEER prior to use.
- L. Herbicide shall have Glyphosate as the primary active ingredient, and shall be labeled for aquatic use. An aquatic-approved surfactant, such as Cygnet Plus, is required to increase adherence of herbicide to plant material.
- M. The applicator must have a certified pesticide applicator license (that includes the category of aquatic pest control) from the State of Michigan. Contractor shall submit previous work experience documentation of applicator and plant specialist for approval to the Engineer.
- N. The use of insecticide or fungicide is not recommended and will only be approved under extreme circumstances. Under no circumstance will insecticide application be allowed in areas where the risk of surface water contamination exists.

### 3.04 FINAL ACCEPTANCE AND WARRANTY

- A. The Contractor is responsible for establishing vigorous native plant cover by the end of the three year warrantee period.
- B. Provisional Acceptance will be granted upon the successful completion of all seeding and the Engineer's verification that all work has been installed in accordance with the Plans and Specifications. Final Acceptance will be granted at the end of the third full growing season following the seed installation.
- C. The Contractor shall establish a dense cover of specified species in all areas seeded under the contract. These areas shall be maintained until Final Acceptance of the work. For all seeded zones, the Engineer shall conduct warranty field inspections of all seeded areas at the end of the first and second growing seasons following seeding.

D. The Engineer and Contractor shall conduct the final acceptance inspections before the end of the Warranty period. Final acceptance will be granted if the erosion control fence has been removed and the seeded areas meet the following parameters:

- 1. Slope Seed Mix: 90% total cover
- 2. Detention Basin Seed Mix: 90% total cover
- 3. Wooded Wetland Seed Mix: 80% total cover

E. Within all seeded areas after the first full growing season, any bare areas with less than 30% cover by seeded species that are 30 square feet in size or greater shall be reseeded. These areas shall be reseeded as originally specified at no additional cost to the Owner.

F. Within all seeded areas after the Second full growing season, any bare areas with less than 50% cover by seeded species that are 30 square feet in size or greater shall be reseeded. These areas shall be reseeded as originally specified at no additional cost to the Owner.

G. Areas which do not meet the contract requirements for Final acceptance shall be reseeded within acceptable planting dates as directed by the Engineer. No additional payment will be made for reseeding.

H. The final acceptance of the seeding work will be made by the Engineer and the Contractor just before the warranty period expires. All seeding shall be established and the site shall be cleaned-up, prior to the inspection.

- 1. The final acceptance inspection of the seeding areas shall be made during September of the third growing season.
- 2. Areas that do not meet the contract requirements shall be reseeded to the original project specifications and within acceptable seeding dates as directed by the Engineer.

3.05 MEASUREMENT AND PAYMENT

A. The completed work shall be paid for at the contract unit price for the following contract items (pay items):

<u>CONTRACT ITEM</u>	<u>PAY UNIT</u>
Stabilize all disturbed areas with specified seed mixes .....	Lump Sum

B. Seeding will be estimated in place by percent complete meeting the specified standards, and shall include all labor, equipment, seed, water, Maintenance and Warranty as required to meet the requirements of this specification, providing a uniform, weed-free vegetation of the specified mixes.

C. Payment Schedule for the above items shall be as follows:

<u>Provisional</u> <u>Acceptance</u> 50%	<u>Second Full</u> <u>Growing Season</u> 25%	<u>Final</u> <u>Acceptance</u> 25%
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END OF SECTION 3292

## SECTION 3293 – NATIVE PLANTING

### PART 1 – GENERAL

#### 1.01 DESCRIPTION

- A. This work shall consist of planting preparation, bare root tree installation, container shrub installation, disposal of excess and/or unsuitable materials, maintenance and warranty, as indicated on the plans or as directed by the ENGINEER.
- B. All work shall be performed in accordance with Section 815 of the 2003 Michigan Department of Transportation Standard Specifications for Construction and the City of Ann Arbor Public Services Department Standard Specifications for Construction (Orange Book), the best modern practices such as the standards set forth by the American Association of Nurserymen, and as specified herein. In the event that these specifications conflict, the more stringent requirements shall govern.
- C. An on-site meeting with the LANDSCAPE CONTRACTOR and the ENGINEER shall be scheduled by the ENGINEER prior to planting any plant material.

#### 1.02 SUBMITTALS

- A. Within thirty (30) days after award of the contract the CONTRACTOR shall provide nursery sources and documentation of species availability for plant stock to the ENGINEER.
- B. The CONTRACTOR shall provide tree and shrub plant stock certificates containing the following information to the OWNER a minimum of one (1) month prior to the time of planting:
  - 1. Botanical name, including cultivar, and common name.
  - 2. Quantity
  - 3. Size
  - 4. Type (e.g., B&B, container, bare root, live stake)
  - 5. Origin (location grown and genotype)
  - 6. Name, address and phone number of supplier.
- C. The CONTRACTOR shall not make substitutions if specified landscape material is not obtainable. Submit proof of non-availability to ENGINEER together with proposal for use of equivalent material. All substitutions for materials or execution shall be approved by the ENGINEER in writing a minimum of one (1) month prior to construction. The ENGINEER reserves the right to require a sample of substituted material(s) prior to approval for construction.

#### 1.03 QUALITY ASSURANCE

- A. Installation of trees and shrubs shall be carried out by LANDSCAPE CONTRACTORS and their employees who are thoroughly experienced and skilled in the work and who are completely familiar with the specified requirements and methods needed for proper performance of the work in this section. The LANDSCAPE CONTRACTOR shall have a minimum of five (5) years of documented experience in comparable work, particularly bare root and native wetland plant installation. Upon request, the contractor must supply documentation of such experience with at least three successful projects completed in the last five years. This documentation shall include at a minimum, the number and type of plants installed, number of acres planted, year project was completed, along with the project name, contact person, phone number, and address.
- B. The CONTRACTOR shall warrant all plant material to be true to botanical name.

- C. All plant stock shall be inspected and approved by the ENGINEER prior to installation. The ENGINEER shall reserve the right to refuse any plant material that is unacceptable upon delivery to the site.

#### 1.04 DELIVERY, STORAGE, AND HANDLING

- A. Moving and storage of plant materials: CONTRACTOR shall take all precautions customary in good trade practice in preparing plants for moving. Workmanship that fails to meet the highest standards will be rejected.
  - 1. Spray deciduous plants in foliage with an approved antitranspirant immediately after digging to prevent dehydration.
  - 2. Legibly tag plants with botanical name and size in accordance with the standards of practice of the American Nursery and Landscape Association.
  - 3. Dig, pack, transport, and handle plants with care to ensure protection against injury. Fully protect plants from damage by sun, wind, drought, water and other injurious conditions during transportation to site and during temporary storage before planting.
  - 4. Inspection certificates required by law shall accompany each shipment invoice or order to stock and on arrival. The certificate shall be filed with the OWNER.
  - 5. No plant shall be bound with rope or wire in a manner that could damage or break the branches.
- A. Plant material delivery shall be the same day as planting. No plants shall be stored at the site without permission of the ENGINEER. Plants shall be carefully loaded and unloaded so as not to damage branching or root mass. Dropping of material will not be allowed. Plants in full leaf shall be thoroughly wetted down and completely covered with a wet tarp during transportation.
- B. All roots must be kept in a moist condition.
- C. Digging shall be done in the dormant season. Plant material which is poorly packed, or which arrives with the roots in a dry condition, as a result of improper packing, delay in transit, or from any other cause, will not be accepted. Stock shall be handled in such a manner that the roots shall remain intact, the branches unbroken, and the bark intact and not loosened from the wood. Stock shall be protected from drying and from temperatures below 50 degrees F and in excess of 90 degrees F prior to planting.

### PART 2 – PRODUCTS

#### 2.01 TREES AND SHRUBS

- A. Trees and shrubs shall be quality, nursery-grown stock with adequate root growth. Nursery stock shall meet the standards of the current edition of the American Standard for Nursery Stock as published by the American Association of Nurserymen, as well as the standards of Section 917 of the Michigan Department of Transportation Standard Specifications for Construction.
- B. Provide plants typical of their species or variety with normal, densely developed branches and vigorous, fibrous root systems. Provide only sound, healthy, vigorous plants free from insect pests, diseases, and physical injury. All plants shall have a fully developed form without voids and open spaces. Plants shall be in a moist, vigorous condition, free from dead wood, bruises, or other root or branch injuries.
- C. Balled and burlapped plants: dig balled and burlapped plants with firm, natural balls of earth of sufficient diameter and depth to encompass the fibrous and feeding root system necessary for full recovery of plant, provide ball sizes complying with the latest edition of the American Standard for Nursery Stock. Cracked or mushroomed balls are not acceptable.
- D. Container stock: grown in a container for sufficient length of time for the root system to have

developed to hold its soil together, firm and whole. No plants shall be loose in container. Container stock shall not be pot bound.

- E. All plants shall be nursery grown under climatic conditions similar to those in the locality of the project, for at least one year.
- F. Stock furnished shall be at least the minimum size indicated on the drawings. Larger stock is acceptable, at no additional cost and providing the larger plants will not be cut back to the size indicated on the drawings.
- G. The height of the tree, measured from the crown of the roots to the average height of the top of the tree, shall not be less than the minimum size designated in the plant list.
- H. No pruning wounds shall be present with a diameter of more than 1 inch and such wounds must show vigorous bark on all edges.
- I. Shrubs and small plants shall meet the requirements for spread and height indicated in the plant list.
  - 1. The measurements for height shall be taken from the ground level to the average height of the top of the plant and not the longest branch.
  - 2. Single stemmed or thin plants will not be accepted.
  - 3. Side branches shall be generous, well-trimmed, and the plant as a whole well-bushed to the ground.

## 2.02 BARE ROOT TREES

- A. All specified bare-root trees shall be well rooted with a dense, fibrous root system produced by being grown in an air-pruning and fertilization system that stimulates lateral production of an extensive fine root mat. Minimum height and caliper as shown on plans.
- B. Acceptable stock shall be Forrest Keeling Nursery RPM ® stock (1-800-356-2401) or other supplier of equivalent material approved in writing by the ENGINEER.

## 2.02 WEED BARRIER

- A. Synthetic, non-woven, needle punched fabric weighing 187 gm per m2 with a minimum grab tensile strength of 3.5 pound and permeability of 0.1 inch/second.

## 2.03 METAL FASTENERS

- A. Fasteners shall be 11 gauge steel wire formed into "U" shaped staples, 6 inches long.

## 2.04 TOPSOIL

- A. Quantity: The CONTRACTOR shall be responsible for estimating the quantity of imported topsoil necessary to obtain the necessary depth of topsoil for planting. The approximate in-place quantity estimated on the plans is for information purposes only. The CONTRACTOR shall report any discrepancy between the estimate on the Plans to the ENGINEER.
- B. Imported topsoil shall be friable sandy loam capable of supporting optimal plant growth and development. It shall be free of clay lumps, subsoil, invasive weeds and seeds, stones, sticks and other extraneous materials.
- D. Analysis for existing and imported topsoil shall be done at the CONTRACTOR'S expense and shall be submitted to ENGINEER for approval prior to use. CONTRACTOR shall

supply recommendations for starter fertilizer for both planting and seeding areas.

E. The structural topsoil analysis for the wetland mitigation area shall include the following and be within the listed parameters:

Clay content: 5-10%  
pH range: 6.0-7.0  
Organic matter content: 5-20%

F. The chemical soil analysis for the wetland mitigation area shall include the following and soils shall be adjusted with starter fertilizer based on the testing agencies recommendations:

Available Phosphorus  
Exchangeable Potassium  
Magnesium  
Calcium  
Cation Exchange Capacity  
Percent Base Saturation of Cation Elements  
Available Nitrogen

G. The structural topsoil analysis for other areas shall include the following and be within the listed parameters:

Clay content: 5-15%  
pH range: 6.0-7.5  
Organic matter content: 2-5%

H. The chemical soil analysis for other areas shall include the following and soils shall be adjusted with starter fertilizer based on the testing agencies recommendations:

Available Phosphorus  
Exchangeable Potassium  
Magnesium  
Calcium  
Cation Exchange Capacity  
Percent Base Saturation of Cation Elements  
Available Nitrogen

I. Testing and recommendations for starter fertilizer for wetland mitigation area and other area topsoil may be performed through A&L Great Lakes Laboratories, Inc., Fort Wayne Indiana 1.260.483.4759.

## 2.04 COMPOST

A. Compost shall be used only from City of Ann Arbor, available from WeCare Organics 1.734.477.0334, or approved substitution.

## PART 3 – EXECUTION

### 3.01 TOPSOIL PLACEMENT AND FINE GRADING

A. The Contractor shall be responsible for layout of all topsoil mounds. The contractor shall contact the Engineer after topsoil mound layout is complete for field review. The Engineer reserves the right to adjust topsoil mound locations, without adjusting topsoil quantities, to meet field conditions, at no additional cost to the Owner.

B. Topsoil mounds shall be placed according to the drawings and maintained until time of tree planting. Contractor is responsible for providing adequate in place topsoil to plant the trees and shrubs as specified.

### 3.02 PLANT LAYOUT

- A. The Contractor shall be responsible for layout of all plants. The contractor shall contact the Engineer after plant layout is complete for field review. The Engineer reserves the right to adjust plant material locations, without adjusting plant quantities, to meet field conditions, at no additional cost to the Owner.

### 3.03 PLANTING SCHEDULE

- A. The bare root plants must be installed between March 1 and May 15 or October 15 and November 15, except with written permission of the ENGINEER.
- B. The container plants must be installed between May 1 and June 15 or October 1 and November 15.
- C. At the time of planting wetland areas, it is expected that soil moisture will be at or near saturation. The CONTRACTOR is responsible for planting under favorable weather conditions and recommended season for plant survival and establishment.

### 3.04 DAMAGED AREAS

- A. The CONTRACTOR must take every precaution to minimize rutting and damage to areas where work is not specified. All damaged areas, as determined by the Engineer, shall be regraded, reseeded and replanted as specified.

### 3.05 EXCAVATION

- A. If hand-held rotating augers or other mechanical diggers are used to excavate holes, the vertical sides of the pits shall be scarified, fractured, or otherwise broken down to eliminate impervious surfaces. Excavated soil must be consolidated adjacent to the planting pits and not spread over adjacent areas where work is not specified.
- B. Installation of all plant material shall be in accordance with the standards set forth by the American Association of Nurserymen.

### 3.06 GEOTEXTILE WEED BARRIER

- A. Immediately following planting at the site, install a 3 foot x 3 foot (minimum) section of fabric around all shrubs and anchor with a minimum of 9 metal fasteners (1.5 foot on center) per plant. The fabric shall be one piece and shall only contain one cut to facilitate installation around the plant. Overlap cut edges by 3 inches and anchor with metal fasteners.

### 3.07 STAKING

- A. Staking shall be as shown on the plans.

### 3.08 MAINTENANCE

- A. Maintenance shall include all measures necessary to establish and maintain plants in a vigorous and healthy growing condition.
- B. Maintenance of plantings shall begin immediately after provisional acceptance is granted and shall continue as required until final acceptance at the end of the warranty period. Maintenance required prior to provisional acceptance shall be included in the contract unit price for each plant.

- C. The Contractor shall promptly perform needed maintenance.
- D. The Contractor shall irrigate all plants adequately to maintain an optimum supply of moisture within the root zone. Reoccurring overly dry or wet conditions shall be grounds for rejection of plant material. Watering and cultivating shall be performed in accordance with Section 815 of the 2003 MDOT Standard Specifications for Construction. Water shall come from a source approved by the Engineer. Water shall not be applied with a force that will displace mulch or cause soil erosion, and shall not be applied so quickly that the mulch and plants cannot absorb it.
- E. Watering and cultivating trees and shrubs during the establishment period shall be considered as incidental to the tree and shrub planting work unless a pay item for watering and cultivating has been included in the Bid Form. Water is to be supplied for plants that is clean, free from toxic amounts of salt, oil, acid alkali, organic matter or other substances harmful to plants.
- F. Stakes and guys shall be adjusted or replaced as required during the first year, then removed by the Contractor.
- G. The Contractor shall remove and replace dead and unacceptable plants as their condition becomes apparent at his/her sole expense.
- H. Selective weed control by hand weeding shall be done if competition threatens the establishment of plantings.
- I. Any herbicide or pesticide intended for use on site must be approved by the ENGINEER prior to use.
- J. Herbicide shall have Glyphosate as the primary active ingredient, and shall be labeled for aquatic use.
- K. The applicator must have a certified pesticide applicator license (that includes the category of aquatic pest control) from the State of Michigan. Contractor shall submit previous work experience documentation of applicator and plant specialist for approval to the Engineer.
- L. The use of insecticide or fungicide is not recommended and will only be approved under extreme circumstances. Under no circumstance will insecticide application be allowed in areas where the risk of surface water contamination exists.

### 3.09 FINAL ACCEPTANCE AND WARRANTY

- A. Provisional Acceptance will be granted upon the successful completion of all tree planting operations and the Engineer's verification that all work has been installed in accordance with the Plans and Specifications. Final Acceptance will be granted at the end of the third full growing season following the tree installation.
- B. After receiving a Notice of Provisional Acceptance, all trees and shrubs shall be maintained in a vigorous condition and warranted against defects including death, improper maintenance, and unsatisfactory growth until:
  1. October 15<sup>th</sup>, of the year which is two years following the plantings, for fall plantings, or
  2. June 15<sup>th</sup>, of the year which is two years following the plantings, for spring plantings.
- C. The plants will be inspected by the Engineer for a two year establishment period following installation. Any plants that did not survive will be replaced by the contractor at no additional

cost. Replacement plants and planting operations shall be in accordance with the original specifications. Replacements shall be made no later than the next succeeding planting season. Fully restore areas damaged by replacement operations to their original and specified condition.

- D. The Engineer and Contractor shall conduct the final acceptance inspections before the end of the Warranty period. Final acceptance will be granted when, in the opinion of the Engineer, all trees are growing and are in a healthy condition.
- E. Final Acceptance Inspection. - The final acceptance inspection of the tree work will be made by the Engineer and the Contractor just before the warranty period expires. All trees shall be growing and in a healthy condition. The site shall be cleaned-up, prior to the inspection.
  - 1. The final acceptance inspection of the trees shall be made during September of the third year.
  - 2. Trees that do not meet the contract requirements shall be replanted as originally described in the original project specifications and within acceptable planting dates as directed by the Engineer.
- F. Upon completion of plant installation, remove from the site and legally dispose of all trash and debris including any material removed during construction. Restore existing wetland and upland areas damaged by operations under the contract.

3.10 MEASUREMENT AND PAYMENT

- A. The completed work shall be paid for at the contract unit price for the following contract items (pay items):

<u>Contract Item</u>	<u>Pay Unit</u>
Bare-root trees with a dense, fibrous, air-pruned root system, 4 foot height and ½-inch caliper .....	Each
Shrubs, 2 gallon container size .....	Each

- B. Trees will be measured in place and paid by each and shall include all labor, equipment, materials, water, maintenance and warranty as required to meet the requirements of this specification.
- C. Payment schedule for each of the above items shall be as follows:
  - 1. Provisional Acceptance - After the initial installation of the trees, 50% of each unit price shall be certified for payment.
  - 2. After the Second full growing season, and when all the above referenced criteria have been met, an additional 25% of each unit price shall be certified for payment.
  - 3. Final Acceptance - After the Third full growing season, and when all the above referenced criteria have been met, an additional 25% of each unit price shall be certified for payment. This payment shall constitute 100% and final payment.

END OF SECTION 3293