

CITY OF ANN ARBOR
INVITATION TO BID



WEST PARK BANDSHELL DEMOLITION

ITB No. 4791

Due Date: JULY 9, 2026 at 2:00 PM (Local Time)

City of Ann Arbor
Community Services Area/ Parks and Recreation Services

Issued By:

City of Ann Arbor
Procurement Unit
301 E. Huron Street
Ann Arbor, MI 48104

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ATTACHMENTS

City of Ann Arbor Vendor Conflict of Interest Disclosure Form
City of Ann Arbor Non-Discrimination Ordinance Declaration Form and Notice
City of Ann Arbor Living Wage Ordinance Declaration of Compliance and Notice
City of Ann Arbor Prevailing Wage Declaration of Compliance

INSTRUCTIONS TO BIDDERS

General

The purpose of this Invitation to Bid (ITB) is to select a firm to provide construction services for the demolition of the West Park Bandshell. Work for this project involves the removal of the existing park shelter, wood retaining wall and stamped concrete path, as well as installation of a new HMA path and landscaping.

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 and should be completed within 224 days from the Notice to Proceed. Liquidated damages of five hundred dollars per day (\$500/day) will apply.

Any Bid which does not conform fully to these instructions may be rejected.

Preparation of Bids

Bids should be prepared providing a straight-forward, concise description of the Bidder's ability to meet the requirements of the ITB. Bids shall be written in ink or typewritten. No erasures are permitted. Mistakes may be crossed out and corrected and must be initialed and dated in ink by the person signing the Bid.

Bids must be submitted on the "Bid Forms" provided with each blank properly filled in. If forms are not fully completed it may disqualify the bid. No alternative bid will be considered unless alternative bids are specifically requested. If alternatives are requested, any deviation from the specification must be fully described, in detail on the "Alternate" section of Bid form.

Each person signing the Bid certifies that he/she is the person in the Bidder's firm/organization responsible for the decision as to the fees being offered in the Bid and has not and will not participated in any action contrary to the terms of this provision.

Bid Security

Each bid 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.

Questions or Clarification / Designated City Contacts

All questions regarding this ITB shall be submitted via email. Emailed questions and inquiries will be accepted from any and all prospective Bidders in accordance with the terms and conditions of the ITB.

All questions shall be due on or before **June 29, 2026 @ 5:00 p.m.** and should be addressed as follows:

Specification/Scope of Work questions emailed to Madison Merzlyakov,
mmerzlyakov@a2gov.org

Bid Process and Compliance questions emailed to Colin Spencer, CSpencer@a2gov.org

Any error, omissions or discrepancies in the specification discovered by a prospective contractor

and/or service provider shall be brought to the attention of Colin Spencer at cspencer@a2gov.org after discovery as possible. Further, the contractor and/or service provider shall not be allowed to take advantage of errors, omissions or discrepancies in the specifications.

Addenda

If it becomes necessary to revise any part of the ITB, notice of the Addendum will be posted to Michigan Inter-governmental Trade Network (MITN) www.mitn.info and/or City of Ann Arbor web site www.A2gov.org for all parties to download.

Each Bidder must in its Bid, to avoid any miscommunications, acknowledge all addenda which it has received, but the failure of a Bidder to receive, or acknowledge receipt of; any addenda shall not relieve the Bidder of the responsibility for complying with the terms thereof.

The City will not be bound by oral responses to inquiries or written responses other than written addenda.

Bid Submission

All Bids are due and must be delivered to the City of Ann Arbor Procurement Unit on or before **July 9, 2026, at 2:00 p.m. (Local time)**. Bids submitted late or via oral, telephonic, telegraphic, electronic mail or facsimile **will not** be considered or accepted.

Each Bidder must submit one (1) original Bid, one (1) Bid copy and one (1) USB drive that contains a scanned copy of the paper bid submission in a sealed envelope clearly marked: ITB No. 4791 – West Park Bandshell Demolition.

Bids must be addressed and delivered to:

City of Ann Arbor
Procurement Unit,
c/o Customer Services, 1st Floor
301 East Huron Street
Ann Arbor, MI 48104

All Bids received on or before the Due Date will be publicly opened and recorded immediately. No immediate decisions are rendered.

The following forms provided within this ITB Document should be included in submitted bids.

- **Vendor Conflict of Interest Disclosure Form**
- **City of Ann Arbor Non-Discrimination Ordinance Declaration of Compliance**
- **City of Ann Arbor Living Wage Ordinance Declaration of Compliance**
- **City of Ann Arbor Prevailing Wage Declaration of Compliance**

Bids that fail to provide these forms listed above upon bid opening may be rejected as non-responsive and may not be considered for award.

Hand delivered bids may be dropped off to City Customer Service or in the Purchasing drop box located in the Ann Street (north) vestibule/entrance of City Hall which is open to the public Monday

through Friday from 8am to 5pm (except holidays). The City will not be liable to any Bidder for any unforeseen circumstances, delivery or postal delays. Postmarking to the Due Date will not substitute for receipt of the Bid. Each Bidder is responsible for submission of their Bid.

Additional time for submission of bids past the stated due date and time will not be granted to a single Bidder; however, additional time may be granted to all Bidders when the City determines in its sole discretion that circumstances warrant it.

Award

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 alternatives 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 unit prices and the lump sum 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 Bids, the City will give consideration to alternate Bids for items listed in the bid forms. All key staff and subcontractors are subject to the approval by the City.

Official Documents

The City of Ann Arbor officially distributes bid documents from the Procurement Unit or through the Michigan Intergovernmental Trade Network (MITN). Copies of the bid documents obtained from any other source are not Official copies. Addenda and other bid information will only be posted to these official distribution sites. If you obtained City of Ann Arbor Bid documents from other sources, it is recommended that you register on www.MITN.info and obtain an official Bid.

Taxes

Municipalities are exempt from Michigan State Sales and Federal Excise taxes. Do not include such taxes in the bid figure(s). The City will furnish the successful bidder with tax exemption certificates when requested.

Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of one-hundred and twenty (120) days.

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-2, Article III of the Contract. If these time requirements cannot 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.

Non-Discrimination Requirements

All contractors proposing to do business with the City shall satisfy the non-discrimination administrative policy adopted by the City Administrator in accordance with the Section 9:158 of the Ann Arbor City Code. Breach of the obligation not to discriminate shall be a material breach of the contract. Contractors are required to post a copy of Ann Arbor's Non-Discrimination Ordinance attached at all work locations where its employees provide services under a contract with the City.

Wage Requirements

The Attachments provided herein outline 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.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. Use of Michigan Department of Transportation Prevailing Wage Forms (sample attached hereto) or a City-approved equivalent will be required along with wage rate interviews.

For laborers whose wage level are subject to federal, state and/or local prevailing wage law the appropriate Davis-Bacon wage rate classification is identified based upon the work including within this contract. **The wage determination(s) current on the date 10 days before responses are due shall apply to this contract.** The U.S. Department of Labor (DOL) has provided explanations to assist with classification in the following resource link: www.wdol.gov.

For the purposes of this RFP the Construction Type of Heavy will apply.

Conflict Of Interest Disclosure

The City of Ann Arbor Purchasing Policy requires that prospective Vendors complete a Conflict of Interest Disclosure form. A contract may not be awarded to the selected Vendor unless and until the Procurement Unit and the City Administrator have reviewed the Disclosure form and determined that no conflict exists under applicable federal, state, or local law or administrative regulation. Not every relationship or situation disclosed on the Disclosure Form may be a disqualifying conflict. Depending on applicable law and regulations, some contracts may awarded on the recommendation of the City Administrator after full disclosure, where such action is allowed

by law, if demonstrated competitive pricing exists and/or it is determined the award is in the best interest of the City. A copy of the Vendor Conflict of Interest Disclosure Form is attached.

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. The Bidder shall not change or replace a subcontractor without approval by the City.

Debarment

Submission of a Bid in response to this ITB is certification that the Bidder is not currently debarred, suspended, proposed for debarment, and declared ineligible or voluntarily excluded from participation in this transaction by any State or Federal departments or agency. Submission is also agreement that the City will be notified of any changes in this status.

Disclosures

After bids are opened, all information in a submitter's bid is subjected to disclosure under the provisions of Michigan Public Act No. 442 of 1976, as amended (MCL 15.231 et seq.) known as the "Freedom of Information Act." The Freedom of Information Act also provides for the complete disclosure of contracts and attachments thereto except where specifically exempted.

Bid Protest

All Bid protests must be in writing and filed with the Purchasing Agent within five (5) business days of any notices of intent, including, but not exclusively, divisions on prequalification of bidders, shortlisting of bidders, or a notice of intent to award. Only bidders who responded to the solicitation may file a bid protest. The bidder must clearly state the reasons for the protest. If a bidder contacts a City Service Area/Unit and indicates a desire to protest an award, the Service Area/Unit shall refer the bidder to the Purchasing Agent. The Purchasing Agent will provide the bidder with the appropriate instructions for filing the protest. The protest shall be reviewed by the City Administrator or designee whose decision shall be final.

Any inquiries or requests regarding this procurement should be only submitted in writing to the Designated City Contacts provided herein. Attempts by a bidder to initiate contact with anyone other than the Designated City Contacts provided herein that the prospective bidder believes can influence the procurement decision, e.g., Elected Officials, City Administrator, Selection Committee Members, Appointed Committee Members, etc., may lead to immediate elimination from further consideration.

Cost Liability

The City of Ann Arbor assumes no responsibility or liability for costs incurred by the Bidder prior to the execution of a contract with the City. By submitting a bid, a bidder agrees to bear all costs incurred or related to the preparation, submission and selection process for the bid.

Reservation of Rights

The City of Ann Arbor reserves the right to accept any bid or alternative bid proposed in whole or in part, to reject any or all bids or alternatives bids in whole or in part and to waive irregularity and/or informalities in any bid and to make the award in any manner deemed in the best interest of the City.

Environmental Commitment

The City of Ann Arbor recognizes its responsibility to minimize negative impacts on human health and the environment while supporting a vibrant community and economy. The City further recognizes that the products and services the City buys have inherent environmental and economic impacts and that the City should make procurement decisions that embody, promote and encourage the City's commitment to the environment.

The City strongly encourages potential vendors to bring forward tested, emerging, innovative, and environmentally preferable products and services that are best suited to the City's environmental principles. This includes products and services such as those with lower greenhouse gas emissions, high recycled content, without toxic substances, those with high reusability or recyclability, those that reduce the consumption of virgin materials, and those with low energy intensity.

As part of its environmental commitment, the City reserves the right to award a contract to the most responsive and responsible bidder, which includes bids that bring forward products or services that help advance the City's environmental commitment. In addition, the City reserves the right to request that all vendors report their annual greenhouse gas emissions, energy consumption, miles traveled, or other relevant criteria in order to help the City more fully understand the environmental impact of its procurement decisions.

INVITATION TO BID

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 City Nondiscrimination requirements, Vendor Conflict of Interest Form, Living Wage requirements, Prevailing Wage requirements, Instructions to Bidders, Bid Forms, Purchase Order Terms and Conditions, General Conditions, Detailed Specifications, and all Addenda, and understands them. The Bidder declares that it conducted a full investigation 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 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.

In accordance with these bid documents, and Addenda numbered _____, the undersigned, as Bidder, proposes to deliver to the City all product/services herein described 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.

Bidder further agrees that the cited provisions of Chapter 14 and Chapter 23 form a part of this Contract.

The Bidder declares that it has become familiar with the City Conflict of Interest Disclosure Form and certifies that the statement contained therein is true and correct.

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 Bid shall become due and payable to the City.

If the Bidder enters into the Contract in accordance with this Bid, or if this Bid 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 _____, 202__.

Bidder's Name

Authorized Signature of Bidder

Official Address

(Print Name of Signer Above)

Telephone Number

Email Address for Award Notice

LEGAL STATUS OF BIDDER

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

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 Bid, is authorized to execute contracts.

NOTE: If not incorporated in Michigan, please attach the corporation's Certificate of Authority

• A limited liability company doing business under the laws of the State of _____, whom _____ bearing the title of _____ whose signature is affixed to this bid, is authorized to execute contract on behalf of the LLC.

* A partnership, organized under the laws of the state of _____ and filed in the county of _____, whose members are (list all members and the street and mailing address of each) (attach separate sheet if necessary):

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

Authorized Official

_____ **Date** _____, 202_

(Print) Name _____ Title _____

Company: _____

Address: _____

Contact Phone () _____ Fax () _____

Email _____

BID FORM

Section 1 – Schedule of Prices

VENDOR NAME: _____

BASE BID					
DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
1	General Conditions, Max. \$10,000	1	L Sum		
2	Digital Audio Visual Coverage	1	L Sum		
3	Pedestrian Type II Barricade, Temp, Furn & Oper	8	EA		
4	Erosion Control Inlet Protection, Fabric Drop	2	EA		
5	Erosion Control, Silt Fence	293	Lft		
6	Erosion Control, Mud Mat	45	Syd		
7	DS_Demolition & Disposal of Building (Scrap Value Not Incl.)	27,345	Cft		
8	DS_Asbestos & Lead Paint Abatement and Disposal - Allowance	1	L Sum		
9	HMA, Any Thickness, Rem	90	syd		
10	Construction Fencing and Pedestrian Traffic Control	1	L Sum		
11	Tree Protection Fence	184	Lft		
12	Storm Sewer Pipe, 8 In Dia., Rem	20	Lft		
13	Sanitary Sewer Pipe, 4 In. Dia. Rem	15	Lft		
14	Water Main Pipe, 1 In Dia, Abandon	50	Lft		
15	HMA Wearing Course, 1.5 In., 5E03	7	Ton		
16	HMA Base Course, 2.5 In., 4E03	11	Ton		
17	Aggregate Base, 6 In, 21AA, CIP	80	Syd		
18	Earth Excavation	481	Cyd		

19	Machine Grading	900	Syd		
20	Embankment	485	Cyd		
21	Dewatering	1	L Sum		
22	Non-Hazardous Contaminated Material Handling and Disposal	344	Cyd		
23	Project Clean-Up and Restoration	1	L Sum		
24	DS_Basin Planting Bed Preparation	405	Syd		
25	DS_White Oak (Quercus alba)	3	Ea		
26	DS_Tuliptree (Liriodendron tulipifera)	2	Ea		
27	DS_Bur Oak (Quercus macrocarpa)	1	Ea		
28	DS_Swamp Tupelo (Nyssa biflora)	1	Ea		
29	DS_Parkland Pillar White Birch (Betula platyphylla 'jefpark')	24	EA		
30	DS_Perennials/Sedges (2" Plant plugs)	4,450	EA		
31	DS_Ferns/Perennials/Sedges (1 Gal Pot)	950	EA		
32	DS_Upland Seed Mix w/ 4" Topsoil & Mulch	1,100	Syd		
33	DS_Turf Restoration w/ 4" Topsoil & Mulch	350	Syd		
34	Permits	1	L Sum		

Total Base Bid Amount: \$ _____

		ALTERNATES			
DESCRIPTION		QUANTITY	UNIT	UNIT PRICE	TOTAL COST
A1	Detailed Specifications_In lieu of Parkland Pillar White Birch (Betula platyphylla 'jefpark'), provide River Birch (Betula nigra). This cost REPLACES the cost listed for Line Item 29.	24	Ea		

Total Bid Amount w/ Alternates: \$ _____

BID FORM

Section 2 – Material, Equipment and Environmental 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.

If an environmental alternative is bid the City strongly encourages bidders to provide recent examples of product testing and previous successful use for the City to properly evaluate the environmental alternative. Testing data from independent accredited organizations are strongly preferred.

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
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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 _____ Date _____

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-2, 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 _____ Date _____

BID FORM

Section 4 – Major 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.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision to Section 4 of the General Conditions covering subcontractor's employees who perform work on this contract.

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

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

BID FORM

Section 5 – References

Please list at least three references with whom you have had similar contracts during the past three years.

- 1. Company or City _____
 Contact Name _____
 Telephone Number _____
 E-mail _____

- 2. Company or City _____
 Contact Name _____
 Telephone Number _____
 E-mail _____

- 3. Company or City _____
 Contact Name _____
 Telephone Number _____
 E-mail _____

SAMPLE STANDARD CONTRACT

If a contract is awarded, the selected contractor will be required to adhere to a set of general contract provisions which will become a part of any formal agreement. These provisions are general principles which apply to all contractors of service to the City of Ann Arbor such as the following:

CONTRACT

THIS CONTRACT is between the CITY OF ANN ARBOR, a Michigan Municipal Corporation, 301 East Huron Street, Ann Arbor, Michigan 48104 ("City") and _____
_____ ("Contractor")

(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 **ITB# 4791 West Park Bandshell Demolition** in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, all of which are incorporated as part of this Contract:

Non-discrimination and Living Wage
Declaration of Compliance Forms (if
applicable)
Vendor Conflict of Interest Form
Prevailing Wage Declaration of
Compliance Form (if applicable)
Bid Forms
Contract and Exhibits
Bonds

General Conditions
Standard Specifications
Detailed Specifications
Plans
Addenda

ARTICLE II - Definitions

Administering Service Area/Unit means **Community Services Area / Parks and Recreation Services**

Project means **ITB# 4791 West Park Bandshell Demolition**

Supervising Professional means the person acting under the authorization of the manager of the Administering Service Area/Unit. At the time this Contract is executed, the Supervising Professional is: **Adam Fercho** whose job title is **Park Planner & Landscape Architect**. If there is any question concerning who the Supervising

Professional is, Contractor shall confirm with the manager of the Administering Service Area/Unit.

Contractor's Representative means _____ [Insert name] whose job title is [Insert job title].

ARTICLE III - Time of Completion

- (A) The work to be completed under this Contract shall begin immediately on the date specified in the Notice to Proceed issued by the City.
- (B) The entire work for this Contract shall be completed within two hundred twenty-four (224) consecutive calendar days.
- (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 \$500.00 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.

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.

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 Form for the estimated bid 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. Increases or decreases shall be determined only by written agreement between the City and Contractor.

ARTICLE V - Assignment

This Contract may not be assigned or subcontracted any portion of any right or obligation under this contract without the written consent of the City. Notwithstanding any consent by the City to any assignment, Contractor shall at all times remain bound to all warranties, certifications, indemnifications, promises and performances, however described, as are required of it under this contract unless specifically released from the requirement, in writing, by 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 Contract, 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. The parties stipulate that the venue referenced in this Contract is for convenience and waive any claim of non-convenience.

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 Contract.

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. Notice will be deemed given on the date when one of the following first occur: (1) the date of actual receipt; or (2) three days after mailing certified U.S. mail.

ARTICLE IX - Indemnification

To the fullest extent permitted by law, Contractor shall indemnify, defend and hold 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. The provisions of this Article shall survive the expiration or earlier termination of this contract for any reason.

ARTICLE X - Entire Agreement

This Contract represents the entire understanding between the City and the Contractor and it supersedes all prior representations, negotiations, agreements, or understandings whether written or oral. Neither party has relied on any prior representations in entering into this Contract. No terms or conditions of either party's invoice, purchase order or other administrative document shall modify the terms and conditions of this Contract, regardless of the other party's failure to object to such form. This Contract shall be binding on and shall inure to the benefit of the parties to this Contract and their permitted successors and permitted assigns and nothing in this Contract, express or implied, is intended to or shall confer on any other person or entity any legal or

equitable right, benefit, or remedy of any nature whatsoever under or by reason of this Contract. This Contract may be altered, amended or modified only by written amendment signed by the City and the Contractor.

ARTICLE XI – Electronic Transactions

The City and Contractor agree that signatures on this Contract may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this Contract. This Contract may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

[Signatures on next page]

[INSERT CONTRACTOR NAME HERE]

CITY OF ANN ARBOR

By: _____

Name: _____

Title: _____

Date: _____

By: _____

Name: Milton Dohoney Jr.

Title: City Administrator

Date: _____

Approved as to substance:

By: _____

Name: Jordan Roberts

Title: Public Services Area
Administrator

Date: _____

Approved as to form:

By: _____

Name: Atleen Kaur

Title: City Attorney

Date: _____

(Signatures continue on following page)

CITY OF ANN ARBOR

By: _____

Name: _____

Title: Mayor _____

Date: _____

By: _____

Name: _____

Title: City Clerk _____

Date: _____

PERFORMANCE BOND

- (1) _____ (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 entitled _____, for RFP No. _____ 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.
- (6) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202__.

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Name and address of agent:

Atleen Kaur, 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 entitled _____

_____, for RFP No. _____; 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.
- (5) Principal, Surety, and the City agree that signatures on this bond may be delivered electronically in lieu of an original signature and agree to treat electronic signatures as original signatures that bind them to this bond. This bond may be executed and delivered by facsimile and upon such delivery, the facsimile signature will be deemed to have the same effect as if the original signature had been delivered to the other party.

SIGNED AND SEALED this _____ day of _____, 202_

(Name of Surety Company)
By _____
(Signature)
Its _____
(Title of Office)

(Name of Principal)
By _____
(Signature)
Its _____
(Title of Office)

Approved as to form:

Atleen Kaur, City Attorney

Name and address of agent:

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) Bid.

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.

Pursuant to Resolution R-16-469 all public improvement contractors are subject to prevailing wage and will be required to provide to the City payroll records sufficient to demonstrate compliance with the prevailing wage requirements. A sample Prevailing Wage Form is provided in the Appendix herein for reference as to what will be expected from contractors. Use of the Prevailing Wage Form provided in the Appendix section or a City-approved equivalent will be required along with wage rate interviews.

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.

If the Contractor is a "covered employer" as defined in Chapter 23 of the Ann Arbor City Code, the Contractor agrees to comply with the living wage provisions of Chapter 23 of the Ann Arbor City Code. The Contractor agrees to pay those employees providing Services to the City under this Contract a "living wage," as defined in Section 1:815 of the Ann Arbor City Code, as adjusted in accordance with Section 1:815(3); to post a notice approved by the City of the applicability of Chapter 23 in every location in which regular or contract employees providing services under this Contract are working; to maintain records of compliance; if requested by the City, to provide documentation to verify compliance; to take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee or person contracted for employment in order to pay the living wage required by Section 1:815; and otherwise to comply with the requirements of Chapter 23.

Contractor agrees that all subcontracts entered into by the Contractor shall contain similar wage provision covering subcontractor's employees who perform work on this contract.

Section 5 - Non-Discrimination

The Contractor agrees to comply, and to require its subcontractor(s) to comply, with the nondiscrimination provisions of MCL 37.2209. The Contractor further agrees to comply with the provisions of Section 9:158 of Chapter 112 of Title IX of the Ann Arbor City Code, and to assure that applicants are employed and that employees are treated during employment in a manner which provides equal employment opportunity.

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 its 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 I3. 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

- (1) 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 and the City from all claims for bodily injuries, death or property damage that may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor, any subcontractor, or anyone employed by them directly or indirectly. Prior to commencement of any work under this contract, Contractor shall provide to the City documentation satisfactory to the City, through City-approved means (currently myCOI), demonstrating it has obtained the required policies and endorsements. The certificates of insurance endorsements and/or copies of

policy language shall document that the Contractor satisfies the following minimum requirements. Contractor shall add registration@mycoitracking.com to its safe sender's list so that it will receive necessary communication from myCOI. When requested, Contractor shall provide the same documentation for its subcontractor(s) (if any).

Required insurance policies include:

- (a) 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

- (b) Commercial General Liability Insurance equivalent to, as a minimum, Insurance Services Office form CG 00 01 04 13 or current equivalent. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements specifically for the following coverages: Products and Completed Operations, Explosion, Collapse and Underground coverage or Pollution. Further there shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. 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 Project General Aggregate
 - \$1,000,000 Personal and Advertising Injury
 - \$2,000,000 Products and Completed Operations Aggregate, which, notwithstanding anything to the contrary herein, shall be maintained for three years from the date the Project is completed.

- (c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 10 13 or current equivalent. Coverage shall include all owned vehicles, all non-owned vehicles and all hired vehicles. The City of Ann Arbor shall be named as an additional insured. There shall be no added exclusions or limiting endorsements that diminish the City's protections as an additional insured under the policy. 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.

- (d) 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.

- (2) Insurance required under subsection (1)(b) and (1)(c) above 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 for any insurance listed herein.

- (3) Insurance companies and policy forms are subject to approval of the City Attorney, which approval shall not be unreasonably withheld. Documentation must provide and demonstrate an unconditional and un-qualified 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(s); name of insurance company(s); name and address of the agent(s) or authorized representative(s); name(s), email address(es), and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which may be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified Contractor shall furnish the City with satisfactory certificates of insurance and endorsements prior to commencement of any work. Upon request, the Contractor shall provide within 30 days a copy of the policy(ies) and all required endorsements 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 and endorsements to the Administering Service Area/Unit at least ten days prior to the expiration date.
- (4) Any Insurance provider of Contractor shall be 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 "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-authorized insurance companies are not acceptable unless approved in writing by the City.
- (5) City reserves the right to require additional coverage and/or coverage amounts as may be included from time to time in the Detailed Specifications for the Project.
- (6) The provisions of General Condition 28 shall survive the expiration or earlier termination of this contract for any reason.

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 authorized to transact business in Michigan and 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.

Section 43

CONTRACTOR'S DECLARATION

I hereby declare that I have not, during the period _____, 20___, 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.

STANDARD SPECIFICATIONS

Standard Specifications in effect at the date of availability of the contract documents stipulated in the Bid. 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.

Standard Specifications are available online:

<http://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

DETAILED SPECIFICATIONS

SECTION 00 01 10
INDEX

ALL CITY OF ANN ARBOR STANDARD SPECIFICATIONS ARE AVAILABLE IN THE FRONT END DOCUMENTS
AND ON THE CITY'S WEBSITE.

NUMBER SECTION NAME

DIVISION 1 – GENERAL REQUIREMENTS

01 33 00 Submittals
01 41 26 Permits

DIVISION 2 – EXISTING CONDITIONS

02 22 00 Color Audio-Video Route Survey
02 41 19 Selective Demolition
02 82 00 A Asbestos Remediation – Electrical Wiring
02 82 00 B Asbestos Remediation – Roofing
02 82 00 C Hazardous Material Surveys – Asbestos
02 28 00 D Hazardous Material Surveys – Lead

DIVISION 32 – EXTERIOR IMPROVEMENTS

32 91 19 DS_Landscape Grading
32 92 19 DS_Seeding
32 93 00 DS_Plants

END OF SECTION

SECTION 01 33 00

SUBMITTALS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes
 - 1. Requirements for Project submittals.
- B. Related Requirements
 - 1. Section 01 70 00 - Contract Closeout

1.2 PRICE AND PAYMENT PROCEDURES

- A. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this Section shall be factored into the other Contract bid prices.

1.3 ADMINISTRATIVE REQUIREMENTS

- A. The intent of the Contract Documents is to include in the Contract Price the cost of all labor and materials, water, fuel, tools, plant, equipment, light, transportation, and all other expenses as may be necessary for the proper execution and completion of the Work.
- B. While the Contract Drawings and Specifications propose to be complete in all respects as to layout, type of equipment and materials, they are not intended to serve as detailed sleeve or insert drawings, and the preparation of such drawings required or necessary for this purpose, or to set equipment accurately, shall be the responsibility of the Contractor.
- C. These Contract Documents shall be supplemented by other Drawings, product data, samples and portfolios of all equipment, apparatus, materials, etc. furnished by the Contractor and reviewed by the Engineer.
 - 1. All such supplementary Drawings or instructions are intended to be consistent with the Contract Documents, true developments thereof and reasonably inferable therefrom.
 - 2. No extra charge will be allowed on a claim that particular supplemental Drawings or instructions differed from the Contract documents, incurring extra work, unless the Contractor has first brought the matter, in writing, to the Engineer's attention for proper adjustment before starting on the Work covered by such and has received from the Engineer an order in writing to so proceed.
- D. These original and supplementary Drawings constitute the Drawings according to which the Work is to be done.
 - 1. Keep at the site of the Work, copies of all Drawings and Specifications and give the Engineer or Owner access thereto.
- E. Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. The purpose of these submittals is to demonstrate for those portions of the Work for which submittals

are required the way the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents.

- F. Review, approve, and submit to the Engineer, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents requested by the Engineer or Owner or otherwise necessary for the proper execution of the Work, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of separate contractors.
 - 1. Submittals made by the Contractor which are not required by the Contract Documents may be returned without action.
- G. Do not perform any portion of the Work requiring submittal, resubmittal, and review of Shop Drawings, Product Data, Samples, or similar submittals until the respective submittal has been reviewed by the Engineer.
 - 1. Such Work shall be in accordance with reviewed submittals.
- H. By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or contained within such submittals with the Work and of the Contract Documents.
- I. The Contractor shall not be relieved of responsibility for deviations from the Contract Documents by the Engineer's review of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Engineer in writing of such deviation at the time of submittal and the Engineer has given written approval to the specific deviation.
 - 1. The Contractor shall not be relieved of responsibility for errors or omissions in the Shop Drawings, Product Data, Samples or similar submittals by the Engineer's review thereof, as the Engineer's review is intended to cover compliance with the Contract Document and not to enter into every detail of the Shop Work.
- J. Direct attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those required by the Engineer on previous submittals.
- K. When professional certification of performance criteria of materials systems or equipment is required by the Contract Documents, the Engineer shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

1.4 SUBMITTALS

- A. Schedule for Submission
 - 1. Prior to submitting any Shop Drawings, product data, portfolios, samples, etc. prepare a summary, listing all items in the project that will be submitted for review by the Engineer.
 - 2. Submit summary within 20 calendar days after receipt of Notice to Proceed and update once per month thereafter.
 - 3. Include the proposed dates for submittal for each item for control purposes in summary. Prepare summary in coordination with the Project Schedule for Construction and allow adequate time for review and possible resubmittal.
 - 4. The summary and schedule for submittals shall not relieve the Contractor of their obligation to comply with Specification requirements for items not listed on the schedule.

5. Nothing in this Specification shall be construed as allowing additional time for completion of the project in the event resubmittal is required for Shop Drawings or the other items to be submitted.
- B. Submittal Procedures
1. Transmit each submittal with Engineer approved transmittal form.
 2. Sequentially number the transmittal form. Provide the original number and a sequential alphabetic suffix for all re-submittals.
 3. Identify Project, Contractor, subcontractor and supplier, pertinent drawing and detail number, and Specification Section number, as appropriate.
 4. Apply Contractor's stamp, signed or initialed certifying that review, verification of Products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the Work and Contract Documents.
 5. Schedule submittals to expedite the Project and deliver to the Engineer in a manner to allow sufficient time for review and processing by the Engineer to not cause delays in the Work. Coordinate submission of related items.
 6. Prepare and submit Drawings, information, and documentation with all words in the English language and dimensions in American units. No foreign language or metric units will be permitted.
 7. Identify variations from Contract Documents and Products and system limitations which may be detrimental to successful performance of the completed Work.
 8. Provide space for Contractor and Engineer review stamps.
 9. Revise and resubmit submittals as required and identify all changes made since previous submission.
 10. Distribute copies of reviewed submittals to all concerned and related parties. Instruct parties to promptly report any inability to comply with provisions.
 11. The Engineer reserves the right to refuse to check or review any submittal of a subcontractor or manufacturer which is not presented in compliance with the foregoing requirements.
 12. Electronic Submittals:
 - a. Provide all electronic submittals following the procedures outlined above.
 - b. Electronic submittal procedures are only applicable to Shop Drawings and product data submittals.
 - c. Provide electronic submittals in a standard format the Engineer has agreed in advance to accept, JPEG, TIF, DGN, DXF, DWG, or PDF.
 - d. Reviewed submittals will be returned in JPEG, TIF, or PDF electronic format for the Contractor's printing and distribution.
- C. Submittal Review
1. Directly receive all subcontractors and manufacturers' drawings and keep a record of the drawing numbers and the dates of receipt.
 2. Check thoroughly all such drawings, as regards measurements, sizes of members, materials, and all other details to assure that they conform to the intent of the Drawings and the Specification, and promptly return to the subcontractors or manufacturers for correction such drawings as are found inaccurate or otherwise in error.
 3. The Engineer will review the Contractor's, subcontractors,' and manufacturers' drawings within a reasonable time after receipt thereof and will return one copy endeavoring to indicate, by notation thereon or written instructions, any correction which may be necessary to meet the Contract requirements.

4. Review such notations and instructions and if they concur therein, make or have made such required corrections, and, when so noted on the drawings or requested by the Engineer, resubmit corrected drawings to the Engineer as soon as possible, for final review.
 5. Such further review by the Engineer will be limited to the corrections only, and the Contractor, by such re-submission shall be held to have represented that such drawings contain no other alterations, additions or deletions, unless the Contractor (in writing) directs the Engineer's specific attention to same.
 6. Should the Contractor question, or dissent from, such notations and instructions, they shall inform the Engineer and request further clarification before resubmitting the drawings.
 7. The review of Contractor's, subcontractors', and manufacturers' drawings by the Engineer is for coordination and assistance, and the Engineer does not thereby assume responsibility for errors or omissions. Such errors or omissions must be made good by the Contractor, irrespective of the receipt, review of the Drawings by the Engineer, and even though the Work is done in accordance with such Drawings.
- D. Proposed Products List
1. Within 15 days after date of Owner-Contractor Agreement submit list of all major products proposed for use, including those previously called for to be submitted in the Proposal, with name of manufacturer, trade name, and model number of each product.
 2. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
 3. Refer to Section 01 25 00 for Substitution request procedures.
- E. Product Data
1. Product data are illustrations, standard schedules, performance charts, instructions, catalog cuts, brochures, diagrams, materials lists, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.
 2. Submit two copies of the documents which the Engineer requires. One reviewed copy will be returned to the Contractor for duplication and distribution.
 3. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
 4. Bind product data with an index sheet containing a space at least 5 inches by 8 inches for review stamps and notes.
 5. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in Section 01 70 00 - Contract Closeout.
- F. Shop Drawings
1. Shop Drawings are drawings, diagrams, schedules other data specifically prepared for the Work by the Contractor or a subcontractor, Subcontractor manufacturer, supplier, or distributor to illustrate some portion of the Work.
 2. Submit in the form of two legible opaque copies.
 3. One reviewed copy will be returned to the Contractor for duplication and distribution.
 4. After review, produce copies and distribute in accordance with the submittal procedures Article in this Specification and for record documents purposes described in Section 01 70 00 - Contract Closeout.
- G. Samples

1. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 2. Submit samples of sufficient size and representative of finishes indicating textures, and patterns for Owner selection.
 3. Include identification on each sample, with full Project information.
 4. Submit the number of samples specified in individual Specification Sections; two of which will be retained by the Engineer.
 5. Reviewed samples that may be used in the Work are indicated in individual Specification Sections.
- H. Certificates
1. Manufacturer Certificates
 - a. When specified in individual sections, submit certification by manufacturer to Engineer, in quantities specified for Product Data.
 - b. Indicate material or Product meets or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 - c. Certificates may be recent or previous test results on material or Product but must be acceptable to the Engineer.
- I. Manufacturer Instructions
1. When specified in individual Specification Sections, submit printed instructions for delivery, storage, assembly, installation, start-up, operating, maintaining, and finishing to the Engineer in quantities specified for Product Data.
 2. Identify conflicts between manufacturer's instructions and contract documents.

PART 2 PRODUCTS

2.1 Not used.

PART 3 EXECUTION

3.1 Not used.

END OF SECTION

SECTION 01 41 26

PERMITS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes Permit documents that have been applied for the Owner. The Contractor is responsible for obtaining, purchasing required fees or deposits, and adhering to the rules, provisions, and specifications designed as part of the Permit Conditions. They are provided as information for the Contractor because the requirements and regulations contained in these documents shall be adhered to by the Contractor as they pertain to the work done under this Contract.
- B. Should any contradictions or discrepancies between the requirements of the Permits Section and other Sections of these Specifications be found, this section language shall have precedence.

1.2 PRICE AND PAYMENT PROCEDURES

- A. **PERMIT FEE ALLOWANCE.....UNITED STATES DOLLAR (DLR)**
The permit fee allowance specified by the Owner includes an allowed threshold dollar amount based on anticipated permit fee(s) from the applicable regulatory agencies. The Contractor shall be paid for the actual dollar amount of the secured eligible permits from the applicable regulatory agency(s) required to perform the work described in the contract, up to the fixed specified dollar amount listed in the Proposal provided by the Owner. The Contractor is responsible for any permit fee amount that exceeds the dollar amount allowance. The Contractor is not entitled to any unused dollar amount provided in the allowance.
- B. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this section shall be factored into the other contract bid prices.

1.3 REFERENCES

- A. Abbreviations and Acronyms Definitions
 - 1. AHJ – Authority Having Jurisdiction.
- B. Definitions
 - 1. Allowance - defined as a not-to-be-exceeded dollar amount, either individually or in the aggregate, which is established between the Owner and the Contractor as part of the bid documents when the precise scope of a particular line item(s) has not been defined to a level which is adequate for the Contractor to provide a definitive line item pricing for that particular scope of Work.
 - 2. Authority Having Jurisdiction (AHJ) - The local agency or authority responsible for enforcing codes and issuing permits.
 - 3. Permit - formal authorization in the form of a document issued by an Authority Having Jurisdiction (AHJ), such as a local government, county, state, or agency, that grants a

person or business the right to perform certain construction or transport activities within the agency's jurisdiction.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Permits: Obtain all the associated permits listed in this section. The Contractor is responsible for meeting all requirements to successfully obtain permits including any specified bonding requirements, insurance, preparing applications, and meeting all other permit requirements.
- B. Hydrant Use Permit, Backflow Preventer, Meter, and municipal Potable Water use: Where applicable, obtain all the associated permits listed in this section. Each jurisdiction overseeing the water distribution system may warrant the specific location of permitted hydrants, backflow preventor use, time and use of hydrant connections, and/or quantity of water. Factor in the cost of water in bid prices based on the availability, proximity, and use of municipal hydrants in accordance with the permit requirements.

1.5 CLOSEOUT SUBMITTALS

- A. Provide to the Owner and Engineer copy(s) of the secured Applicable Permit(s) with documentation of amount paid.

PART 2 PRODUCTS

- 2.1 Not Used.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Ensure all applications contain complete and accurate information, including project description, site plans, and specifications.

3.2 PREPARATION

- A. Obtain all necessary permits before initiating construction activities. This may require traveling, visiting AHJ offices or accessing online electronic application website modules in order to apply, file, and purchase permits .

3.3 PERMIT ACQUISITION

- A. Pay all applicable fees and charges required by authorities. Provide copies of all paid invoices as part of monthly pay applications.
- B. Post permits visibly at the project site as required by the issuing authority
- C. Comply with all conditions and requirements stipulated in each permit.

3.4 CLOSEOUT ACTIVITIES

- A. At the end of all construction activity included in the Contract, upon acceptance from the Owner, ensure all permits are closed out and approvals obtained upon completion of work.

3.5 ATTACHMENTS

- A. The following permits are required as part of the project.
1. Washtenaw County Soil Erosion Permit.
 2. City of Ann Arbor – Soil Erosion Control Permit.
 3. City of Ann Arbor – Wetland and Watercourse Use Permit
 4. City of Ann Arbor Demolition Permit.
 5. City of Ann Arbor – Inspection of Sanitary Disconnection and Water Service Removal.

END OF SECTION

SECTION 02 22 00

COLOR AUDIO-VIDEO ROUTE SURVEY

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes all work, materials, labor, and equipment necessary to provide a record of the existing conditions of the construction area prior to the start of construction using photographic methods.
- B. The Contractor is required to employ or subcontract services to a professional photographer or electrographer actively engaged in color-audio-video recordings of projects similar to the work included under this Contract.
- C. Products Furnished [OR] Supplied but Not Installed under This Section
 - 1. Color Audio-Video Route Survey for Pre-Construction Documentation.

1.2 PRICE AND PAYMENT PROCEDURES

- A. **Color Audio Video Route Survey.....LUMP SUM (LSUM)**
Media documentation of construction areas shall be paid for at the contract bid price per lump sum for the actual recordings and documentation of project areas described herein.

The following work items shall be included in the contract bid price per lump sum, unless otherwise described:
 - 1. Electronic Recording of the Construction Influence Area
 - 2. Media including video, still-images, and sound.
 - 3. Electronic Storage devices, labels, and transmittal descriptions.
 - 4. All additional items described herein as incidental to the work.
- B. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this Section shall be factored into the other Contract bid prices.

1.3 REFERENCES

- A. Abbreviations and Acronyms
 - 1. CIA – Construction Influence Area
- B. Definitions
 - 1. Construction Influence Area (CIA) - The project and the area surrounding the project, as shown on the Contract Drawings to define the limits of responsibility for construction work.
 - 2. Project Limits - The boundaries of the area in which the items under contract are being placed.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Prepare for the transmittal of all media, including media processing, editing, and labeling after the media contents are recorded.

1.5 SUBMITTALS

- A. Recording media of construction areas defined in the CIA prior to the start of construction.

1.6 CLOSEOUT SUBMITTALS

- A. Submit one electronic storage device containing the media described in this section. The record of contents must be furnished one week prior to the start of construction.
 - 1. All recording must be made using digital equipment such as portable USB 2.0 or 3.0 memory devices or full color audio-video DVD discs. One complete copy of the digital device provided and written records shall be provided to the Owner prior to start of construction.
 - 2. All DVD discs shall be properly identified as to location, time and date in a manner acceptable to the Owner.
 - 3. A record of the contents of each DVD disc shall be supplied by a sheet identifying each segment in the DVD disc by location, disc number, disc time, starting point, traveling direction and ending point.

1.7 QUALITY ASSURANCE

- A. The photographic and video recordings shall be done by a commercial photographic studio that regularly engages in the business of taking commercial photographs, videos, and other still-media.
- B. The Owner shall have the authority to designate areas for which coverage may be added or omitted and this shall be considered as incidental to the Contract.

1.8 FIELD OR SITE CONDITIONS

- A. Weather conditions vary. Perform the work in conditions that show existing conditions that are not adversely affected by snow accumulation, precipitation affecting camera quality, or flooding conditions.

PART 2 PRODUCTS

2.1 MATERIALS

- A. Portable computer memory device(s) must be USB. 2.0 standard or USB 3.0 with backward 2.0 compatibility.
- B. Digital audio-video discs (DVD) shall be Sony, Panasonic, J.V.C or equal on DVD discs, or portable storage device with USB. If DVD is used, they must be suitable for recording and play-back on computer DVD ROM players and conventional DVD players utilizing DVD R format.

2.2 EQUIPMENT

- A. Videographer shall have the equipment and experience necessary to produce a digital color-audio recording of the prescribed quality specified herein.
- B. Digital audio-video discs must be originally recorded with minimum horizontal resolution of 480 lines. Reprocessed DVD discs will not be acceptable.

2.3 ACCESSORIES

- A. General office supplies, labels, and filing products.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Identify the construction influence area to be surveyed in accordance with the Contract documents.

3.2 PREPARATION

- A. Prepare to mobilize equipment, stage equipment, and perform the work where weather will not adversely affect the result of documenting all existing conditions, such as snow accumulation, wind, rain, hail, dust storms, or other unfavorable weather.

3.3 APPLICATION

- A. The recording shall be done prior to placement of materials or equipment on the construction area
- B. Complete coverage shall include all surface features located within the public right-of-way, easement areas and adjacent private properties up to building line when such properties lie within the zone of influence of construction and will be supported by appropriate audio descriptions made simultaneously with video coverage. Such coverage shall include but not be limited to all existing driveways, sidewalks, curbs, ditches, roadways, landscaping, trees, culverts, mail boxes, headwalls, and retaining walls, or buildings located within such zone of influence.
- C. Coverage shall include the entire project area impacted by construction and any portions of streets to be used by the Contractor as access roads and/or haul roads.
- D. When conventional wheeled vehicles are used, the distance from the camera lens to the ground shall not be less than twelve (12) feet to insure proper perspective.
- E. In some instances, audio-video coverage will be required in areas not accessible by conventional wheeled vehicles. Such coverage shall be obtained by walking or special conveyance approved by the Owner.
- F. Identify buildings by street number, when visible, in such a manner that structures of the proposed system can be located by reference. In all instances, however, locations shall be identified by audio or visual means at intervals not-to-exceed 100 lineal feet in the general direction of travel.
- G. Reference Markers:
 - 1. To preclude the possibility of tampering or editing in any manner, all video recordings, must, by electronic means, display continuously and simultaneously generated transparent digital information to include the date and time of recording, as well as the corresponding engineering stationing numbers. The date information will contain the month, day and year; for example 10/5/96 and be placed directly below the time information. The time information shall consist of hours, minutes and seconds, separated

by colons. For example 10:53:18. This transparent information will appear on the extreme upper left-hand third of the screen.

2. The engineering stationing numbers must be continuous, accurate and correspond to the project stationing and must include the standard engineering symbols. For example 14+84. This transparent information will appear on the extreme area covered, direction of travel, viewing side, etc.
3. Below the engineering station, periodic transparent alpha/numeric information will appear. This information will consist of the name of the project, name of area covered, direction of travel, viewing side, etc.

3.4 FIELD OR SITE QUALITY CONTROL

- A. The rate of speed in the general direction of travel of the conveyance used during recording shall not exceed 30 feet/minute. Panning rates and zoom-in, zoom-out rates shall be controlled sufficiently such that stop-action during play-back will produce clarity of detail in the object viewed.
- B. All recording shall be done during times of good visibility. No recording shall be done during periods of visible precipitation, or when more than 10% of the ground area is covered with snow or standing water, unless otherwise authorized by the Owner.
- C. NON-CONFORMING WORK
 1. Any recorded coverage not acceptable to the Owner shall be rerecorded at no additional charge.

3.5 CLOSEOUT ACTIVITIES

- A. All digital recordings and written records shall become the property of the Owner. Provide all media produced to the Owner.

END OF SECTION

SECTION 02 41 19
SELECTIVE DEMOLITION

1.1 SUMMARY

- A. Section Includes:
 - 1. Demolition and removal of existing structures, materials, and systems indicated on the Contract Drawings.
 - 2. Demolition, removal, and disposal off-site of masonry block, brick rubble, concrete slabs on grade, and other debris.
 - 3. Demolition, abandonment, or removal of piping, equipment, wiring, and associated materials, unless disconnected, terminated and left-in-place, or left in operation.
 - 4. Disconnecting and capping of identified utilities.
- B. The Contract Drawings are not intended to indicate precise details of all interconnecting items to be removed nor exact locations of items for demolition and removal.
- C. This Section does not cover use of explosives devices or combustible materials for the purposes of demolition.
- D. Products Furnished OR Supplied but Not Installed under This Section
 - 1. Potable or Non-Potable Water for Dust Control.

1.2 PRICE AND PAYMENT PROCEDURES

- A. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this section shall be factored into the other contract bid prices.

1.3 REFERENCES

- A. Abbreviations and Acronyms Definitions
 - 1. ASTM – American Society for Testing and Materials
 - 2. OSHA – Occupational Safety and Health Administration
- B. Reference Standards
 - 1. OSHA 29 CFR 1926 Subpart M – Fall Protection
 - 2. ASTM D 4258 – Standard Guide for Demolition of Structures
 - 3. ASTM E 1739 – Standard Guide for Demolition Safety

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Secure all permits of from governing and regulatory agencies pertaining to the proposed demolition work.
- B. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.

1.5 SUBMITTALS

- A. Schedule of Demolition Plan (Document)

1. The time schedule established shall include the removal from the site of all material, debris, and Contractor's equipment.
 2. Detailed sequence of demolition and removal work.
 3. Name and contact information of proposed disposal locations.
- B. Photographic copy of the On-Site Poster board with the following posted information:
1. Safety Information
 2. Emergency procedures, contacts, and medical locations.
 3. Warnings, hazards, and personal protective equipment requirements.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements:
1. Conform to all applicable Federal, State, County, and local codes and ordinances for demolition of structures, safety of adjacent structures, dust control, runoff control, disposal, and erosion control.
 2. Submit Regulatory Notifications for demolition work to authorities as required to perform the Work.
 3. Obtain required permits from authorities.
 4. The cost of all permits shall be included as part of the bid.
 5. Notify affected utility companies before starting work and comply with their requirements.
 6. Pay all costs incurred with terminating or capping utility services on the site.
 7. If a particular utility company requires work to be done by their forces, the cost of this work shall be included in the base bid.
 8. Do not close or obstruct public roadways, sidewalks, and hydrants without permits.
- B. Other Requirements:
1. Demolition personnel experienced and trained in safe demolition practices.
 2. Demolition personnel trained in basic first aid.
 3. Perform all demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
 4. Use electronic communication devices to assist in coordination of demolition work between superintendents, fore-person, laborers, and equipment operators, especially in loud environments.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. The materials resulting from the demolition shall be considered turned over to the Contractor who shall assume full responsibility of, and liability for, the premises as though an Owner, immediately upon award of the Contract.
- B. The Contractor is responsible for all materials and equipment stored on the site pending disposal.
- C. All materials not mentioned herein as remaining the property of the Owner, shall become the property of the Contractor, and shall be removed from the premises.
- D. All rubbish and debris resulting from the demolition operations shall be removed promptly as accumulated.

- E. There shall be no selling of used materials at the site except as allowed by written permission from the Owner.

1.8 FIELD OR SITE CONDITIONS

- A. Ambient Conditions
 - 1. Weather conditions vary. Perform the work in conditions that show existing conditions that are not adversely affected by snow accumulation, precipitation, or flooding forecasted.
 - 2. Demolition work may create low-visibility in result of dust and airborne debris.
- B. Existing Conditions
 - 1. Existing conditions, including structural stability, cleanliness, integrity of material, age, and constructed materials of a structure and site conditions vary.
 - 2. Hazardous materials may exist in areas not visible by examination or subsurface locations.
 - 3. Coordinate utility terminations where applicable with the Owner.
 - a. The Contractor shall arrange for gas and electrical terminations with the local providers and Miss Dig as necessary to prepare the site for the demolition work.
 - 4. The items of demolition and removal shown are not necessarily intended to be a complete detail of each and every item of work.
 - 5. The Contractor is required to carefully review the Drawings for all trades, as well as examine the actual sites of the various items of work so that he may include all items of demolition and removal work under this section.
 - 6. The Owner does not guarantee that the work was constructed in accordance with any drawings that are available.
 - 7. The Contractor shall make his own independent determination of the work by visiting and surveying the work sites.
 - 8. All information relative to existing conditions is shown to assist the Contractor in evaluation of the work, but with no specific representation, either expressed or implied, as to completeness or accuracy. The Contractor shall be responsible for any deductions or conclusions made on the basis of this information and that of any additional site inspections, if made.
 - 9. Location of existing underground utilities and subsurface obstructions are shown using the best information available but with no representation that the indicated locations are accurate or that lines other than shown may not be present.
- C. Project Conditions
 - 1. The affected areas to be demolished shall be considered turned over to the Contractor who shall assume full responsibility of, and liability for, the premises as though an Owner, immediately upon award of the Contract. The Owner, however, reserves the right to enter the properties for inspection purposes at any time.
 - 2. Immediately after the contract is awarded, the Contractor will meet with the Owner's Engineer and prepare a schedule setting actual dates for starting and completion of the various parts of the work.
 - 3. The Contractor shall provide all toilet facilities required for the use of his personnel on the site. Any water, compressed air electric power, telephone, or other services required by this Contractor, will be furnished by him, the cost of which shall be included in his bid.
 - 4. Protection:
 - 5. Perform all demolition and removal work to prevent damage or injury to structures, occupants thereof and adjacent features which might result from falling debris or other

- causes, and so as not to interfere with the use, and free and safe passage to and from adjacent structures.
6. Closing or obstructing of roadways, sidewalks, and passageways adjacent to the work by the placement or storage of materials will not be permitted, and all operations shall be conducted with a minimum interference to traffic on these ways.
 7. Erect and maintain barriers, lights, sidewalk sheds, and other necessary protective devices.
 8. Repair damage to facilities to remain, or to any property belonging to the Owner or occupants of the facilities.
 9. It is the intent of this Section that the Demolition Work shall be complete whether or not specifically specified herein or shown on the Drawings, and all costs associated with the Demolition Work shall be included in the bid price.
 10. Explosives:
 11. The use of explosives will not be permitted.
 12. The premature breaking up and removal of public sidewalks, streets, and other related pavements is not a part of this contract.
 - a. The Contractor shall be responsible for the above items.
 - b. To assure minimum damage during period of demolition and removal of existing buildings, the Contractor shall protect same with heavy timbers, meeting Engineer's approval, or use other means meeting Engineer's approval to maintain existing and construction traffic patterns, as required.
 13. Upon removal of all protection materials from the above described property, all shall be intact and capable of use by the public or other trades without recourse to repairs, the expense of which, if necessary, will be paid by the Contractor.

PART 2 PRODUCTS

2.1 OWNER-FURNISHED OR OWNER-SUPPLIED PRODUCTS

- A. Potable or Non-potable Water for dust control – if provided, see related sections of the Contract.

2.2 EQUIPMENT

- A. Disposal Containers with tarps or covers.
- B. Provide all equipment, including machinery, hauling equipment, powered and hand tools, in order to perform the demolition work.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Identify, examine, and evaluate existing site conditions of proposed demolition shown on the Contract Drawings. The Contractor shall make his own independent determination of the work by visiting and surveying the work sites.
- B. Identify large trees, timbers, or other objects to protect from the demolition process. Existing trees on the site shall be protected against damage from operations governed by this work.

- C. Identify and handle hazardous materials (e.g., asbestos, lead paint, mold) in accordance with OSHA, EPA, and local regulations. Remove hazardous materials prior to general demolition, and dispose of them in approved facilities.
- D. Identify the location of existing underground utilities and subsurface obstructions.
- E. Assess and observe the present use and volume of traffic on adjacent roadways.

3.2 PREPARATION

- A. Notify authorities and occupants prior to commencement of demolition.
- B. Erect safeguards, barriers, and signage to protect adjacent areas and ensure safety.
- C. Disconnect utilities and connected services:
 - 1. Mark location of all utilities.
 - 2. The Contractor shall notify all corporations, companies, individuals, or local authorities owning conduits, wire, or pipes running to and on the property.
 - 3. The Contractor shall coordinate arrangements to cap all pipes and sewers scheduled for demolition at the curb line or property line, and removal of all wires running to or on the property.
 - 4. All gas services shall be terminated at the appropriate mains.
 - 5. Seal off all pipes with fittings comparable to the fittings on the respective pipe, i.e., blank flange, screwed cap or plug, welded plate, or cement plug. A closed valve shall not constitute a sealed off pipe.
 - 6. Existing telephone and electrical service to the buildings shall be removed in their entirety, back to the nearest service pole not conflicting with new construction.
 - 7. All water and electrical connections to be removed shall be removed by this Contractor.
 - 8. Where the respective utilities require that the work be done by their forces rather than the Contractor's forces, then the cost for same shall be included in the base bid.
 - 9. Protect and maintain all conduits, drains, sewers, pipes, poles and wires that are to remain on the property.
 - 10. Record the locations of abandoned and capped utilities in reference to dimensions, reference markers, or benchmarks, and depth provided on the Contract Drawings.
- D. Provide and install all necessary shoring and bracing required to support walls and other parts of existing buildings during demolition. All temporary fences, barricades, shoring, etc. not essential for the further protection of property or personnel at the completion of the demolition work shall be removed.
- E. Obtain written permission from adjacent property owners when demolition equipment will traverse, infringe upon or limit access to their property.

3.3 DEMOLITION

- A. Protect existing structures, finishes, and systems that are to remain.
- B. Perform demolition in accordance with the approved demolition plan. The materials resulting from the demolition shall be considered turned over to the Contractor who shall assume full responsibility of, and liability for, the premises as though an Owner, immediately upon award of the

Contract. The Owner, however, reserves the right to enter the properties for inspection purposes at any time.

1. In general, the indicated removal of a piece of equipment shall include all steel supports, interconnecting pipe, fittings, valves, miscellaneous devices and electrical conduit and wiring unless otherwise called for.
 2. When a piece of equipment or device is removed the piping, and/or electrical, shall be removed back to the main line. Piping shall be capped at the main. Electrical conduit and wiring shall be removed back to the point of distribution.
- C. Cease operations immediately if adjacent structures appear to be in danger. Notify Engineer immediately. Do not resume operations until permission has been granted by the Owner.
- D. Remove selected or total structures as indicated, carefully segregating hazardous and non-hazardous materials.
1. Unless noted otherwise, all existing fence within the sites shall be removed in its entirety, including foundations.
 2. After storm and sanitary drain lines are disconnected, the Contractor shall remove them.
 3. Existing plumbing fixtures, heating units, piping, radiators, and electrical utilities remaining in a structure to be demolished are to be removed.
 4. All masonry walls and existing foundations shall be removed.
 5. All columns and existing interior concrete and masonry walls are to be removed.
 6. Concrete curbs, raised concrete bases, etc., within interior or exterior to existing buildings at grade shall be removed.
- E. Demolish and remove materials, debris, and equipment from the site, disposing of materials in accordance with local regulations.
- F. Cleaning wastes (liquid or solid) shall be stored in container suitable for the type of material, tested and disposed of in an offsite facility that is appropriate for the type of tested material
- G. Separate recyclable materials for salvage and recycling. Dispose of non-recyclable debris in approved landfills or disposal facilities.
- H. Cover all disposal containers with a tarp or designated cover when not being actively used.
- I. Sprinkle the work area with water to minimize dust.
1. Provide hoses and water connections for this purpose.
 2. Contractor shall obtain a meter and backflow preventor from the local municipality and pay all fees related to rental of equipment and usage of water prior to final acceptance.

3.4 SELECTIVE OR PARTIAL DEMOLITION

- A. Restrict demolition to comply with the limits of removal as shown on the Contract Drawings. Conduct demolition to minimize interference with adjacent structures, occupancies, and roadways
- B. Protect adjacent members from any and all damage due to demolition operations.
- C. Sawcutting of concrete for removal shall stop at corners. Sawcutting shall not continue beyond limit of removal (corner) at either face of concrete.

3.5 DISPOSAL

- A. Dispose materials, debris, and equipment from the site, disposing of materials in accordance with local regulations.
1. Asphalt materials may be recycled or landfilled.
 2. Wood, Glass and Plastic: Wood, glass and plastics may be landfilled or recycled.
 3. Tanks, piping and miscellaneous metals shall be landfilled or recycled.
 - a. Tanks, piping and miscellaneous metals may be required to be cleaned, characterized, tested and disposed of in accordance with the characterization or tests as required by State or Federal regulations.
 4. Concrete may be crushed, recycled, or repurposed.
 5. Electric lamps and devices containing elemental mercury shall be managed as a universal waste under the requirements of R 299.9109 and R 299.9228 of the Part 111 rules and 40 CFR Part 2734 as overseen by the appropriate governmental agency.
 - a. Specific requirements for universal waste handlers, universal waste removal methods, storage and labeling of universal wastes, transportation of universal waste, and universal waste destination facilities.
 6. Ballasts containing PCB's shall be disposed of under the requirements of the Federal Toxic Substances Control Act (TSCA).
 - a. Ballasts shall be assumed to contain PCBs if it was manufactured prior to 1978 or the ballast does not contain the statement "No PCBs." Small capacitors with less than 3 pounds of fluid are generally not subject to TSCA disposal requirements. All leaking ballasts must be managed and disposed of as a PCB waste.
- B. Potentially hazardous materials should be screened in the field by qualified personnel for the presence of volatile organic compounds (VOC) using a photoionization (PI) meter.
1. It is assumed that the presence of VOCs should provide a general indicator of the presence of other potentially hazardous chemicals.
 2. Materials to be subjected to further laboratory analysis should be selected based on the results of the field screening and observations made by the person monitoring the demolition.
- C. The following hazardous or contaminated materials shall require disposal in a Type I or Type II landfill:
1. Electric and electronic devices containing rare and toxic metals or other harmful materials;
 2. Insulation or fibrous material that may contain asbestos;
 3. Material that emits a chemical or petroleum odor.
 4. Based on these observations, materials in question shall be stockpiled separately, inspected, and representative samples should be collected and screened in the field.
 5. Materials should be stored in a manner consistent with the suspected nature of the waste, at a secure location at the facility, designated by the Owner, until disposal is determined.
- D. Serial numbered and dated load tickets are required for all hazardous/contaminated material that leaves the construction site.
1. The tickets will be generated by the Owners representative, in triplicate.
 2. One ticket will be kept and two will be given to the driver.
 3. The load tickets will show the destination of the material.
 4. The load ticket and the facility invoice must be included with any request for payment.

5. These documents will be reconciled with the owner's copy of the load tickets before payment will be made to the contractor.
6. The manifesting system shall meet the requirements of the appropriate State and Federal regulations for the waste material.

3.6 BACKFILL AND FILLING OF VOIDS.

- A. All pits and subgrade areas to be backfilled shall be cleaned free of all rubbish and loose material, subject to Engineer's inspection and subsequently filled, as specified herein.
- B. All pit and basement slabs shall be removed prior to backfill. All pit and subgrade areas, as they exist, shall be backfilled in compacted layers not exceeding 6" in thickness with approved back run sand in their entirety.
- C. Sand backfill material must be accepted by the Independent Testing Laboratory prior to backfilling with a report indicating approval, submitted to the Owner's Engineer.
- D. All backfill material must meet 95% compaction, Modified Proctor, including bottom portion of fill as well as top layers. A representative of the Independent Testing Laboratory must be on the site continually during all phases of the backfilling operation to provide continuous inspection as well as tests.
- E. Individual tests shall consist of a minimum of one test per 1,000 sq. ft. per foot of lift in unconfined areas taken as a random pattern as the backfilling progresses or one test per foot of lift in each confined area 1,000 sq. ft. or less. All material shall be compacted to a minimum bearing value of at least 4,000 psf at optimum moisture.

3.7 FIELD OR SITE QUALITY CONTROL

- A. No materials shall be dropped or chuted from any height which might endanger personnel or adjacent property.
- B. Dynamite or other explosives shall not be used at any time in performing the work described herein.
- C. No open burning of debris and rubbish will be permitted.
- D. All dumpsters supplied by the Contractor for use during the project shall be covered with tarps at all time when not being actively used.

3.8 CLEANING

- A. Remove debris and dust regularly during demolition.
- B. Final cleanup to remove all demolition debris, leaving the site broom-clean.
- C. Repair any damage caused by demolition to adjacent finishes or systems.

3.9 MAINTENANCE

- A. Trucks hauling loose materials from or to the sites shall be tight and their loads trimmed to prevent spillage on public streets. Clean loose rock or soil debris entering public streets from truck traffic.

END OF SECTION

ASBESTOS REMEDIATION - Electrical Wiring

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes removal and disposal of asbestos-containing materials by full enclosure, glove bag, or entire structures methods as applicable. Demolition and debris removal of all asbestos-containing materials identified by provisions of this Section, or shown on drawings, or identified at the site, shall be executed under the provisions of this Section, and other applicable sections of these specifications.
- B. Extent of asbestos removal work is as follows:
 - 1. Electrical Wiring Insulation - Stage Lighting (Presumed Positive. May be removed from scope upon testing)

1.2 DEFINITIONS

- A. Asbestos Abatement Firm: Firm engaged to perform actual removal and disposal work, either as Contractor or subcontractor.
- B. Asbestos Containing Material: The term "asbestos containing material" is abbreviated ACM.
- C. Owner's Consultant: Firm engaged by Owner to identify and measure asbestos containing materials, or to inspect demolition operations, including monitoring of air quality.

1.3 SUBMITTALS

- A. Initial Submittals: Submit the following documents to Owner's Representative at the pre-abatement meeting:
 - 1. License from the State of Michigan in accordance with Act 135 P.A. 1986 (Asbestos Abatement Contractors Licensing Act).
 - 2. Copy of notification sent to appropriate federal, state, and local agencies.
 - 3. Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.
- B. Waste Disposition Submittals: Submit to owner signed waste shipment record stating that asbestos waste has been properly disposed. Submit the following:
 - 1. Receipts (trip tickets) from approved landfill.
 - 2. Asbestos Waste Shipment Record: As follows:
 - 1. Prior to removing asbestos-containing material from the project site, provide Owner's Representative or Owner's consultant with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.

2. Ensure that the landfill operator provides a signed copy of the waste shipment record to owner within 35 days of the date that asbestos-containing material is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
3. The Owner will not make final payment prior to receipt of signed waste shipment record.

1.4 QUALITY ASSURANCE

- A. Engage one of the following firms to perform abatement of asbestos containing materials:
 1. Adrian Environmental, LLC
 2. Certified Abatement Services, Inc.
 3. Environmental Maintenance Engineers, Inc.
 4. Environmental Specialty Services, Inc.
 5. Great Lakes Environmental Service, Inc.
 6. MIS Corporation-Michigan
 7. Next Generation Environmental, Inc.
 8. Pro-Tech Environmental, Inc.
 9. Professional Thermal Systems, Inc.
 10. Quality Environmental Services, Inc.
 11. Sloan Environmental Services, Inc.
 12. Trust Thermal Abatement, Inc.
- B. Regulatory Requirements: Make all necessary notifications to the appropriate federal, state, and local agencies.
 1. The National Emission Standards for Hazardous Air Pollutants (NESHAP), Asbestos regulation 40 CFR 61, Sub-Part M requires that if at least 80 lin. meters (260 lin. ft.) of friable asbestos materials, at least 15 sq. meters (160 square feet), or 1 cu. meter (35 cu. ft.) of friable asbestos materials, or other facility components are stripped or removed while renovating a facility, all the requirements of section 61.147 apply.
 2. When applicable, notify the Michigan Department of Environmental Quality (MDEQ), the Michigan Department of Licensing and Regulatory Affairs (MDLARA), and appropriate state and local regulatory agencies. No work shall be conducted without notification of authorities having jurisdiction.
- C. Pre-Abatement Meeting: Approximately 2 weeks prior to scheduled start of the abatement project, the Owner's Representative will hold a pre-abatement meeting with the individuals indicated below:
 1. Contractor representative.
 2. Asbestos Abatement Firm's representative.
 3. Owner's consultant.
 4. Owner's Representative.
 5. Owner's building maintenance personnel.
- D. The meeting agenda will include:
 1. Review of the scope of work.
 2. Removal methods to be used.
 3. Review of Contractor's initial submittals.
 4. A walk-through survey of the site, if appropriate.

- E. For small projects, the meeting may be suspended at the discretion of the Owner's Representative. If the meeting is suspended, deliver required initial submittals to the Owner's Representative's office 2 weeks prior to the start of work.

PART 2 - PRODUCTS (NOT APPLICABLE)

PART 3 - EXECUTION

3.1 ASBESTOS ABATEMENT, GENERAL

- A. Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to asbestos and other safety and health hazards.
 - 1. Asbestos abatement projects shall be directly supervised by a competent person as described in 29 CFR 1926.1101.
 - 2. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.
- B. Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:
 - 1. Water damage.
 - 2. Dirt, dust and debris.
 - 3. Abrasion.
 - 4. Cuts and scratches.
 - 5. Holes from fasteners for temporary barriers.
- C. All asbestos work shall be conducted within a regulated area that complies with the following requirements:
 - 1. Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that tenants, Owner's personnel, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.
 - 2. Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to Owner or the Owner's consultant.
- D. When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.
- E. Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.

1. Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be down-graded if negative exposure assessment indicates that less protection is required.
 2. A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, while glovebagging, and during pre-cleaning and post-cleaning work.
 3. Do not allow respirators to be pulled away from faces while in the work area.
 4. Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
 5. Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.
- F. Maintain at each job site and post the following documents:
1. Copy of MDEQ/MDLARA notification.
 2. Employee respiratory protection program.
 3. Michigan Right-To-Know poster.
 4. Material Safety Data Sheet locator.
 5. Company standard operating procedure.
 6. This specification Section.
 7. Material Safety Data Sheets for products used on job.
 8. CFR 1926.1101.
 9. CFR, Part 61 (NESHAP).
 10. The foreman's or supervisor's Contractor/Supervisor Accreditation Certificate.
 11. State of Michigan Accreditation Certificates and Medical Approval for each worker.
- G. Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:
1. Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
 2. Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
 3. Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.
 4. Establish a decontamination area, adjacent and connected to the regulated area, if the Project requires the removal of more than 25 lin. ft., or 10 sq. ft. of thermal systems insulation or surfacing ACM.
 5. Establish an equipment area adjacent to the regulated area if the Project requires the removal of less than 25 lin. ft. or 10 sq. ft. of thermal systems insulation or surfacing ACM.
- H. Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:
1. High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
 2. Blowing with compressed air to remove asbestos-containing materials.

3. Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
4. Employee rotation as a means of reducing employee exposure to asbestos.

3.2 ASBESTOS REMOVAL BY FULL ENCLOSURE METHOD

- A. Preparation of the Work Area: Complete the following preparation work prior to beginning asbestos removal operations:
 1. Install critical barriers over each opening into the regulated area. The following requirements are in addition to, not in lieu of, other indicated surface and object protection requirements:
 1. Seal each opening between the work area and adjacent areas with not less than 2 layers of 4-mil polyethylene sheeting. Use an expanding-polyurethane foam gun to seal areas with large numbers of pipes, conduits and beams. Openings include, but are not necessarily limited to, windows, skylights, doorways, elevator hoistway openings, corridor entrances, drains, ducts, grills, grates, and diffusers.
 2. Seal intake and exhaust vents and duct seams within the regulated area with not less than 2 layers of 6-mil polyethylene sheeting.
 2. HVAC System Shutdown: Owner's maintenance personnel will shut down heating, cooling, and air conditioning systems when necessary. Coordinate scheduling with Owner's personnel and provide 72 hours notice to the Owner's Representative prior to planned shut-down.
 3. Protection of Surfaces and Objects: The following requirements are in addition to, not in lieu of, indicated work area sealing requirements. Cover the following surfaces and objects as follows:
 1. Protect all surfaces beneath all removal activity. Remove moveable objects from the work area, and cover fixed objects with impermeable dropcloths or plastic sheeting with edges securely sealed with tape.
 2. Cover open tanks with plywood or other solid material.
 3. Provide clean, fresh air to mechanical equipment, where required to maintain proper performance of equipment.
 4. Fully pre-clean all covered surfaces with amended water and a HEPA vacuum.
 5. Cover walls with not less than 2 layers of 4-mil polyethylene sheeting. Construct free-standing enclosure walls of not less than 6-mil polyethylene sheeting, with supports spaced not more than 3 feet o.c.
 6. Cover floors with not less than 2 layers of 6-mil polyethylene sheeting. Avoid seams where possible. If seams are necessary, overlap not less than 12 inches and tape joints. Extend sheeting 12 inches up the side walls leaving no seams at the wall and floor joint. Immediately repair punctures and leaks, and clean up seepage.
 4. Cleaning: Do not use cleaning methods that raise dust, such as sweeping or using vacuum cleaners not equipped with HEPA filters. Do not disturb asbestos materials during pre-cleaning phases.

1. Treat water removed from the enclosure as asbestos contaminated waste. Fully seal floor drains.
5. Deactivate or install ground-fault circuit interrupters on each electrical circuit within the enclosure.
6. Construct a three-chambered decontamination facility that is adjacent to and connected to the regulated area, and that consists of a dirty room, a shower room, and a clean room in series. Construct decontamination facilities that are exposed to weather of lumber and exterior grade plywood. Secure the facility when not in use.
 - 1) Supply the equipment room with properly labeled, impermeable bags and containers for the containment and disposal of contaminated protective equipment.
 - 2) Construct showers that comply with the requirements of 29 CFR 1910.141 (d) (3), with the shower room adjacent to both the equipment room and the clean room. Filter water waste and shower water through a 5 micron filter, or remove water from site as asbestos waste.
 - 3) Equip the clean room with a locker or appropriate storage container for each employee.
7. Employee Decontamination Facilities: Comply with the following requirements:
 1. Access the work area only through an approved decontamination system. Lock or block other entrances. Seal emergency exits (for use during a fire or accident) with polyethylene sheeting and tape.
 2. Seal the waste pass-out, except during the removal of asbestos waste from the enclosure.
 3. Entrance To The Regulated Area: Employees shall enter the decontamination area through the clean room, remove and store clothing, and put on protective clothing and respiratory protection before passing through to the equipment room.
 4. Exit From The Regulated Area: Employees shall exit the regulated area by removing gross contamination and debris from their protective clothing. The clothing shall be removed and disposed of in the equipment room into labeled impermeable bags or containers. Employees shall then shower and enter the clean room before changing into street clothes.
8. Local Exhaust Ventilation: Maintain portable air filtration units with a HEPA filter in use during asbestos abatement operations requiring enclosures. Units shall conform to OSHA Standard 1926.1101, Appendix F, and shall be designed in accordance with 40 CFR 61, Subpart M, Section 61.153.
 1. Exhaust directly to building exterior. Provide a backup portable air filtration unit at each removal enclosure. Start up ventilation units prior to initiating asbestos removal operations and run until the Owner's consultant has approved their shut-down after cleaning, sampling, visual inspection, and tear-down.
 2. Direct air movement within the enclosure away from the employees' work area and toward the air filtration device.
 3. Provide not less than 4 air changes per hour within the enclosure.

4. Within the enclosure, through the period of its use, maintain a pressure differential of not less than minus 0.02 water gage with respect to ambient conditions outside the enclosure.
 9. Visually inspect the enclosure for breeches and smoke-test for leaks before work begins, and before the start of each work shift. Make all modifications to the enclosure prior to starting removal work.
- B. Asbestos Removal Operations: Comply with the following requirements for asbestos removal operations:

1. Immediately preceding asbestos removal, apply a fine mist of amended water (water and wetting agent) to the asbestos materials and the surrounding area. Keep surrounding areas wet by spraying periodically with amended water. Maintain a high humidity environment to assist in fiber settling.
2. Remove asbestos material using two-person teams, on staging platforms, if necessary.
3. Remove the wet asbestos material as intact sections or components. Carefully lower the material to the floor or place directly into container. Never drop or throw asbestos material on the floor.
4. At working heights between 15 and 50 feet above the floor, place removed asbestos materials in containers at the elevated levels and lower to floor, or place onto inclined chutes or scaffolding for subsequent collection and placement into containers. Clean all debris at the completion of each workday.
5. Once the asbestos material is at ground level, pack in labeled 6-mil polyethylene bags, wet and, if appropriate, hold in drums prior to starting the next section.
6. Use 2 sealed and labeled 6-mil thick bags for storage and transportation of asbestos waste. Standing water shall be in each bag
7. Wrap large components removed intact in two layers of 6-mil polyethylene sheeting, label, and secure with tape for transport to the landfill. Comply with all wetting requirements.
8. Treat wires, hangers, steel bands, nails, screws, metal lath, tin sheeting, and similar sharp objects removed with asbestos material as asbestos waste. Place in drums for disposal.
9. Label containerized asbestos waste in accordance with OSHA, EPA, and Department of Transportation regulations, as follows:
 1. Label each container with OSHA label that contains the following information:

**DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG
DISEASE HAZARD**

2. Label each container with Owner's and Asbestos Abatement Firm's names and addresses as required by NESHAP. Owner's address is 301 E. Huron, Ann Arbor, MI 48104.
3. Label each container with Class 9 Label required by DOT and identify waste as "RQ, Asbestos NA 2212."

10. Prepare a complete and accurate NESHAP Waste Shipment Record (special manifest). Assure all information required by the U.S. Department of Transportation regulation is included. Under "special handling instructions" provide the required DOT identification information: RQ Asbestos 9,NA 2212, PG III.
 1. Do not remove waste from site until Owner's Representative has signed and verified the shipment record.
 11. Remove containerized asbestos waste daily from site, or store on site in a locked or secured location until ready for final disposal. Obtain approval of Owner's Representative of the location of disposal containers. Outdoor waste containers shall be fully enclosed and locked. Mark vehicles used to transport waste during the loading and unloading of asbestos waste with a visible sign, as required by NESHAP.
 12. Each container shall have excess water evident, or the asbestos waste shall be mixed in a slurry.
- C. Post-Removal Operation Requirements: After completion of asbestos removal and clean-up operations, comply with the following requirements:
1. The Asbestos Abatement Firm representative, in presence of Owner's consultant, shall inspect the entire work area for asbestos. Include decontamination unit, all plastic sheeting, seals over doorways, windows, and all other openings.
 1. If any suspect asbestos is found, repeat final cleaning operation, until the visual inspection is satisfactory to the Owner's consultant and the asbestos removal firm. Asbestos not scheduled to be removed as part of the project is exempt.
 2. Encapsulate all walls, floors, ceilings, other exposed surfaces, and decontamination facilities after completing the work area inspection.
 1. Remove the inner polyethylene barrier that is not integral to maintaining negative pressure in the enclosure at this time, and post-abatement air samples will be collected by Owner's consultant. Immediately clean any asbestos-containing materials observed behind these secondary barriers.
 3. When post-abatement fiber levels are greater than either 0.01 fiber/cc or background level, repeat cleanup operation until the area is below either 0.01 fibers/cc or background level.
 4. When the post-abatement samples are in compliance, and the Owner's consultant has completed the visual inspection, the enclosure shall be removed.
 1. Turn off HEPA filter exhaust units only after all barriers have been removed.
 2. A final visual inspection will then be conducted by the Owner's consultant before the Contractor is released from the removal site. The final inspection will include tape, polyethylene sheet, debris, and equipment.

3.3 REMOVAL BY NEGATIVE PRESSURE GLOVE BAG SYSTEMS

- A. Equipment and Materials: Use the following equipment and materials for each glovebag procedure:

1. Glovebags fabricated of 6-mil thick plastic without seams at the bottom.
2. HEPA vacuum system attached to the glovebag and run continuously during operation.
3. Protective suits and respirators.
4. Plastic sheeting.
5. Wetting agent.
6. Encapsulant.

B. Procedures: Comply with the following glovebag method requirements:

1. Wrap loose and friable material adjacent to the removal area in 2 layers of 6-mil thick plastic, or otherwise render intact.
2. Place plastic sheeting on the floor and equipment beneath each glovebag.
3. Wet-wipe or HEPA vacuum dust and dirt from insulation to be removed.
4. Install glovebags to completely cover the circumference of pipe or other structure where work is to be done.
5. Smoke-test glovebags for leaks. Seal leaks prior to use.
6. Insert and seal equipment that penetrates the bag (spray wands, vacuum nozzles) before insulation is disturbed.
7. Wet the insulation to be removed before, during, and after the removal.
8. Provide only bags capable of withstanding constant wetting and evacuation through a HEPA filtered device.
9. During the performance of glovebag operations removing thermal systems, insulation, or surfacing materials, employ not less than 2 persons, working simultaneously, for each task.
10. Wipe insulation residue from the pipe prior to application of an encapsulant.
11. Spray the pipe and glovebag with an encapsulant before the bag is removed from the pipe.
12. Seal exposed insulation ends with a heavy grade mastic.
13. Follow glovebag manufacturer's instructions.
14. Comply with requirements for asbestos waste disposal indicated in "Removal by Full Enclosure Method" of this Section.

C. Unacceptable Conditions and Procedures and Conditions: In general, do not use the glovebag method in conditions that prevent safe completion of the removal process. The following procedures are not allowed during glovebag removal:

1. Removing severely damaged insulation.
2. Overloading glovebag.
3. Sliding or moving insulation or glovebag along pipe.
4. Squeezing bags to remove air.
5. Placing glovebags on pipes or other surfaces that exceed 150 deg. F.
6. Using a glovebag more than once.

3.4 REMOVAL BY ENTIRE STRUCTURES METHOD

A. The removal of entire structures without disturbing the asbestos is encouraged. An example is removal of asbestos covered pipe fittings by cutting out the entire pipe section scheduled for demolition.

1. Obtain Owner's Representative's approval of removal by entire structures method prior to starting the project.

- B. Required Procedures: Comply with the following requirements applicable to removal of entire structures:
1. Properly wet all asbestos materials before starting procedure. Ensure that material stays adequately wet throughout the entire procedure by continuing application of water as needed.
 2. Properly and fully wrap and label the structure before it is moved or cut out.
 3. Provide the equipment necessary for asbestos debris cleaning on site during the procedure.
 4. Comply with requirements for asbestos waste disposal indicated in "Removal by Enclosure Full Method" Article of this Section.

3.5 FIELD QUALITY CONTROL

- A. Pre-Notification of Owner's Representative: To permit adequate time to schedule air monitoring, notify the Owner's representative not less than 10 calendar days prior to planned start of all removal operations.
- B. Air Monitoring: Except for roofing removal work Owner will retain a professional independent industrial hygiene consultant to collect air samples and oversee the project to insure that compliance with applicable codes, regulations, and ordinances, including 29 CFR 1926.1101, NESHAP, and P.A. 135. The consultant will collect background, contiguous, work area, personal, and post-abatement air samples. Owner will provide one copy of the report to the Contractor if requested.
1. If contiguous sampling indicates airborne fiber concentrations above 0.01 fibers/cc or background level, work will be stopped unless otherwise approved by Owner. Work may resume when the source of contamination has been corrected and the contamination has been cleaned to the satisfaction of the Owner.
 2. Glovebag, entire structures, and full enclosure clearance sampling will be by the aggressive PCM method when feasible. Enclosures must be fully dry before sampling.
 3. Roofing removal Contractors may provide their own air monitoring in compliance with roofing removal requirements of this Section.
- C. Inspection: If during the project, Owner's representative or Owner's consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with Owner's representative and Owner's consultant.

3.6 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING MATERIALS

- A. Removal of Non-Friable Materials, General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:
1. Comply with requirements of Article 3.1 of this Section.

2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with the requirements for friable asbestos removal specified in Articles 3.2 of this Section (except roofing removal).
3. Place impermeable drop cloths on surfaces beneath removal activity.
4. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and Owner has been notified. For roofing removal projects, notify Owner prior to start of work.
5. Labeling Containerized Waste: Comply with the requirements of Article 3.2, paragraphs B.9.a. through c. of this Section.

B. Removal of Resilient Flooring Materials:

1. Prior to removal, critical barriers shall be placed over openings to the regulated area. During removal, air in the regulated area shall be filtered through the use of air filtration device(s).
2. Removal of floor tile with an infrared heat machine eliminates the critical barrier and negative pressure requirements.
3. Prior to removal, clean floors of dirt and debris with vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (brush tools are not permitted). Control odors and fumes with engineering controls.
4. Sanding the floor or related backing is not permitted.
5. Mechanical chipping of vinyl floor tile is prohibited, except when performed in a negative pressure enclosure.
6. Thoroughly wet vinyl floor tile with amended water. Use a slip scraper or equivalent to loosen the floor tile from the floor. Remove the floor tile in an intact state. Keep the floor tile wet throughout the removal and cleanup.
 1. Removal of floor tile using an infrared heat machine eliminates the wetting requirement.
7. Remove vinyl sheet flooring by cutting while wetting the snip-point. Wet sheet flooring during delamination. Rip-up of resilient flooring material is not permitted.
8. Clean resilient flooring of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent and allow time to dry. Dry sweeping is prohibited.
9. Place the resilient flooring material and debris in an asbestos disposal bag. Seal the bag and place it in a properly labeled drum or polyspun bag. Comply with the disposal and labeling requirements of this Section.

C. Asbestos Mastic Removal:

1. Clean the floor of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent.
2. Remove as much mastic as possible using a solvent. Control odors and fumes with engineering controls.
3. Perform scraping of residual adhesive and backing using wet methods.
4. After all debris is removed, thoroughly mop the floor and allow time to dry.
5. If shot blasting is used to remove mastic, comply with requirements for friable asbestos removal specified in Article 3.2 of this Section.

6. Properly dispose of all asbestos and solvent waste according to all applicable regulations, and comply with the disposal and labeling requirements of this Section.
- D. Asbestos-Containing Siding, Transite Panels, and Laboratory Counter Tops: Remove non-friable asbestos-containing siding, shingles, transite panels, and laboratory counter tops using the following technique:
1. Cutting, abrading, or breaking material is not permitted.
 2. Wet material with amended water prior to removal.
 3. Carefully disassemble material such a manner as to prevent breakage.
 4. Wrap and seal material in two layers 6-mil thick polyethylene, asbestos disposal bags, or equivalent. Seal bags or packages and properly label them with appropriate asbestos warning signs as indicated in "Removal of Non-Friable Materials, General" Article of this Section.
 5. Immediately lower to the ground unwrapped or unbagged materials via covered, dust-tight chute, crane, or hoist; or place in an impervious waste bag or wrap in plastic sheet and lower to the ground no later than the end of the work shift.
 6. Clean the floor of all debris using a HEPA vacuum, wet sweeping, mopping or equivalent and allow time to dry.
 7. Dispose of asbestos waste in accordance requirements of this Section.
- E. Non-Friable Asbestos-Containing Roofing Materials: Non-friable asbestos-containing roofing materials may be removed in a non-friable state. This specification does not apply to removal of intact cements, coatings, or mastics. Remove non-friable asbestos-containing roofing materials in using the following technique:
1. Each employee who is likely to disturb or handle asbestos material shall have completed an 8-hour training class, and the project shall be supervised by a competent person who has completed the appropriate contractor/supervisor course.
 2. Isolate roof level heating and ventilation air intake sources within the regulated area and others that will be affected; or arrange for shut-down the affected ventilation system during removal operations. Acceptable isolation techniques include the following:
 1. Use 20-foot or larger buffer zones.
 2. Installation of HEPA filters over the air intakes.
 3. Erection of horizontal or vertical extensions that relocate the opening of the intake outside or above the regulated area.
 4. Covering the intake with plastic sheeting or other appropriate barrier.
 3. Personal protective equipment (PPE), including disposable coveralls and NIOSH approved appropriate high efficiency particulate absolute (HEPA) respirators, shall be worn by personnel if the asbestos containing material is not removed in an intact state.
 4. Remove roofing material in an intact state.
 5. Use wet methods to remove materials that are not intact, or that are rendered not intact during removal, except where wet methods will create a safety hazard or are otherwise not feasible.

6. Continuously apply a water mist to the blade of power cutting tools, unless a competent person determines that misting will substantially decrease worker safety.
7. When removing roofing felts, collect the dust generated by power roof cutters with a HEPA-filtered dust collector; or immediately vacuum using a HEPA-filtered vacuum along the cut line. For smooth surfaces only, gently sweep wet dust generated from cutting operations, and carefully and completely wipe up the still-wet dust and debris.
8. For removal and repair operations of intact roofing less than 25 sq. ft. in area, the use of wet methods or HEPA vacuuming is not required, provided manual methods do not render the material non-intact and no visible dust is created.
9. Do not drop or throw to the ground asbestos-containing roofing material that has been removed. As soon as practicable, but not later than the end of the work shift, lower debris to ground either by passing or carrying by hand, or by lowering to the ground in a covered, dust-tight chute, crane or hoist.
 1. While on the roof, keep non-intact asbestos-containing materials wet; or seal in impermeable waste bags, or wrap in plastic sheeting.
 2. While on the roof, intact asbestos-containing material is not required to be kept wet, bagged, or wrapped.
10. Upon being lowered to the ground, transfer unwrapped material to a closed receptacle in manner that precludes the dispersion of dust. Dispose of the material in an asbestos-accepting Type II landfill. Notify the landfill that the roofing material contains asbestos and provide waste shipment records to Owner within 35 days.
11. For removal of intact pipeline asphaltic wrap or roof flashings that contain asbestos, engage a competent person to examine the material and determine whether the material is intact and likely to remain intact during removal. Remove the material using manual methods. Sanding, grinding, or other abrading operations are not permitted. Do not throw or drop materials to the ground. Lower the material in a covered, dust-tight chute, crane, or hoist. Remove debris from the roof at the end of the work shift.

F. Non-Friable Asbestos Containing Exterior Sealant, Caulk, Putty and Window Glazing: Remove exterior non-friable asbestos-containing sealants, caulk, putty and window glazing using the following technique:

1. Any existing loose material shall be HEPA vacuumed prior to removal.
2. The material shall be thoroughly wetted prior to and during its removal.
3. The material should be removed as intact as possible. Manual methods such as scraping or raking shall be used, unless power tools are used that are equipped with HEPA ventilation. If power tools are used comply with Article 3.2 (Asbestos Removal by Full Enclosure Method) of this Section.
4. Asbestos containing materials removed, shall be immediately bagged or wrapped and kept wetted until transferred to a closed receptacle.

5. The removal of windows and other whole building components without disturbing the asbestos is encouraged. An example of this would be removing a window with asbestos containing glazing or caulk by cutting out the entire window scheduled for demolition. Comply with Article 3.4 (Removal by Entire Structures Method) of this Section when removing entire building components containing asbestos.
6. If the material becomes friable during the abatement process, comply with the requirements for friable asbestos removal specified in Article 3.2 (Asbestos Removal by Full Enclosure Method) of this Section.
7. Dispose of all asbestos containing materials, including those removed by the entire structures method, per the requirements of this Section.

3.7 SCHEDULE OF ITEMS CONTAINING ASBESTOS

- A. Bidding Requirements: Comply with the following requirements related to bidding:
 1. Survey quantities provided are approximate. Bidders are required to field investigate as necessary and assume all responsibility to verify the work required and quantities involved for complete asbestos abatement.
 2. The building is open for field inspection by all bidders during the bidding period.
 3. A "pre-bid orientation meeting" will be conducted to familiarize prospective bidders with site conditions and provide for verification of marked and scheduled quantities, as applicable.
 4. The below materials have been survey and determined to contain asbestos
 1. Electrical Wiring Insulation - Stage Lighting (Presumed Positive. May be removed from scope upon testing)

ASBESTOS REMEDIATION - ROOFING MATERIAL

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes removal and disposal of asbestos-containing materials by full enclosure, glove bag, or entire structures methods as applicable. Demolition and debris removal of all asbestos-containing materials identified by provisions of this Section, or shown on drawings, or identified at the site, shall be executed under the provisions of this Section, and other applicable sections of these specifications.
- B. Extent of asbestos removal work is as follows:
 - 1. Flat Roofing Material (Presume positive. May be removed from scope upon further testing)

1.2 DEFINITIONS

- A. Asbestos Abatement Firm: Firm engaged to perform actual removal and disposal work, either as Contractor or subcontractor.
- B. Asbestos Containing Material: The term "asbestos containing material" is abbreviated ACM.
- C. Owner's Consultant: Firm engaged by Owner to identify and measure asbestos containing materials, or to inspect demolition operations, including monitoring of air quality.

1.3 SUBMITTALS

- A. Initial Submittals: Submit the following documents to Owner's Representative at the pre-abatement meeting:
 - 1. Copy of notification sent to appropriate federal, state, and local agencies (when applicable).
 - 2. Schedule of removal, specifying work locations, length and number of shifts, foreman's name, and crew size.
 - 3. Disposal Site Certification: Letter, signed by the Contractor, certifying that an approved asbestos-accepting type II landfill will be used for disposal. Include the facility name, address, and phone number.
- B. Waste Disposition Submittals: Submit to Owner signed waste shipment record stating that asbestos waste has been properly disposed. Submit the following:
 - 1. Receipts (trip tickets) from approved landfill.
 - 2. Asbestos Waste Shipment Record: As follows:
 - a. Prior to removing asbestos-containing material from the project site, provide Owner's Representative or Owner's consultant with a completed waste shipment record fully complying with Section 61.150 of the NESHAP standard, and 49 CFR Part 172.200 of the U.S. Department of Transportation, and including all required information.

- b. Ensure that the landfill operator provides a signed copy of the waste shipment record to Owner within 35 days of the date that asbestos-containing material is removed from the project site. If waste is not transported directly from the project site to the landfill, the waste shipment record shall reflect each transfer.
- c. The Owner will not make final payment prior to receipt of signed waste shipment record.

PART 2 - EXECUTION

2.1 ASBESTOS ABATEMENT, GENERAL

- A. Conduct asbestos abatement operations in a manner that fully protects Contractor's and subcontractor's employees, the general public, and building occupants from exposure to asbestos and other safety and health hazards.
 - 1. Asbestos abatement projects shall be directly supervised by a competent person as described in 29 CFR 1926.1101.
 - 2. The supervisor/competent person must complete responsibility checklists throughout all phases of the project.
- B. Protect adjacent areas, materials and surfaces from damage due to demolition operations, including but not necessarily limited to the following:
 - 1. Water damage.
 - 2. Dirt, dust and debris.
 - 3. Abrasion.
 - 4. Cuts and scratches.
 - 5. Holes from fasteners for temporary barriers.
- C. All asbestos work shall be conducted within a regulated area that complies with the following requirements:
 - 1. Post a sufficient number of signs required by 29 CFR 1926.1101 at the asbestos abatement area and at every work area entrance, so that tenants, Owner's personnel, and other contractor's employees have an opportunity to take protective measures before exposing themselves to asbestos. Place banners if necessary to secure open areas. Include information on signs indicating location and quantity of asbestos-containing material.
 - 2. Allow only authorized, properly protected personnel to enter the regulated area. Immediately report unauthorized individuals entering the work area to Owner or the Owner's consultant.
- D. When required, provide employees and inspectors authorized to enter the regulated area with protective work clothing consisting of disposable Dupont "Tyvek" (or equivalent) full body coveralls, head covers, boots, and other necessary safety gear, including a hard hat and eye protection.
- E. Provide respiratory protection to employees as required by current OSHA regulations including 29CFR 1910.134 and 1926.1101.

1. Provide asbestos abatement workers with powered air purifying respirators (PAPR) with full facepiece and HEPA filters for adequate protection during asbestos material removal operations. Respiratory protection may be down-graded if negative exposure assessment indicates that less protection is required.
2. A half-face respirator or PAPR must be worn while tearing down and setting up enclosures, while glovebagging, and during pre-cleaning and post-cleaning work.
3. Do not allow respirators to be pulled away from faces while in the work area.
4. Maintain an extra PAPR unit on site at all times for the duration of the abatement project.
5. Provide full facepiece supplied-air respirators operated in pressure demand mode equipped with air auxiliary and pressure self-contained breathing apparatus or HEPA egress filters if required for measured fiber concentrations.

F. Maintain at each job site and post the following documents:

1. Copy of MDEQ/MDLARA notification (when applicable).
2. Employee respiratory protection program (when applicable).
3. Michigan Right-To-Know poster.
4. Material Safety Data Sheet locator.
5. Company standard operating procedure.
6. This specification Section.
7. Material Safety Data Sheets for products used on job.
8. CFR 1926.1101.
9. CFR, Part 61 (NESHAP).
10. The foreman's or supervisor's Contractor/Supervisor Accreditation Certificate.
11. State of Michigan Accreditation Certificates and Medical Approval for each worker (when applicable).

G. Use the following engineering controls and work practices for all asbestos abatement operations, regardless of measured exposure levels:

1. Vacuum cleaners equipped with HEPA filters to collect all asbestos-containing dust and debris.
2. Wet methods to control exposures during asbestos removal and clean-up, except where proven to be infeasible.
3. Prompt clean-up and disposal of asbestos-contaminated wastes and debris in leak-proof containers.
4. Establish a decontamination area, adjacent and connected to the regulated area, if the Project requires the removal of more than 25 lin. ft., or 10 sq. ft. of thermal systems insulation or surfacing ACM.
5. Establish an equipment area adjacent to the regulated area if the Project requires the removal of less than 25 lin. ft. or 10 sq. ft. of thermal systems insulation or surfacing ACM.

H. Do not use any of the following equipment or work practices during asbestos abatement operations, regardless of measured exposure levels:

1. High-speed abrasive disc saws not equipped with point-of-cut HEPA ventilation or HEPA filtered exhaust air enclosures.
2. Blowing with compressed air to remove asbestos-containing materials.

3. Dry sweeping, shoveling, or other dry methods to clean up asbestos-containing dust and debris.
4. Employee rotation as a means of reducing employee exposure to asbestos.

2.2 FIELD QUALITY CONTROL

- A. Pre-Notification of Owner: To permit adequate time to schedule air monitoring, notify the city project representative not less than 10 calendar days prior to planned start of all removal operations.
 1. Roofing removal Contractors may provide their own air monitoring in compliance with roofing removal requirements of this Section.
- B. Inspection: If during the project, if Owner's representative or Owner's consultant determines that work practices either violate applicable rules and regulations or endanger employees, the Contractor's on-site representative shall stop operations immediately and take corrective action. Cooperate fully with Owner's representative and Owner's consultant.

2.3 REMOVAL OF NON-FRIABLE ASBESTOS-CONTAINING MATERIALS

- A. Removal of Non-Friable Materials, General: For each type of non-friable asbestos-containing material indicated, comply with the following requirements:
 1. Comply with requirements of Article 3.1 of this Section.
 2. Conduct non-friable material removal operations to prevent the material from becoming friable during the removal and disposal process. No visible emissions are permitted. If the material does not remain substantially intact, comply with the requirements for friable asbestos removal specified in Articles 3.2 of this Section (except roofing removal).
 3. Place impermeable drop cloths on surfaces beneath removal activity.
 4. Do not conduct asbestos removal unless the Owner's Consultant is present at the site and Owner has been notified. For roofing removal projects, notify Owner prior to start of work.
 5. Labeling Containerized Waste: Comply with the requirements of Article 3.2, paragraphs B.9.a. through c. of this Section.
- B. Non-Friable Asbestos-Containing Roofing Materials: Non-friable asbestos-containing roofing materials may be removed in a non-friable state. This specification does not apply to removal of intact cements, coatings, or mastics. Obtain Owner's review and approval of planned removal operations prior to beginning. Remove non-friable asbestos-containing roofing materials in using the following technique:
 1. Each employee who is likely to disturb or handle asbestos material shall have completed an 8-hour training class, and the project shall be supervised by a competent person who has completed the appropriate contractor/supervisor course.

2. Isolate roof level heating and ventilation air intake sources within the regulated area and others that will be affected; or arrange for shut-down the affected ventilation system during removal operations. Acceptable isolation techniques include the following:
 - a. Use 20-foot or larger buffer zones.
 - b. Installation of HEPA filters over the air intakes.
 - c. Erection of horizontal or vertical extensions that relocate the opening of the intake outside or above the regulated area.
 - d. Covering the intake with plastic sheeting or other appropriate barrier.
3. Personal protective equipment (PPE), including disposable coveralls and NIOSH approved appropriate high efficiency particulate absolute (HEPA) respirators, shall be worn by personnel if the asbestos containing material is not removed in an intact state.
4. Remove roofing material in an intact state.
5. Use wet methods to remove materials that are not intact, or that are rendered not intact during removal, except where wet methods will create a safety hazard or are otherwise not feasible.
6. Continuously apply a water mist to the blade of power cutting tools, unless a competent person determines that misting will substantially decrease worker safety.
7. When removing roofing felts, collect the dust generated by power roof cutters with a HEPA-filtered dust collector; or immediately vacuum using a HEPA-filtered vacuum along the cut line. For smooth surfaces only, gently sweep wet dust generated from cutting operations, and carefully and completely wipe up the still-wet dust and debris.
8. For removal and repair operations of intact roofing less than 25 sq. ft. in area, the use of wet methods or HEPA vacuuming is not required, provided manual methods do not render the material non-intact and no visible dust is created.
9. Do not drop or throw to the ground asbestos-containing roofing material that has been removed. As soon as practicable, but not later than the end of the work shift, lower debris to ground either by passing or carrying by hand, or by lowering to the ground in a covered, dust-tight chute, crane or hoist.
 - a. While on the roof, keep non-intact asbestos-containing materials wet; or seal in impermeable waste bags, or wrap in plastic sheeting.
 - b. While on the roof, intact asbestos-containing material is not required to be kept wet, bagged, or wrapped.
10. Upon being lowered to the ground, transfer unwrapped material to a closed receptacle in manner that precludes the dispersion of dust. Dispose of the material in an asbestos-accepting Type II landfill. Notify the landfill that the roofing material contains asbestos and provide waste shipment records to Owner within 35 days.

11. For removal of intact pipeline asphaltic wrap or roof flashings that contain asbestos, engage a competent person to examine the material and determine whether the material is intact and likely to remain intact during removal. Remove the material using manual methods. Sanding, grinding, or other abrading operations are not permitted. Do not throw or drop materials to the ground. Lower the material in a covered, dust-tight chute, crane, or hoist. Remove debris from the roof at the end of the work shift.

2.4 SCHEDULE OF ITEMS CONTAINING ASBESTOS

- A. Bidding Requirements: Comply with the following requirements related to bidding:
 1. Survey quantities provided are approximate. Bidders are required to field investigate as necessary and assume all responsibility to verify the work required and quantities involved for complete asbestos abatement.
 2. The building is open for field inspection by all bidders during the bidding period.
 3. A "pre-bid orientation meeting" will be conducted to familiarize prospective bidders with site conditions and provide for verification of marked and scheduled quantities, as applicable.
- B. The following items have been surveyed and determined to have asbestos as a component:
 1. Flat Roofing Material (Presume positive. May be removed from scope upon further testing)

**LIMITED BUILDING MATERIAL SURVEY OF
SUSPECT ASBESTOS CONTAINING MATERIALS
CITY OF ANN ARBOR - WEST PARK AMPITHEATER - 215 CHAPIN STREET
INSPECTION DATE - 08/31/2021**

HA #	ROOM# / LOCATION	FLOOR	DESCRIPTION	POS or NEG	QUANTITY
1	BASEMENT	B	FILL MATERIAL	NEGATIVE	-
2	1ST FLOOR	1	CONCRETE FLOOR	NEGATIVE	-
3	EXTERIOR	-	STUCCO - LT. BLUE - SOUTH	NEGATIVE	-
4	EXTERIOR	-	WHITE SEALANT - EXTERIOR WOOD SIDING	NEGATIVE	-
5	EXTERIOR	-	CMU GROUT	NEGATIVE	-
6	EXTERIOR	-	STUCCO - LT. BLUE - NORTH	NEGATIVE	-
7	EXTERIOR	-	WHITE SEALANT - EXTERIOR STAGE	NEGATIVE	-
8	EXTERIOR	-	CONCRETE FLOOR - EXTERIOR STAGE - MAROON	NEGATIVE	-
9	EXTERIOR	-	STUCCO - WHITE	NEGATIVE	-
10	EXTERIOR	-	ELECTRICAL WIRE - STAGE LIGHTING	PRESUMED POSITIVE	-
11	EXTERIOR	-	FLAT ROOFING MATERIAL	PRESUMED POSITIVE	-
12	EXTERIOR	-	BLACK SEALANT ON TIN ROOF	NEGATIVE	-
13	BASEMENT	-	BASEMENT - INACCESSIBLE	-	-
14	EXTERIOR	-	AMPITHEATER ROOF VOID - INACCESSIBLE	-	-

SECTION 32 91 19

DS_LANDSCAPE GRADING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Materials
 - a. Organic Compost Materials
 - b. Organic Soil Materials (Topsoil)
 - c. Planting Bed Soil Mix
 - d. Organic Mulch Materials
 - e. Exhibit Soil Mixture
 - f. Soil Amendments and Fertilizers
 - 2. Excavating and stockpiling or organic soils on Site
 - 3. Installation of Organic Soils
 - 4. Application of Soil Amendment and Fertilizers
 - 5. Installation of Plant Soil Mixes
 - 6. Installation or Organic Mulch Materials
 - 7. Soil Testing
- B. This Section covers the placement of organic soils and mulches in planting areas, aesthetic grading, and soil for planting.
- C. The Owner or Engineer may provide visual inspection and/or other acceptance tests of organic soils and mulch materials.
- D. Products Furnished [OR] Supplied but Not Installed under This Section
 - 1. None.
- E. Products Installed but Not Furnished under This Section
 - 1. None.
- F. Related Requirements:
 - 1. Section 32 92 19 – Turf Establishment by Seeding
 - 2. Section 32 92 23 – Turf Establishment by Sodding
 - 3. Section 32 93 00 – Plants

1.2 PRICE AND PAYMENT PROCEDURES

- A. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this Section shall be factored into the other contract bid prices.
- B. No separate bid-item is provided for organic soil (topsoil) for surface applications. The Contractor is responsible for all handling, stockpiling, processing, storage, procurement, transportation, preparation, mixing, tilling, installation of topsoil and compost materials to final grade, depth, and final contour areas designated.

- C. **PLANT BED SOIL MIX.....SQUARE YARD (SYD)**
Includes the purchase, transportation, delivery, mixing, tilling, installation labor and preparation of planting bed soil mix in areas designated, including stockpiling and storage of materials prior to installation.
- D. **MULCH, DOUBLE-SHREDDED BARK MULCH.....SQUARE YARD (SYD)**
Includes the purchase, delivery, tilling, and installation of the material type to the specified depth of planting bed or specified final placement location shown on the Contract Drawings.

1.3 REFERENCES

- A. Abbreviations and Acronyms Definitions
 - 1. EGLE - Michigan Department of Environment, Great Lakes and Energy.
 - 2. MDOT – State of Michigan Department of Transportation.
 - 3. USCC – United States Composting Council
- B. Definitions
 - 1. Compost - product manufactured through the controlled aerobic, biological decomposition of biodegradable materials.
 - a. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon, such that it is beneficial to plant growth.
 - b. Mature, stabilized, humus-like material derived from the aerobic decomposition of yard clippings, leaves, and brush with a diameter less than four (4) inches.
 - 2. Friable – Easily crumbled or pulverized soil, worked-up, loosened, or cultivated soil free of lumps and clods detrimental to seeding or sodding installation.
 - 3. Humus – Brown or black material formed by decomposition, the organic portion of soil essential to fertility.
 - 4. Soil Test – Analysis report of soil nutrient content particle size, pH levels, and organic matter.
- C. Reference Standards
 - 1. MDOT – 2020 Standard Specifications for Construction Section 917
 - 2. United States Composting Council 2018 Definition

1.4 ADMINISTRATIVE REQUIREMENTS

- A. None.

1.5 SUBMITTALS

- A. For Organic Soil Materials:
 - 1. Provide Testing Report(s) containing the following:
 - a. Mechanical gradation (particle size analysis)
 - b. Sand/Silt/Clay Content determined by hydrometer test of soil passing the No. 200 sieve.
 - c. Organic matter determined by an ash burn test or Walkley/Black test.

- d. Chemical analysis for nitrogen, ammonium nitrogen, phosphorus, potassium, calcium, lime requirements, and acidity (pH).
 - 2. Documentation of the material source
 - B. For Organic Compost Materials:
 - 1. Documentation of the material source.
 - 2. Certification by the United States Composting Council Seal of Testing Assurance (STA) Program.
- 1.6 CLOSEOUT SUBMITTALS
 - A. None.
- 1.7 MAINTENANCE MATERIAL SUBMITTALS
 - A. None.
- 1.8 QUALITY ASSURANCE
 - A. Compost production and quality shall be certified by the US Composting Council Seal of Testing Assurance (STA) Program and meet the criteria specified herein:
 - 1. Compost should be produced at a facility listed with the Michigan Department of Environment, Great Lakes and Energy (EGLE).
 - 2. Compost products shall be the result of the biological degradation and transformation of feedstocks as specified below, under controlled conditions designed to promote aerobic decomposition, per MCL 324.11555
 - B. Maintain chain-of-custody documentation for imported organic soils and amendments.
 - C. Use only certified composts and organic soil blends meeting USCC standards.
- 1.9 DELIVERY, STORAGE, AND HANDLING
 - A. Store organic soils and amendments in dry, well-ventilated, covered areas to prevent contamination and moisture loss.
 - B. Handle materials to prevent compaction or contamination with foreign materials.
- 1.10 FIELD [OR] SITE CONDITIONS
 - A. Soil and ground saturation levels may vary. Ensure proper site drainage and avoid working during excessively wet or frozen conditions to preserve organic soil integrity.
- 1.11 WARRANTY [OR] BOND
 - A. None.

PART 2 PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS

A. None.

2.2 MATERIALS

A. Organic Soil Materials, Existing On-Site Screened or Processed (Topsoil)

1. Existing subsoil previously removed and stockpiled from the Contractor's operations. Excavated and re-used material, graded, free of lumps larger than 3 inches, rocks larger than 2 inches and debris.
2. Must meet visual quality standards and free of contaminants and foreign debris.
3. Must be capable of supporting plant growth.
4. Free of objectionable color, plastic, glass, metal, and other physical contaminants.

B. Organic Soil Materials, Imported from off-site source (Topsoil).

1. Fertile, agricultural soil, typical for locality, capable of sustaining vigorous plant growth, taken from drained site; free of subsoil, clay or impurities, plants, weeds and roots.
 - a. Imported
 - b. Friable loam.
 - c. Reasonably free of roots, rocks larger than 1/2 inch (12 mm), subsoil, debris, large weeds, and foreign matter. (Screening: Single screened.)
 - d. Acidity range (pH) of 5.5 to 7.5
 - e. Containing minimum of 5 percent and maximum of 30 percent organic matter.
 - f. Clay content ranges between 5% and 25%.

C. Organic Compost Material:

1. Product manufactured through the controlled aerobic, biological decomposition of biodegradable materials. The product has undergone mesophilic and thermophilic temperatures, which significantly reduces the viability of pathogens and weed seeds, and stabilizes the carbon, such that it is beneficial to plant growth. Compost is typically used as a soil amendment but may also contribute plant nutrients.
 - a. Acidity range (pH) 5.5 to 8.5
 - b. Soluble Salts (EC) 0.6 to 3 mS/cm
 - c. Stability (CO₂-C/g OM/day) ≤2.0
 - d. Maturity (TMECC 05.05, Germination & Vigor) ≥80%
 - e. Pathogen free
 - f. Screening
 - g. Passing 1-inch sieve – 100%
 - h. Passing 5/8-inch sieve - 85-100%
 - i. Passing 1/4-inch sieve – 75-100%
 - j. Clean, free of debris, non-organic material, roots, plants, sod, stones and clay lumps.
2. Composted yard waste and leaf litter used as soil amendment and mulch.
 - a. Hot Composting/Curing Period: Minimum 3 months
 - b. Cold Composting/Curing Period: Minimum 1 year.
 - c. Compost Tumblers & Curing Period: Minimum 2 months

D. Planting Soil Mixture

1. Combined soil mixture of 50% topsoil and 50% STA compost, mixed off-site and imported that supports the germination and healthy growth of plants.
- E. Organic Wood Mulch, Chipped Wood Mulch (Wood Chips)
1. Aged, decorative hardwood chips natural color or dyed as specified for planting beds and mulch rings.
 2. Arborist chips with greens are not permitted.
 3. Not to be installed in flood-prone areas.
- F. Hardwood Bark:
1. Premium hardwood bark, natural brown in color or dyed as indicated for planting beds and mulch rings.
 2. Color to be indicated in Pay-Item Description and Bid Item.
 3. Composition: Minimum 95% bark content
 4. Processing of single, double, or triple shredded texture to be indicated in Pay-Item Description and Bid Item.
 5. Composting Period: Minimum six (6) months

2.3 ACCESSORIES

- A. Fertilizer
1. Containing a 1:1 to 1:1.5 nitrogen (N) to potassium (P) ratio.
 2. Designated for starting turf growth.
 3. Common formulations: 18-24-8, 10-10-10, 12-24-12
 4. Application Rate: As specified by Manufacturer based on the spreading equipment.
 5. Application Timing: At the time of seeding/sodding
- B. Peat Moss: Shredded, fibrous, loose, lightweight, sphagnum moss; free of lumps, roots, inorganic material or acidic materials; minimum of 85 percent organic material measured by oven dry weight, pH range of 3.5 to 4.5 (acidic).
- C. Exhibit Soil Mix Material:
1. Off-site manufactured or processed soil mixture of washed angular sand, fines (silt/clay) and/or organic/synthetic fiber, for the purpose to resist compaction, drain quickly and provide a secure footing base for the exhibit animals.
 2. Material Composition:
 - a. Washed Angular Sand: 85-92%
 - b. Fines (Silt/Clay): 3-6%
 - c. Organic/Synthetic Fiber: 3-5%
 3. Gradation Requirements (Washed Angular Sand)

Sieve Size	Percent Passing
3/8" (9.5 mm)	100%
No. 4 (4.75 mm)	95–100%
No. 16 (1.18 mm)	55–85%

No. 50 (300 µm)	15–30%
No. 200 (75 µm)	3–6%

4. Engineered Wood Fiber: Processed, consistent and clean lignocellulosic material manufactured, not shredded from virgin wood of maple, oak, ash, pine or spruce to improve footing stability, moisture regulation and shock absorption, free from treated or painted wood, recycled pallets or demolition debris, leaves, needles or organic decay with less than 15% bark content.

Property	Requirement
Particle Shape	Elongated fibrous strands
Fiber Length	0.5 in – 2.5 in
Fines Content (<1/4")	≤ 10%
Oversized Pieces (>3")	≤ 5%
Bulk Density	10–18 lb/ft ³
Moisture Content	15–35% at delivery
Color	Natural wood (light tan to brown)

- D. Bone Meal: Raw, finely ground, commercial grade, bone meal, with a minimum of 3 percent nitrogen (N), 13 percent phosphorous (P) 22 percent calcium (Ca), pH range of 6.5 to 7.0 (alkaline)
- E. Lime: Ground limestone, dolomite type, minimum 95 percent Calcium Carbonates Equivalent (CCE), for raising soil pH.
- F. Water: Clean, fresh, and free of substances or matter capable of inhibiting vigorous growth of plants.
- G. Herbicide: A pre/post emergent and/or selective/non-selective chemical substance used to control, suppress or eliminate unwanted vegetation, in liquid, granular or ready-to-use (RTU) mix.
 - 1. Requires certified applicator's license for commercial applications.
- H. Pesticide: A liquid, granular, dust, powder or aerosol for insecticide, fungicide, rodenticide, bactericide and nematocidal substance or mixture intended to prevent, destroy, repel, or mitigate pests.

2.4 SOURCE QUALITY CONTROL

- A. Verify organic content, pH, and nutrient levels through laboratory testing.
- B. Analyze to determine percentage of nitrogen, phosphorus, potash, soluble salt, organic matter, and pH.
- C. Provide recommendation for fertilizer, amendment application rates or alternative material source to meet specifications when test indicate materials do not meet specifications and retest.

PART 3 EXECUTION

3.1 INSTALLERS

- A. Not Used.

3.2 EXAMINATION

- A. Verify subsoil base has been contoured and prepared (compaction, if applicable) to the specified contours or grades on the Contract Drawings.
- B. Proceed with installation of organic soil materials for surface applications after all excavation activity is completed.

3.3 PREPARATION

- A. Protect all existing trees, structures, fences, sidewalks, utilities, paving and curbs.
- B. In areas overgrown with herbaceous weeds, more than 6-inches in height, mechanically mow, rake, removed cuttings, and treat lawn areas a minimum two (2) weeks prior to subsoil preparation with herbicide, such as glyphosate per label directions as required to kill existing vegetation.

3.4 EXCAVATING AND STOCKPILING EXISTING ORGANIC SOIL MATERIALS ON SITE

- A. Excavate and strip topsoil from areas designated to full depth of topsoil, without mixing of foreign or underlying materials.
- B. Stockpile excavated material meeting requirements for topsoil in designated on site or off site as approved by the Engineer.
- C. Construct stockpiles to drain freely and protect from erosion.
- D. Remove excess excavated soils and subsoils not intended for reuse from Site.
- E. Remove excavated materials not meeting requirements for topsoil from Site.

3.5 INSTALLATION OF ORGANIC SOIL MATERIALS (TOPSOIL)

- A. Unless otherwise specified, install all topsoil to a depth three inches (3-inch) with a tolerance of plus or minus half inch (1/2-inch) for surface applications.
- B. Spread topsoil to the designated depth of over area to be seeded. Rake until smooth.
- C. Place topsoil during dry weather and on dry unfrozen subgrade.
- D. Remove vegetable matter and foreign non-organic material from topsoil while spreading.
- E. Grade topsoil to eliminate rough, low or soft areas, and to ensure positive drainage.

3.6 APPLICATION OF SOIL AMENDMENTS AND FERTILIZER

- A. When soil tests indicate soil amendment, apply soil conditioners or fertilizers to amend soil to specified conditions.
- B. Apply starter fertilizer at a rate of 1 pound per 1,000 square foot
- C. Apply after initial raking of topsoil.
- D. Mix thoroughly into upper two inches (2-inch) of topsoil and seeded mixture.
- E. Lightly water soil to aid dissipation of fertilizer.

3.7 INSTALLATION OF ORGANIC PLANT SOIL MIXES IN PLANTING BEDS

- A. Place planting bed mixture in excavated planting bed areas as designated on Contract Drawings to the specified lifts and thickness.
- B. Till the first lift of planting bed mixture into the existing subsoil to a depth specified on the Contract Drawings.
- C. Add additional lifts of planting bed mixture into the previous tilled lift and repeat until the planting bed meets the desired grade or elevation to receive plant material and mulch.
- D. Remove any stone or rocks larger than one inch (1-inch) from the planting bed areas that may have been tilled up from existing subsoils.

3.8 INSTALLATION OF ORGANIC MULCH MATERIALS

- A. Spread mulch to a uniform depth over the prepared surface.
- B. Ensure complete coverage of the designated areas, avoiding gaps or thin spots.
- C. Flow and Edges: Maintain clean, defined edges for aesthetic appeal and containment.
- D. Do not compact mulch; it should be loose to allow for air and water movement.

3.9 [REPAIR] / [RESTORATION] REINSTALLATION

- A. Not Used.

3.10 FIELD [OR] SITE QUALITY CONTROL

- A. Furnish imported material load tickets from the approved source(s) throughout the Work.
- B. Field [OR] Site Tests and Inspections
 - 1. The Owner or Engineer will provide visual inspection and/or other acceptance tests of organic soils and mulch materials
- C. Nonconforming Work
 - 1. Subgrade areas without the specified depth coverage of topsoil areas.

SECTION 32 92 19

DS_TURF ESTABLISHMENT BY SEEDING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Materials
 - a. Turf Grass Seed
 - b. Native Seed
 - c. Mulch
 - d. Chemical Binders and Tackifiers
 - e. Hydroseeding Slurry Mixes
 - 2. Sowing of Permanent Seed Mix
 - 3. Anchoring by Mulching
 - 4. Anchoring by Mulching using Chemical Binders and Tackifiers
 - 5. Anchoring by Hydroseeding
 - 6. Maintenance

- B. This Section does not include temporary seeding for soil erosion and sedimentation control.

- C. Products Furnished or Supplied but Not Installed under This Section
 - 1. None.

- D. Products Installed but Not Furnished or Supplied under This Section
 - 1. Section 31 25 00 – Erosion and Sedimentation Controls
 - 2. Section 31 25 14 – Rolled Erosion Control Products

- E. Related Requirements
 - 1. Section 31 25 00 – Erosion and Sedimentation Controls
 - 2. Section 31 22 19 – Finish Grading
 - 3. Section 32 91 19 – Landscape Grading

1.2 PRICE AND PAYMENT PROCEDURES

- A. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this section shall be factored into the other Contract unit bid prices.

- B. **Turf Seed Mix, Mix A, SQUARE YARD (SYD)**
Includes the installation of all organic soil materials, sowing, seeding, fertilizing, mulching, watering, and maintenance for the surface application indicated. Mix Types:
 - 1. Mix A - non-irrigated lawns, parks, and athletic fields.

- C. **Upland Seed Mix, 4" Topsoil.....SQUARE YARD (SYD)**
Includes the installation of all organic soil materials, sowing, seeding, fertilizing, mulching, watering, and maintenance for the surface application indicated.

- D. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.

1.3 REFERENCES

- A. Abbreviations and Acronyms Definitions
 1. EFM – Engineered Fiber Matrix
 2. MDOT – State of Michigan Department of Transportation
 3. MDARD – The State of Michigan Department of Agriculture & Rural Development
 4. TPI – Turfgrass Producers International

- B. Definitions
 1. Weeds - Vegetative species other than specified species to be established in given area.
 2. Dormant Seeding - Seeding placed in late November and December in the State of Michigan when plant growth ends for the season. Seeds are placed on unfrozen ground and mulched to lie dormant over the winter and germinate the following Spring-season.
 3. Hydromulching - Spraying mulch with water and mulch-anchoring material onto a prepared seed bed.
 4. Hydroseeding - Spraying seed and fertilizer combined with water and mulch-anchoring material onto a prepared seed bed.
 5. Mulch - Material placed over seeding to improve germination by conserving moisture, moderating the soil temperature, and protecting the seed and soil from water and wind erosion.
 6. Mulch Anchor – Glue-type material sprayed over mulch to secure the mulch material in place.
 7. Tackifiers – A plant-based or polymeric liquid binder for hydroseeding or binding loose straw mulch for seed germination.
 8. Turf Reinforcement Mat – Three-dimensional matrix of synthetic or a composite of synthetic and natural materials that is used to permanently control erosion.

- C. Reference Standards
 1. MDOT – 2020 Standard Specifications for Construction
 2. MDARD - Quality Standards.
 3. TPI - Guidelines

1.4 ADMINISTRATIVE REQUIREMENTS

- A. None.

1.5 SUBMITTALS

- A. Seed Mix
 1. Material Source(s): Submit the company name, and location (address) of material source(s).
 2. Manufacturer's Certificate: Certify materials and products meet or exceed specified requirements.

1.6 CLOSEOUT SUBMITTALS

- A. None.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Not Used.

1.8 QUALITY ASSURANCE

- A. Seed Suppliers Qualifications: Company specializing in manufacturing products specified in this Section with minimum three years of documented experience.
- B. Installer Qualifications: A company specializing in landscape installation, planting and restoration with a minimum of five years of documented experience and certified by the Michigan Nursery and Landscape Association (MNLA).
- C. Seed Germination Rate: A germination rate greater than or equal of 85%, after 21 days after seed installation, as indicated on the seed label.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging. Damaged packaging is not permitted.
- B. Store seed in a protected environment to prevent deterioration in accordance with the Nursery or Manufacturer's Instructions.
- C. Protect tackifier emulsions from freezing and prolonged exposure to sunlight prior to application.

1.10 FIELD OR SITE CONDITIONS

- A. A minimum soil temperature of 50 degrees F (10 degrees C) is required for all seeding operations. Ambient air temperatures may vary when compared to soil temperatures.
- B. Unless irrigation and shading are provided, do not install seed over a maximum air temperature of 85 degrees F (29 degrees C), to avoid heat stress and rapid moisture loss.
- C. Seasonal Limitations:
 - 1. Spring (March-June):
 - a. Seeding to begin once the soil is workable and frost risk is minimal, typically late March to Early June.
 - 2. Summer (June-August):
 - a. Application of seed during this period can only be completed with enhanced irrigation protocols to support germination, such as an irrigation system, regular schedule for manual watering.
 - 3. Fall (September-November):
 - a. All seeding to be completed before the first hard frost, where soil temperatures must remain above 50 degrees F (10 degrees C), which typically ends in November.
- D. Permanent Seeding.
 - 1. Permanently seed the following locations during the specified periods:

- a. Michigan Southern Lower Peninsula: South of the north boundary of Township 20 North; April 15 through October 10.
 - b. Michigan Northern Lower Peninsula: North of the north boundary of Township 20 North; May 1 through October 1.
 - c. Michigan Upper Peninsula: May 1 through September 20.
- E. Dormant Seeding
- 1. Dormant seed the following locations during the specified periods:
 - a. Michigan Southern Lower Peninsula. South of the north boundary of Township 20 North; after November 15, but not on frozen ground.
 - b. Michigan Upper Peninsula and Northern Lower Peninsula. North of the north boundary of Township 20 North; after November 1, but not on frozen ground.

1.11 WARRANTY OR BOND

- A. Maintenance of seeding performed by the Contractor consists of watering, fertilizing, topdressing with topsoil, reseeding bare spots, and mowing for a period of six weeks. Maintenance includes:
- 1. Applying herbicides for weed control, as required in accordance with Manufacturer's instructions.
 - 2. Remedy damage resulting from use of herbicides.
 - 3. Remedy damage from use of insecticides.
 - 4. Disease control.
- B. General maintenance, including weekly irrigation throughout the remainder of the growing season, shall be accomplished by the Owner following the initial maintenance requirements as noted above.
- C. At the end of this period of initial maintenance, the Owner will accept the various portions of the work, provided the requirements of the specifications have been fulfilled.
- D. During the specified warranty period, conduct monthly inspections and advise the Owner of watering excesses or deficiencies during the guarantee period.

PART 2 PRODUCTS

2.1 OWNER-FURNISHED OR OWNER-SUPPLIED PRODUCTS

- A. Not Used.

2.2 MATERIALS

- A. MDOT Turf Seed Mix A
- 1. Description: MDOT THM – High-quality seed mix for seeding non-irrigated lawns, park and athletic fields. Meets seed mix requirements of the MDOT 2020 Standard Specifications for Construction
 - 2. Perennial Ryegrass: 20 percent.
 - 3. Kentucky Blue Grass: 30 percent.
 - 4. Creeping Red Fescue Grass: 50 percent.

- B. Turf Seed Mix B
 - 1. Description: High-quality seed mix for seeding irrigated athletic fields.
 - 2. Perennial Ryegrass: 50 percent.
 - 3. Kentucky Blue Grass: 40 percent.
 - 4. Creeping Red Fescue Grass: 10 percent.

- C. MDOT Turf Seed Mix C
 - 1. Description: MDOT TUF – For non-irrigated roadside areas. Meets seed mix requirements of the MDOT 2020 Standard Specifications for Construction.
 - 2. Perennial Rye Grass: 20 percent.
 - 3. Kentucky Blue Grass: 10 percent.
 - 4. Creeping Red Fescue Grass: 40 percent.
 - 5. Hard Fescue: 20 percent.
 - 6. Faults Salt Grass: 10 percent.

- D. Detention Basin Seed Mix
 - 1. Description: Suitable for wet to mesic soil conditions.
 - 2. Native Grasses, Sedges and Rushes: 70 percent.
 - 3. Native Forbs (Wildflowers): 30 percent.
 - 4. Cover Crop – Locally sourced Annual Ryegrass or Oats.

- E. Emergent Wetland Seed Mix
 - 1. Description: Suitable for areas with temporary standing water up to 6 inches deep.
 - 2. Native Grasses, Sedges and Rushes: 60 percent.
 - 3. Native Forbs (Wildflowers): 40 percent.
 - 4. Cover Crop – Locally sourced Annual Ryegrass or Oats.

- F. Upland Prairie Seed Mix
 - 1. Description: Suitable for mesic to dry soil conditions.
 - 2. Native Grasses, Sedges and Rushes: 50 percent.
 - 3. Native Forbs (Wildflowers): 50 percent.
 - 4. Cover Crop – Locally sourced Annual Ryegrass or Oats.

- G. Pollinator Seed Mix
 - 1. Description: Suitable for mesic to dry soil conditions.
 - 2. Native Grasses, Sedges and Rushes: 30 percent.
 - 3. Native Forbs (Wildflowers): 70 percent.
 - 4. Cover Crop – Locally sourced Annual Ryegrass or Oats.

- H. Woodland Seed Mix
 - 1. Description: Suitable for loamy, mesic soils typically found in forested areas.
 - 2. Native Grasses, Sedges and Rushes: 75 percent.
 - 3. Native Forbs (Wildflowers): 25 percent.
 - 4. Cover Crop – Locally sourced Annual Ryegrass or Oats.

2.3 ACCESSORIES

- A. Mulch Anchoring Tackifiers:
 - 1. Plant-Based: Biodegradable, non-toxic starch, psyllium or gum-based products per manufacturer recommended application rate.

-
- a. Guar Gum
 - 1) Consists of at least 95 percent guar gum by weight and remaining weight consisting of dispersing and crosslinking additives.
 - b. Other
 - 1) Water soluble natural vegetable gums, guar gums blended with gelling and hardening agents, or a water-soluble blend of hydrophilic polymers, viscosifiers, sticking aids, and other gums as tackifiers.
 2. Polymeric: Non-toxic, non-flammable, water permeable acrylic copolymers or methacrylate/acrylate blends per manufacturer's recommended application rate.
 - a. Must be a polymeric emulsion blend of acrylic polymers or copolymers, with a minimum 55 percent solid content.
 - b. May be liquid or dry form but must be readily miscible in water and permeable.
 - c. Polymeric emulsion to have a minimum shelf life of one year.
 3. Bio-degradable fillers
 - a. Recycled Newsprint and paper fibers
 - 1) Specially prepared, biodegradable, shredded, recycled newsprint fibers
 - 2) Moisture content no greater than 12 percent.
 - 3) Content 96 percent by weight dry.
 - 4) Includes a tackifier content from 1.5 to 3 percent by weight.
 - 5) Has a water-holding capacity of at least 32 ounces per 3.5 ounces of fiber.
 - 6) Contains a wetting agent and a defoaming agent.
 - 7) Contains a nontoxic bright green or blue chemical dye that adheres to the fiber to minimize leaching of the color after application.
 - b. Wood Fibers
 - 1) Specially prepared, biodegradable, shredded, recycled newsprint fibers
 - 2) Moisture content no greater than 12 percent.
 - 3) Content 95 percent by weight dry.
 - 4) Includes a tackifier content from 3 to 5 percent by weight.
 - 5) Has a water-holding capacity of at least 35 ounces per 3.5 ounces of fiber
 - 6) Contains a nontoxic bright green or blue chemical dye that adheres to the fiber to minimize leaching of the color after application.
 - 7) Contain no growth or germination-inhibiting materials.
 - B. Engineered Fiber Matrix (EFM) Mulch Anchoring for Hydromulching Applications:
 1. Virgin wood cellulose fiber-based mulch with a tackifier, free from growth-inhibiting substances and dyed for visibility during application.
 2. Engineered fiber matrix (EFM) including:
 - a. Long strand, virgin wood fibers (77 percent by weight)
 - b. Crimped Biodegradable Interlocking Fibers (2.5 percent by weight)
 - c. Micro-Pore Granules (2.5 percent by weight)
 - d. Pre-blended, high strength poly-saccharine polymer adhesive (18 percent by weight)
 3. The virgin wood fibers must be thermo-mechanically defiladed from clean whole wood chips, containing a minimum of 25 percent of the fibers averaging 7/16 of an inch long, with a minimum of 50 percent or more retained on the No. 25 sieve size.
 4. The organic binders must be a high viscosity colloidal poly-saccharine tackifier (4,000 centipoise) with activating agents to render the resulting matrix insoluble upon drying.
 5. Engineered fiber matrix (EFM) shall be 90-day biodegradable.

- C. Bonded Fiber Matrix (BFM) Mulch Anchoring for Hydromulching Applications
 - 1. Hydraulic mulch with elongated fibers held by water-resistant binders, creating a strong, continuous layer that bonds to soil.
- D. Rolled Erosion Control Mulch Blankets (Straw and Excelsior Mulch Blankets)
 - 1. In Accordance with Section 31 05 19 – Geotextiles for Earthwork
- E. Mulch Netting
 - 1. In Accordance with Section 31 05 19 – Geotextiles for Earthwork
- F. Mulch Net Anchors
 - 1. in Accordance with Section 31 05 19 – Geotextiles for Earthwork

2.4 SOURCE QUALITY CONTROL

- A. Not Used.

PART 3 EXECUTION

3.1 INSTALLERS

- A. Not Used.

3.2 EXAMINATION

- A. Verify ground conditions are suitable and free of debris, weeds, and obstructions.
- B. Review weather conditions, including ambient air temperature and soil temperatures prior to permanent seeding installations

3.3 PREPARATION

- A. The seed bed shall be prepared to the final contours and grades specified, and the seed bed shall be raked, harrowed, and tracked in a friable condition.

3.4 INSTALLATION OF PERMANENT SEED MIX (SOWING)

- A. While the seed bed is in a friable condition, sow seed with or following the application of fertilizer. Sow seed before applying mulch.
- B. Sow using mechanical drills, hydroseeders, or by broadcasting. In areas with a slope of 1:4 or flatter, use mechanical drills.
- C. Broadcast and apply seed according to the application rate of each product in two intersecting directions and rake in lightly. Lightly compact or rake areas sown by hydroseed or broadcast methods to incorporate the seed into the top ½ inch of the topsoil.
- D. Do not sow areas more than that which can be mulched on same day.

- E. Postpone the sowing of seeds during active or following rainfall, when ground is too dry, or when winds are over 12 miles per hour.
- F. Apply water with fine spray immediately after each area has been mulched. Saturate to 4 inches (100 mm) of soil.

3.5 ANCHORING BY MULCHING (HYDROMULCHING)

- A. Provide, spread, and anchor mulch material. Do not mulch during winds that prevent placement and anchoring of the mulch.
- B. Place mulch to allow sunlight to penetrate and air to circulate but thick enough to shade the ground, conserve soil moisture, and prevent or reduce water and wind erosion.
- C. Spread the mulch over the surface to a uniform thickness with an application rate of two tons per acre. Apply herbicide after seed germinates and turf is established. The mulch thickness should be sufficient to prevent erosion but not so thick as to hinder seed germination.

3.6 ANCHORING USING ROLLED EROSION CONTROL PRODUCTS

- A. In Accordance with Section 31 25 14 – Rolled Erosion Control Products

3.7 ANCHORING BY HYDROMULCHING USING CHEMICAL BINDERS AND TACIFIERS

- A. Spray mulch anchoring immediately after placing mulch. Do not spray if wind prevents the required placement of adhesive. The tackifier application should be at the Manufacturer's application rate to ensure mulch stability without overuse, which could inhibit seed emergence or create runoff issues.
- B. Protect traffic, signs, structures, and other objects from the tackifier material. Remove all overspray.

3.8 ANCHORING BY HYDROSEEDING

- A. Do not apply anchoring slurry on saturated soils or immediately before, during or after rainfall in accordance with the manufacturer's recommended timeframe for application for such conditions.
- B. EFM slurry must be applied in successive layers, from two or more directions, to fully cover 100 percent of the soil surface.
- C. Hydroseeding installations are permitted up to a maximum 1:3 slope for hydroseed mulch.
- D. Apply rates in accordance with the seed supplier, but no less than the following:
 - 1. For hydroseeded slopes steeper than 1:10, use an engineered fiber matrix. Apply fertilizer, mulch and seeded slurry with hydraulic seeder at minimum rate of 1,500 to 2,000 pounds per acre (1/8 inch thick) evenly in one pass.
 - 2. For hydroseeded slopes flatter than 1:10, use a bonded fiber matrix. Apply fertilizer, mulch and seeded slurry with hydraulic seeder at minimum rate of 2,000 to 3,000 pounds per acre (1/4 inch thick) evenly in one pass.
- E. After application, apply water with fine spray immediately after each area has been hydroseeded. Saturate to four (4) inches (100 mm) of soil and maintain moisture levels two to four inches.

- F. Empty the hydroseeder tank within one hour of introducing the seed and/or fertilizer to the tank. Dispose of tank contents that remain in the tank mixed with hydroseeder for longer than one hour.

3.9 REPAIR / RESTORATION / REINSTALLATION

- A. If an area washes out after EFM installation and acceptance and is the result of adverse weather, the Contractor will be required to make corrections to prevent future washouts and replace the topsoil, fertilizer, seed and EFM at no additional cost to the Owner.

3.10 FIELD OR SITE QUALITY CONTROL

- A. Field or Site Tests and Inspections
 - 1. Not Used.
- B. Nonconforming Work
 - 1. Areas where germination fails to occur shall be re-applied until growth is established, may include areas washed out by adverse weather, unprotected slopes without protected erosion control devices, or vehicular traffic.

3.11 SYSTEM STARTUP

- A. Not Used.

3.12 ADJUSTING

- A. Not Used.

3.13 CLEANING

- A. Not Used.

3.14 CLOSEOUT ACTIVITIES

- A. None.

3.15 PROTECTION

- A. Place seed protection immediately after seeding operations.

3.16 MAINTENANCE

- A. Mow grass at regular intervals to maintain at maximum height of 2-1/2 inches.
 - 1. Do not cut more than 1/3 of grass blade at each mowing. Perform first mowing when seedlings are 40 percent higher than desired height.
 - 2. Neatly trim edges and hand clip where necessary.
 - 3. Immediately remove clippings after mowing and trimming. Do not let clippings lay in clumps.
- B. Maintain the mulched areas and repair areas damaged by erosion, traffic, or other adverse conditions before acceptance. Replace displaced mulch.

- C. Replace and anchor mulch that blows away or becomes displaced in result of non-conforming work or areas that previously lacked adequate anchoring.
- D. Water to prevent grass and soil from drying out.
- E. Control growth of weeds. Apply herbicides. Remedy damage resulting from improper use of herbicides.
- F. Re-seed areas showing bare spots during the Maintenance Period.
- G. Repair washouts or gullies caused by adverse weather conditions.

3.17 ATTACHMENTS

- A. None.

END OF SECTION

- D. Manufacturer Services
 - 1. None

- 3.11 SYSTEM STARTUP
 - A. Not Used.

- 3.12 ADJUSTING
 - A. Not Used.

- 3.13 CLEANING
 - A. Not Used.

- 3.14 CLOSEOUT ACTIVITIES
 - A. None.

- 3.15 PROTECTION
 - A. Protect all other structures, utilities, paving and other above grade appurtenances during the installation of topsoil materials.
 - B. Protect organic soils and mulch from erosion, contamination, and disturbance during construction.
 - C. Prohibit equipment heavy foot traffic over installed topsoil, mulched, and planting areas that would cause damage to grades and contours in the project area, such as rutting, erosion, tire tracks, holes and potholes, adverse compaction, and other surface disruption.

- 3.16 MAINTENANCE
 - A. Surface applications of organic soils affected by adverse weather during installation are to be adjusted and corrected to the correct depth specified.

- 3.17 ATTACHMENTS
 - A. None.

END OF SECTION

SECTION 32 93 00

DS_PLANTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Nursery Stock
 - a. Deciduous Shade Trees
 - b. Smal trees, Ornamentals, and Shrubs
 - c. Evergreen Trees
 - d. Vines, Ground Cover Plants, and Herbaceous Ornamental Plants.
 - 2. Installation Accessories
 - 3. Balling and Mulching Materials
 - 4. Installation
 - 5. Plant Fertilizer
 - 6. Pruning
 - 7. Maintenance
- B. Plant material schedules as listed on Contract Drawings, include symbol/label, quantity, common name, botanical name, nursery size, root ball type and comments. Other information may include form/structure, flower color/period and other information for intended use of the plant material.
- C. Products Furnished [OR] Supplied but Not Installed under This Section
 - 1. None.
- D. Products Installed but Not Furnished [OR] Supplied under This Section
 - 1. Section 32 91 19 – Landscape Grading
- E. Related Requirements
 - 1. Section 32 91 19 – Landscape Grading

1.2 PRICE AND PAYMENT PROCEDURES

- A. If no separate bid-item under the Bid Form is provided by the Owner, all costs for the work described in this section shall be factored into the other contract bid prices.
- B. No allowance or extra consideration on behalf of the Contractor will subsequently be allowed by reason of error or oversight on the part of the Contractor.
- C. **TREES EACH (EA)**
Includes the excavation and preparation of existing soil, topsoil and planting mix soil, placement of plant material, mulch ring, fertilizing, staking, watering, pruning and maintenance as specified.
 - 1. Parkland Pillar White Birch (Betula platyphylla 'Jefpark') EACH (EA)
 - 2. Tuliptree (Liriodendron tulipifera) EACH (EA)
 - 3. Swamp Tupelo (Nyssa biflora) EACH (EA)
 - 4. Bur Oak (Quercus macrocarpa) EACH (EA)

- 5. White Oak (*Quercus alba*) EACH (EA)

- D. **FERNS, PERENNIALS, AND SEDGES** (1 gal Pot) EACH (EA)
Includes the excavation and preparation of existing soil, topsoil and planting mix soil, placement of plant material, mulch ring, fertilizing, staking, watering, pruning and maintenance as specified.
 - 1. Interrupted Fern (*Osmunda claytoniana*) EACH (EA)
 - 2. Sensitive Fern (*Onoclea sensibilis*) EACH (EA)
 - 3. Eastern Marsh Fern (*Thelypteris palustris*) EACH (EA)
 - 4. White Wild Indigo (*Baptisia alba*) EACH (EA)
 - 5. Blue Wild Indigo (*Baptisia australis*) EACH (EA)
 - 6. Purple Coneflower (*Echinacea purpurea*) EACH (EA)
 - 7. Pennsylvania Sedge (*Carex pensylvanica*) EACH (EA)
 - 8. Fox Sedge (*Carex vulpinoidea*) EACH (EA)
 - 9. Woods Sedge (*Carex woodii*) EACH (EA)

- E. **PERENNIALS & SEDGES** (Plugs) EACH (EA)
Includes the excavation and preparation of existing soil, topsoil and planting mix soil, placement of plant material, mulch ring, fertilizing, staking, watering, pruning and maintenance as specified.
 - 1. Wild Ginger (*Asarum canadense*) EACH (EA)
 - 2. Bicknell's Sedge (*Carex bicknellii*) EACH (EA)
 - 3. Fox Sedge (*Carex vulpinoidea*) EACH (EA)
 - 4. Canada Wildrye (*Elymus canadensis*) EACH (EA)
 - 5. Purple Coneflower (*Echinacea purpurea*) EACH (EA)
 - 6. Switchgrass (*Panicum virgatum*) EACH (EA)
 - 7. Green Coneflower (*Rudbeckia lacinata*) EACH (EA)
 - 8. Missouri Ironweed (*Vernonia missurica*) EACH (EA)
 - 9. New England Aster (*Symphotrichum novae-angliae*) EACH (EA)

1.3 REFERENCES

- A. Abbreviations and Acronyms Definitions
 - 1. ANSI – American National Standards Institute
 - 2. FSC - Forest Stewardship Council
 - 3. MDOT – State of Michigan Department of Transportation
 - 4. MDARD - The State of Michigan Department of Agriculture & Rural Development
 - 5. USDA - United States Department of Agriculture

- B. Definitions
 - 1. Defective Plant: Any plant that fails to meet the minimum specification for health, structure and quality as outlined in ANSI Z60.1, such as a poor root system, damage to trunk or stems, presence of pests/diseases or improper size or form.
 - 2. Maintenance: Actions that preserve the health of plants after installation and as defined in this specification.
 - 3. Plants: Living trees, plants, and ground cover specified in this Section and described in ANSI Z60.1.
 - 4. Weeds - Vegetative species other than specified species to be established in given area.

- C. Reference Standards
 - 1. ANSI A300 - Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance - Standard Practices.

2. ANSI Z60.1 - Nursery Stock.
3. International Society of Arboriculture, Champaign IL, most current edition. - Glossary of Arboricultural Terms
4. Michigan Nursery and Landscape Association
5. MDOT – 2020 Standard Specifications for Construction.
6. FSC Guidelines - Forest Stewardship Council Guidelines
7. USDA - The Germplasm Resources Information Network. Arboricultural Terminology
8. Structural Pruning: A Guide For The Green Industry - most current edition; published by Urban Tree Foundation, Visalia, California.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. None.

1.5 SUBMITTALS /

- A. Plant Growers' Certificates: Submit plant growers' certificates for all plants indicating that each meets the requirements of the specification, including the requirements of tree quality, to the Engineer for approval.
- B. Product Data: Submit list of plant material sources, data for fertilizer, and other planting accessories.

1.6 CLOSEOUT SUBMITTALS

- A. Provide recommended pruning, watering and fertilization objectives, types and methods, including frequency and coverage recommendations.

1.7 MAINTENANCE MATERIAL SUBMITTALS

- A. Not Used.

1.8 QUALITY ASSURANCE

- A. Nursery Stock: American Standard for Nursery Stock (ANSI Z60.1)
 1. All deciduous plant material is dug during appropriate dormancy periods to minimize transplant shock and ensure root system integrity.
 2. Root balls are sized according to ANSI Z60.1 specifications, ensuring proper proportions relative to caliper and height.
 3. Plants are handled with care to prevent damage to trunks, branches, and root systems during excavation and transport.
 4. Digging operations comply with Michigan Department of Agriculture and Rural Development (MDARD) guidelines and any applicable local ordinances.
- B. Tree Pruning: ANSI A300 Pruning Standards for Woody Plants.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver fertilizers in waterproof bags showing weight, chemical analysis, and name of manufacturer.

- B. Deliver all plant materials early morning or late afternoon to reduce heat stress, especially during the summer months.
- C. Protect all plant materials during transportation in climate-controlled vehicles or covered to shield plant from wind, sun and adverse temperatures.
- D. All plant materials must be labeled with species, size, and origin to maintain traceability and transparency.
- E. A maximum one (1) week short-term storage will be allowed for all delivered plant materials. Plant materials must be stored in shaded, well ventilated areas while keeping the root balls/containers moist but not waterlogged, stacked or crowded.
- F. Long-term storage, (greater than one (1) week) of plant material may be allowed, by the Engineer or Owner, provided the Contractor locates an appropriate storage yard and submit a long-term storage maintenance plan protecting the health and viability of the plant material.
- G. Plant material(s) damaged as a result of delivery, storage or handling will be rejected by the Owner or Engineer.

1.10 FIELD [OR] SITE CONDITIONS

- A. A minimum soil temperature of 50°F (10°C) is required for all plant materials, including trees, shrubs, perennials and grasses.
- B. Unless irrigation and shading are provided, do not install plant materials over a maximum air temperature of 85°F (29°C), to avoid heat stress, rapid moisture loss and transplant shock.
- C. Seasonal Planting Requirements
 - 1. Spring (March-May)
 - a. Planting begins once the soil is workable and frost risk is minimal, typically late March to May for container-grown or balled and burlapped plant materials.
 - 2. Summer (June-August)
 - a. Container-grown or burlapped plant materials to be planted with enhanced irrigation protocols to support root development, such as manual watering, watering bags or permanent/temporary irrigation systems.
 - b. Mulching and shading techniques to be used to mitigate heat stress and moisture loss.
 - 3. Fall (September-November)
 - a. All plantings are to be completed before the first hard frost, typically late October.

1.11 WARRANTY [OR] BOND

- A. The Contractor shall guarantee that all plants are true to botanical name and that the quality and size meet specifications, as are required herein.
 - 1. The Contractor shall fully guarantee that all plants are in a vigorous growing condition during and at the end of the guarantee period. The guarantee period shall expire one (1) year from the date of acceptance by the Owner.

2. The Contractor shall replace plants that do not meet these specifications or ones that have lost their natural shape due to dead branches, excessive pruning, or inadequate or improper contractor maintenance. All plants rejected shall be removed from the site and legally disposed of by the contractor at no additional cost to the Owner.
3. Replacement plants and planting operations shall be in accordance with the original specifications. All costs for such replacements shall be included in the bid price. Replacement planting shall be completed no later than the next succeeding planting season. All replacement plants shall be guaranteed for an additional period of one (1) year. All areas damaged by replacement operations shall be fully restored by the contractor to their original and/or specified condition.
4. The Contractor shall not assume responsibility during the guarantee period for damage resulting from natural causes such as floods, lightning storms, freezing rains or winds over 60 miles per hour. The Contractor will also not be held responsible for damages resulting from acts of negligence on the part of the Owner or others occupying the site, fire or vandalism.

PART 2 PRODUCTS

2.1 OWNER-FURNISHED [OR] OWNER-SUPPLIED PRODUCTS

- A. None

2.2 MATERIALS

A. Nursery Stock

1. Meet the requirements of No. 1 Grade conforming to "American Standard for Nursery Stock" of American Association of Nurserymen (AAN);
 - a. Well-branched, vigorous and balanced root and top growth; free from disease, injurious insects, mechanical wounds, broken branches, decay, and other defects.
2. Meet Nursery Stock must meet the requirements of ANSI Z 60.1
 - a. Identification: Label individual plants or each bundle of plants when tied in bundles.
 - b. Species and size identifiable in plant schedule, grown in climatic conditions similar to those in locality of the Work.
3. Species and size identifiable in plant schedule, grown in climatic conditions similar to those in location of the Contract location or indicated on the Contract Drawings.

B. Deciduous Trees

1. Must be straight and symmetrical with a persistent, central main leader. The crown must be in proportion to the total height of the tree.
2. Clumps must have at least two (2) stems originating from a common base at the groundline.

C. Small Trees, Ornamentals, and Shrubs

1. Must be well formed with a crown typical of each species or variety.
2. Pruning, shearing, or sculpting plants to meet the sizes shown on the Contract Drawings is not allowed.

- D. Evergreen Trees
 - 1. Must be typical of the species and not sheared or color treated.
 - 2. Evergreen trees specifically grown for Christmas-Holiday tree use is not permitted.
- E. Vines, Herbaceous Ornamental Plants, and Ground-Cover Plants
 - 1. Must be in individual containers, at least one (1) year old grown in Containers long enough to ensure root growth capable of holding soil in place and retaining the container shape when removed from the Container.
 - 2. Vines must have at least four (4) runners thirteen (13) inches in length.
 - 3. Leaf and stem structure of ground-cover plants must be proportional to the root systems and typical of species or variety.
 - 4. Herbaceous plants must be in healthy and vigorous growing condition.

2.3 ACCESSORIES

- A. Wrapping Materials:
 - 1. Burlap: 100% natural, biodegradable, non-treated jute (hessian) material, 10oz/sq yd, with 9x8 thread count weave for plant material wind/frost protection and root ball wrapping.

SPECIFIER NOTE (REMOVE PRIOR TO FINAL COPY): Tree Wrap: 3"-6" wide [Polypropylene Fabric] [Paper (Kraft or Crepe)] [Burlap] roll to prevent sunscald, frost cracks, animal and mechanical damage.

- B. Stakes:
 - 1. Wood: 2"x2" natural, kiln-dried, untreated and biodegradable hardwood (Oak, Maple, Douglas Fir) stakes, with a sufficient length to meet staking requirements as specified and detailed.
 - 2. Steel: Hot rolled, galvanized, green enameled painted and studded stake, with a sufficient length to meet staking requirements as specified and detailed.
 - a. 1.25 lbs/ft
 - b. 3-stud anchor plate
 - 3. Ground Anchors: 4-3/4" x 1" diameter, lightweight, aluminum alloy, corrosion resistant anchors, with cable assembly, driven into the ground a minimum of 18" and locked into place.
- C. Cable/Wire & Accessories:
 - 1. Nylon strapping: Black or green, 100% high-strength, UV and weather resistant 3/4 inch (18mm) to 1 inch (25mm) wide woven nylon strap.
 - 2. Plastic strapping: High-density polyethylene (HDPE), polypropylene (PP), UV and weather resistant 3/4 inch (18mm) to 1 inch (25mm) wide plastic strap.
 - 3. Wire rope: 316-grade stainless steel, 7x19 stranded [1/8" (3mm)] [3/16 (5mm)] [1/4" (6mm)] wire
 - a. Minimum Tensile Strength: 200lbs
 - 4. Eyebolts: 1/4" (6mm) stainless steel
 - 5. Turnbuckles: 1/4" (6mm) stainless steel, hook-eye or eye-eye.
 - 6. Stem Interface: Soft, wide and flexible material to prevent girdling to be used on all strapping and rope materials.
- D. Plant Protectors: To protect plant stems, trunks, and branches.

1. Corrugated Plastic: 18" to 48" high, 4" diameter, slitted, UV-stabilized, [Twin-walled], ventilated polyethylene (PE) or Polypropylene (PP) tubing
2. Metal Mesh/Hardware Cloth: 18" to 48" high, 1/4" mesh, 23 gauge, stainless steel.

E. Plant Fertilizer

1. Plant fertilizers must be commercial-grade, packaged in granular or liquid form
2. Each Container must be marked with the content analysis showing the minimum percentages of total nitrogen, phosphoric acid, and soluble potash.

2.4 SOURCE QUALITY CONTROL

- A. Not Used.

PART 3 EXECUTION

3.1 INSTALLERS

- A. Not Used.

3.2 EXAMINATION

- A. Verify ground conditions are suitable and free of debris, weeds, and obstructions.
- B. Verify underground utility locations and irrigation systems have been installed in the proper location and are ready for use.

3.3 PREPARATION

- A. All subgrade shall be prepared to the final grade and contours established in accordance with the final work.
- B. Subsoil Preparation, Placing of Topsoil & Fertilizing: As specified in Section 310513 - Organic Soils, Mulch Materials & Preparation.
- C. Mechanically cut and remove adjoining grass/lawn areas a minimum of depth of 1 inch and 36 inches wide to provide a smooth transition with adjoining grass/lawn areas.
- D. Saturate soil with water to test drainage

3.4 INSTALLATION

- A. Remove foreign materials, weeds and undesirable plants and their roots. Remove contaminated subsoil.
- B. Dig pits three times wider than plant root ball system.
- C. Place, orient and set vertical plants for best appearance. Adjust as necessary upon review by Engineer.
- D. Remove non-biodegradable root containers.

- E. Set plants in pits or beds, partly filled with prepared plant soil mix, as indicated on Drawings under each plant. Remove burlap, ropes, and wires from the top half of root ball.
- F. Place bare root plant materials so roots lie in natural position. Backfill plant soil mixture in 6-inch (150 mm) layers. Maintain plant life in vertical position.
- G. For Fertilizer applications, provide ready-mixed granular fertilizer containing the Manufacturer's recommended mixture of phosphorous and potassium by weight. For fertilizing during watering applications, provide water soluble, nitrogen-enriched fertilizer containing the Manufacturer's recommended mixture of available nitrogen per unit of water.
- H. Saturate soil with water when pit or bed is half full of plant soil mix and again when full.
- I. Mulch pits, trenches and planted areas. Provide not less than 2-inch thickness of mulch and work into top of backfill and finished level with adjacent finish grades. Provide finished 4-inch thickness of mulch.

3.5 PLANT RELOCATION AND RE-PLANTING

- A. Relocate plants as indicated on drawings or directed by Engineer.
- B. Ball or pot removed plants when temporary relocation is more than (1) day and follow the Storage and Handling section of this specification.
- C. Temporary relocation of transplanted bare root materials is not allowed.
- D. Replant plants in pits or beds, partly filled with prepared topsoil mixture as indicated on Drawings under each plant. Remove burlap, ropes, and wires, from top half of root ball.
- E. Place bare root plant materials so roots lie in natural position. Backfill plant soil mixture in 6-inch (150 mm) layers. Maintain plant life in vertical position.
- F. Saturate soil with water when pit or bed is half full of topsoil and again when full.

3.6 [REPAIR] / [RESTORATION] REINSTALLATION

- A. Not Used.

3.7 FIELD [OR] SITE QUALITY CONTROL

- A. Field [OR] Site Tests and Inspections
 - 1. Conduct visual inspections , soil contact, and erosion control.
- B. Nonconforming Work
 - 1. Plants will be rejected when ball of earth surrounding roots has been disturbed or damaged prior to or during planting.
- C. Manufacturer Services
 - 1. Not Used.

3.8 SYSTEM STARTUP

A. Not Used.

3.9 ADJUSTING

A. Not Used.

3.10 CLEANING

A. Not Used.

3.11 CLOSEOUT ACTIVITIES

A. None.

3.12 PROTECTION

A. Wrap deciduous shade and flowering tree trunks and place tree protectors.

B. Place grates at base of trees where indicated on the Contract Drawings.

C. Brace plants vertically with plant protector wrapped guy wires and stakes.

D. Tree Support Method

1. Deciduous Trees: per Tree Caliper:

a. 1 Inch (25 mm): One stake with one wire rope.

b. 1 to 2 Inches (25 to 50 mm): Two stakes with two wire rope.

c. 2 to 4 Inches (50 to 100 mm): Three stakes, wire rope, with eye bolts and turnbuckles.

d. Over 4 Inches (100 mm): Four ground anchors, guy wire rope, with eye bolts and turnbuckles.

2. Evergreen Trees: per Tree Height

a. 4' to 6' High: Two stakes with two wire rope.

b. 6' to 12' High: Three stakes and wire rope, with eye bolts and turnbuckles.

c. Over 12' High: Four ground anchors, guy wire rope, with eye bolts and turnbuckles.

3.13 MAINTENANCE

A. Tree Pruning

1. When pruning trees is permitted, lightly prune trees according to ANSI A300 Maintenance Pruning Type: Crown Cleaning.

3.14 ATTACHMENTS

A. None.

END OF SECTION



Vendor Conflict of Interest Disclosure Form

All vendors interested in conducting business with the City of Ann Arbor must complete and return the Vendor Conflict of Interest Disclosure Form in order to be eligible to be awarded a contract. Please note that all vendors are subject to comply with the City of Ann Arbor's conflict of interest policies as stated within the certification section below.

If a vendor has a relationship with a City of Ann Arbor official or employee, an immediate family member of a City of Ann Arbor official or employee, the vendor shall disclose the information required below.

1. No City official or employee or City employee's immediate family member has an ownership interest in vendor's company or is deriving personal financial gain from this contract.
2. No retired or separated City official or employee who has been retired or separated from the City for less than one (1) year has an ownership interest in vendor's Company.
3. No City employee is contemporaneously employed or prospectively to be employed with the vendor.
4. Vendor hereby declares it has not and will not provide gifts or hospitality of any dollar value or any other gratuities to any City employee or elected official to obtain or maintain a contract.
5. Please note any exceptions below:

Conflict of Interest Disclosure*	
Name of City of Ann Arbor employees, elected officials or immediate family members with whom there may be a potential conflict of interest.	<input type="checkbox"/> Relationship to employee <hr/> <input type="checkbox"/> Interest in vendor's company <input type="checkbox"/> Other (please describe in box below)

*Disclosing a potential conflict of interest does not disqualify vendors. In the event vendors do not disclose potential conflicts of interest and they are detected by the City, vendor will be exempt from doing business with the City.

I certify that this Conflict of Interest Disclosure has been examined by me and that its contents are true and correct to my knowledge and belief and I have the authority to so certify on behalf of the Vendor by my signature below:		
Vendor Name	Vendor Phone Number	
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500, procurement@a2gov.org

CITY OF ANN ARBOR NON-DISCRIMINATION ORDINANCE

Relevant provisions of Chapter 112, Nondiscrimination, of the Ann Arbor City Code are included below.
You can review the entire ordinance at www.a2gov.org/humanrights.

Intent: It is the intent of the city that no individual be denied equal protection of the laws; nor shall any individual be denied the enjoyment of his or her civil or political rights or be discriminated against because of actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight.

Discriminatory Employment Practices: No person shall discriminate in the hire, employment, compensation, work classifications, conditions or terms, promotion or demotion, or termination of employment of any individual. No person shall discriminate in limiting membership, conditions of membership or termination of membership in any labor union or apprenticeship program.

Discriminatory Effects: No person shall adopt, enforce or employ any policy or requirement which has the effect of creating unequal opportunities according to actual or perceived age, arrest record, color, disability, educational association, familial status, family responsibilities, gender expression, gender identity, genetic information, height, HIV status, marital status, national origin, political beliefs, race, religion, sex, sexual orientation, source of income, veteran status, victim of domestic violence or stalking, or weight for an individual to obtain housing, employment or public accommodation, except for a bona fide business necessity. Such a necessity does not arise due to a mere inconvenience or because of suspected objection to such a person by neighbors, customers or other persons.

Nondiscrimination by City Contractors: All contractors proposing to do business with the City of Ann Arbor shall satisfy the contract compliance administrative policy adopted by the City Administrator in accordance with the guidelines of this section. All city contractors shall ensure 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 any classification protected by this chapter. All contractors shall agree not to discriminate against an employee or applicant for employment with respect to hire, tenure, terms, conditions, or privileges of employment, or a matter directly or indirectly related to employment, because of any applicable protected classification. All contractors shall be required to post a copy of Ann Arbor's Non-Discrimination Ordinance at all work locations where its employees provide services under a contract with the city.

Complaint Procedure: If any individual believes there has been a violation of this chapter, he/she may file a complaint with the City's Human Rights Commission. The complaint must be filed within 180 calendar days from the date of the individual's knowledge of the allegedly discriminatory action or 180 calendar days from the date when the individual should have known of the allegedly discriminatory action. A complaint that is not filed within this timeframe cannot be considered by the Human Rights Commission. To file a complaint, first complete the complaint form, which is available at www.a2gov.org/humanrights. Then submit it to the Human Rights Commission by e-mail (hrc@a2gov.org), by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107), or in person (City Clerk's Office). For further information, please call the commission at 734-794-6141 or e-mail the commission at hrc@a2gov.org.

Private Actions For Damages or Injunctive Relief: To the extent allowed by law, an individual who is the victim of discriminatory action in violation of this chapter may bring a civil action for appropriate injunctive relief or damages or both against the person(s) who acted in violation of this chapter

THIS IS AN OFFICIAL GOVERNMENT NOTICE AND
MUST BE DISPLAYED WHERE EMPLOYEES CAN READILY SEE IT.

**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 an employer who is (a) a contractor providing services to or for the City for a value greater than \$10,000 for any twelve-month contract term, or (b) a recipient of federal, state, or local grant funding administered by the City for a value greater than \$10,000, or (c) a recipient of financial assistance awarded by the City for a value greater than \$10,000, shall pay its employees a prescribed minimum level of compensation (i.e., Living Wage) for the time those employees perform work on the contract or in connection with the grant or financial assistance. The Living Wage must be paid to these employees for the length of the contract/program.

Companies employing fewer than 5 persons and non-profits employing fewer than 10 persons are exempt from compliance with the Living Wage Ordinance. If this exemption applies to your company/non-profit agency please check here No. of employees__

The Contractor or Grantee agrees:

- (a) To pay each of its employees whose wage level is not required to comply with federal, state or local prevailing wage law, for work covered or funded by a contract with or grant from the City, no less than the Living Wage. The current Living Wage is defined as \$17.42/hour for those employers that provide employee health care (as defined in the Ordinance at Section 1:815 Sec. 1 (a)), or no less than \$19.42/hour for those employers that do not provide health care. The Contractor or Grantor understands that the Living Wage is adjusted and established annually on April 30 in accordance with the Ordinance and covered employers shall be required to pay the adjusted amount thereafter to be in compliance with Section 1:815(3).

Check the applicable box below which applies to your workforce

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage without health benefits

Employees who are assigned to any covered City contract/grant will be paid at or above the applicable living wage with health benefits

- (b) To post a notice approved by the City regarding the applicability of the Living Wage Ordinance in every work place or other location in which employees or other persons contracting for employment are working.
- (c) To provide to the City payroll records or other documentation within ten (10) business days from the receipt of a request by the City.
- (d) To permit access to work sites to City representatives for the purposes of monitoring compliance, and investigating complaints or non-compliance.
- (e) To take no action that would reduce the compensation, wages, fringe benefits, or leave available to any employee covered by the Living Wage Ordinance or any person contracted for employment and covered by the Living Wage Ordinance in order to pay the living wage required by the Living Wage Ordinance.

The undersigned states that he/she has the requisite authority to act on behalf of his/her employer in these matters and has offered to provide the services or agrees to accept financial assistance in accordance with the terms of the Living Wage Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Living Wage Ordinance, obligates the Employer/Grantee to those terms and acknowledges that if his/her employer is found to be in violation of Ordinance it may be subject to civil penalties and termination of the awarded contract or grant of financial assistance.

Company Name

Street Address

Signature of Authorized Representative

Date

City, State, Zip

Print Name and Title

Phone/Email address

CITY OF ANN ARBOR LIVING WAGE ORDINANCE

RATE EFFECTIVE APRIL 30, 2026 - ENDING APRIL 29, 2027

\$17.42 per hour

If the employer provides health care benefits*

\$19.42 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
Colin Spencer at 734/794-6500 or cspencer@a2gov.org**

MICHIGAN DEPARTMENT OF TRANSPORTATION CERTIFIED PAYROLL

COMPLETION OF CERTIFIED PAYROLL FORM FULFILLS THE MINIMUM MDOT PREVAILING WAGE REQUIREMENTS

(1) NAME OF CONTRACTOR / SUBCONTRACTOR (CIRCLE ONE)												(2) ADDRESS															
(3) PAYROLL NO.				(4) FOR WEEK ENDING				(5) PROJECT AND LOCATION				(6) CONTRACT ID															
(a)	(b)	(c)	(d) DAY AND DATE							(e)	(f)	(g)	(h)	(i)	(j) DEDUCTIONS					(k)							
			Hour Type	MON	TUE	WED	THU	FRI	SAT						SUN	TOTAL HOURS ON PROJECT	PROJECT RATE OF PAY	PROJECT RATE OF FRINGE PAY	GROSS PROJECT EARNED		GROSS WEEKLY EARNED	TOTAL WEEKLY HOURS WORKED ALL JOBS	FICA	FEDERAL	STATE	OTHER	TOTAL DEDUCT
EMPLOYEE INFORMATION		WORK CLASSIFICATION		HOURS WORKED ON PROJECT							TOTAL HOURS ON PROJECT		PROJECT RATE OF PAY		PROJECT RATE OF FRINGE PAY		GROSS PROJECT EARNED		GROSS WEEKLY EARNED		DEDUCTIONS					TOTAL WEEKLY WAGES PAID FOR ALL JOBS	
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			
ETH/GEN:	ID #:	GROUP/CLASS #:	S								0			\$0.00									\$0.00	\$0.00			
NAME:											0			\$0.00									\$0.00	\$0.00			

Date _____

I, _____
 (Name of Signatory Party) (Title)

do hereby state:

(1) That I pay or supervise the payment of the persons employed by

_____ on the
 (Contractor or Subcontractor)

_____ ; that during the payroll period commencing on the
 (Building or Work)

_____ day of _____, _____, and ending the _____ day of _____, _____,
 all persons employed on said project have been paid the full weekly wages earned, that no rebates have been or will be made either directly or indirectly to or on behalf of said

_____ from the full
 (Contractor or Subcontractor)

weekly wages earned by any person and that no deductions have been made either directly or indirectly from the full wages earned by any person, other than permissible deductions as defined in Regulations, Part 3 (29 C.F.R. Subtitle A), issued by the Secretary of Labor under the Copeland Act, as amended (48 Stat. 948, 63 Stat. 108, 72 Stat. 967; 76 Stat. 357; 40 U.S.C. § 3145), and described below:

(2) That any payrolls otherwise under this contract required to be submitted for the above period are correct and complete; that the wage rates for laborers or mechanics contained therein are not less than the applicable wage rates contained in any wage determination incorporated into the contract; that the classifications set forth therein for each laborer or mechanic conform with the work he performed.

(3) That any apprentices employed in the above period are duly registered in a bona fide apprenticeship program registered with a State apprenticeship agency recognized by the Bureau of Apprenticeship and Training, United States Department of Labor, or if no such recognized agency exists in a State, are registered with the Bureau of Apprenticeship and Training, United States Department of Labor.

(4) That:

(a) WHERE FRINGE BENEFITS ARE PAID TO APPROVED PLANS, FUNDS, OR PROGRAMS

- in addition to the basic hourly wage rates paid to each laborer or mechanic listed in the above referenced payroll, payments of fringe benefits as listed in the contract have been or will be made to appropriate programs for the benefit of such employees, except as noted in section 4(c) below.

(b) WHERE FRINGE BENEFITS ARE PAID IN CASH

- Each laborer or mechanic listed in the above referenced payroll has been paid, as indicated on the payroll, an amount not less than the sum of the applicable basic hourly wage rate plus the amount of the required fringe benefits as listed in the contract, except as noted in section 4(c) below.

(c) EXCEPTIONS

EXCEPTION (CRAFT)	EXPLANATION

REMARKS:

NAME AND TITLE	SIGNATURE

THE WILLFUL FALSIFICATION OF ANY OF THE ABOVE STATEMENTS MAY SUBJECT THE CONTRACTOR OR SUBCONTRACTOR TO CIVIL OR CRIMINAL PROSECUTION. SEE SECTION 1001 OF TITLE 18 AND SECTION 231 OF TITLE 31 OF THE UNITED STATES CODE.