

CITY OF ANN ARBOR  
INVITATION TO BID



Leslie Science and Nature Center Building and Site work

ITB No. 4464

Due Date: Monday, November 28, 2016 at 2:00 p.m. (Local Time)

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

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

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

A pre-bid conference for this project will be held at **9:00 a.m., Wednesday, November 16** at **Leslie Science and Nature Center, 1831 Traver Road, Ann Arbor, 48105**

Attendance at this conference is highly recommended. Administrative and technical questions regarding this project will be answered at this time. The pre-bid conference is for information only. Any answers furnished will not be official until verified in writing by the Financial Service Area, Procurement Unit. Answers that change or substantially clarify the bid will be affirmed in an addendum.

# INSTRUCTIONS TO BIDDERS

## General

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

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.

## Questions or Clarification on ITB Specifications

All questions regarding this ITB shall be submitted via email. Emailed questions and inquires 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 **Friday, November 18, 2016 by 2 p.m.** and should be addressed as follows:

Specification/Scope of Work questions emailed to [akuras@a2gov.org](mailto:akuras@a2gov.org) and [kkohler@kohlerarchitect.net](mailto:kkohler@kohlerarchitect.net)  
Bid Process and Compliance questions emailed to [cspencer@a2gov.org](mailto: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 Amy Kuras at [akuras@a2gov.org](mailto:akuras@a2gov.org) after discovery as possible. Further, the contractor and/or service provide 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](http://www.mitn.info) and/or City of Ann Arbor web site [www.A2gov.org](http://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 **Monday, November 28, 2016 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 and **two (2)** Bid copies in a sealed envelope clearly marked: **ITB No. 4464, Leslie Science and Nature Center Building and Site Work**.

### **Bids must be addressed and delivered to:**

City of Ann Arbor  
Procurement Unit,  
c/o Customer Services, 1<sup>st</sup> Floor  
301 East Huron Street  
P.O. Box 8647  
Ann Arbor, MI 48107

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 must be included in submitted bids.**

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

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

Hand delivered bids will be date/time stamped/signed by the Procurement Unit at the address above in order to be considered. Normal business hours are 9:00 a.m. to 3:00 p.m. Monday through Friday, excluding 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](http://www.MITN.info) and obtain an official Bid. Bidders do not need to be shown on the plan holders list provided by MITN to be considered an official plan holder.

## 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.

## Withdrawal of Bids

After the time of opening, no Bid may be withdrawn for the period of Sixty (60) 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 can not be met, the Bidder must stipulate on Bid Form Section 3 - Time Alternate its schedule for performance of the work. Consideration will be given to time in evaluating bids.

## Liquidated Damages

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

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

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

## Human Rights Information

All contractors proposing to do business with the City shall satisfy the contract compliance 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 as outlined in Section 5, beginning at page GC-3 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

Section 4, beginning at page GC-2, outlines the requirements for payment of prevailing wages and for payment of a "living wage" to employees providing service to the City under this contract. The successful bidder and its subcontractors must comply with all applicable requirements and provide documentary proof of compliance when requested.

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 bids 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](http://www.wdol.gov)

## 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 on Bid Form Section 4 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 the award action. 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.

## 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.



# 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 and Declaration of Compliance Form, Living Wage requirements and Declaration of Compliance Form, Prevailing Wage requirements and Declaration of Compliance Form, Vendor Conflict of Interest Form, Notice of Pre-Bid Conference, Instructions to Bidders, Bid, Bid Forms, Contract, Bond Forms, General Conditions, Standard Specifications, Detailed Specifications, all Addenda, and the Plans (if applicable) and understands them. The Bidder declares that it conducted a full investigation at the site and of the work proposed and is fully informed as to the nature of the work and the conditions relating to the work's performance. The Bidder also declares that it has extensive experience in successfully completing projects similar to this one.

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

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

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

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

The Bidder declares that it has become fully familiar with the provisions of Chapter 14, Section 1:320 (Prevailing wages) and Chapter 23 (Living Wage) of the Code of the City of Ann Arbor and that it understands and agrees to comply, to the extent applicable to employees providing services to the City under this Contract, with the wage and reporting requirements stated in the City Code provisions cited. Bidder certifies that the statements contained in the City Prevailing Wage and Living Wage Declaration of Compliance Forms are true and correct. 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 \_\_\_\_\_, 201\_.

\_\_\_\_\_  
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 proposal, 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** \_\_\_\_\_, 201\_

(Print) Name \_\_\_\_\_ Title \_\_\_\_\_

Company: \_\_\_\_\_

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

Contact Phone ( ) \_\_\_\_\_ Fax ( ) \_\_\_\_\_

Email \_\_\_\_\_

# BID FORM

## Section 1 – Schedule of Prices

Company: \_\_\_\_\_

Project: **Leslie Science and Nature Center Building and Site Work**

<u>Item Description</u>	<u>Estimated Quantity</u>	<u>Unit Price</u>	<u>Total Price</u>
1) All work as shown on sheet A1 including concrete walks, stairs, drainage work	LS		\$ _____
2) All work as shown on sheet A2 including 1 <sup>st</sup> floor windows at Leslie House and remediation	LS		\$ _____
3) All work as shown on sheet A3 including kitchen sink, railings, and flooring work in kitchen	LS		\$ _____
4) All work as shown on sheet A4 including stairs and landings	LS		\$ _____
5) All work as shown on sheet A5 including windows for Caretaker House and remediation	LS		\$ _____
<b>ESTIMATE TOTAL BASE BID</b>			<b>\$ _____</b>

**\*Each item shall be fully inclusive of mobilization, permits, general conditions, and site restoration.**

### ALTERNATES:

#### Alternate A-1

**Add:** \$ \_\_\_\_\_

Work includes, but is not limited to the following:

- a) The replacement of all second story windows and related work in the Leslie house.
- b) Included shall be all specifications as listed in Division 8.

#### Alternate A-2

**Add:** \$ \_\_\_\_\_

Work includes, but is not limited to the following:

- a) Remove existing vinyl laminate flooring and base from hall and toilet room in the Leslie House.
- b) Replace area with new V.C.T. and vinyl base.
- c) Included shall be all specifications as listed in Division 9.

#### Alternate A-3

**Deduct:** \$ \_\_\_\_\_

Work includes, but is not limited to the following:

- a) Eliminate Heatlock Technology – all windows.
- b) Substitute conventional window screens for TruScene window screens—all windows.

# BID FORM

## Section 2 - Material and Equipment Alternates

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

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

<u>Item Number</u>	<u>Description</u>	<u>Add/Deduct Amount</u>
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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 \_\_\_\_\_





# 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 AGREEMENT is made on the \_\_\_\_\_ day of \_\_\_\_\_, 201\_, 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 [Insert Title of Bid and Bid Number] in accordance with the requirements and provisions of the following documents, including all written modifications incorporated into any of the documents, which are incorporated as part of this Contract:

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 **Leslie Science and Nature Center Building and Site Work, ITB 4464**

### 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 by May 30. No work may take place between June 1 and August 30.**
- (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 agreement, the Contractor and the City agree to venue in a court of appropriate jurisdiction sitting within Washtenaw County for purposes of any action arising under this Contract. 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 agreement.

**ARTICLE VIII - Notice**

All notices given under this Contract shall be in writing, and shall be by personal delivery or by certified mail with return receipt requested to the parties at their respective addresses as specified in the Contract Documents or other address the Contractor may specify in writing. 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 harmless the City, its officers, employees and agents harmless from all suits, claims, judgments and expenses including attorney's fees resulting or alleged to result, in whole or in part, from any act or omission, which is in any way connected or associated with this Contract, by the Contractor or anyone acting on the Contractor's behalf under this Contract. Contractor shall not be responsible to indemnify the City for losses or damages caused by or resulting from the City's sole negligence. 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.

**FOR CONTRACTOR**

By \_\_\_\_\_

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

[signatures continue on next page]

**FOR THE CITY OF ANN ARBOR**

By \_\_\_\_\_  
Christopher Taylor, Mayor

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

**Approved as to substance**

By \_\_\_\_\_  
Howard Lazarus  
City Administrator

By \_\_\_\_\_  
Derek Delacourt  
Services Area Administrator

**Approved as to form and content**

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

**PERFORMANCE BOND**

- (1) \_\_\_\_\_ of \_\_\_\_\_ (referred to as "Principal"), and \_\_\_\_\_, a corporation duly authorized to do business in the State of Michigan (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for \$ \_\_\_\_\_, the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City dated \_\_\_\_\_, 201\_, for: \_\_\_\_\_ and \_\_\_\_\_ this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq.
- (3) Whenever the Principal is declared by the City to be in default under the Contract, the Surety may promptly remedy the default or shall promptly:
- (a) complete the Contract in accordance with its terms and conditions; or
  - (b) obtain a bid or bids for submission to the City for completing the Contract in accordance with its terms and conditions, and upon determination by Surety of the lowest responsible bidder, arrange for a Contract between such bidder and the City, and make available, as work progresses, sufficient funds to pay the cost of completion less the balance of the Contract price; but not exceeding, including other costs and damages for which Surety may be liable hereunder, the amount set forth in paragraph 1.
- (4) Surety shall have no obligation to the City if the Principal fully and promptly performs under the Contract.
- (5) Surety agrees that no change, extension of time, alteration or addition to the terms of the Contract or to the work to be performed thereunder, or the specifications accompanying it shall in any way affect its obligations on this bond, and waives notice of any such change, extension of time, alteration or addition to the terms of the Contract or to the work, or to the specifications.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 201\_.

\_\_\_\_\_  
(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:

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

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

## LABOR AND MATERIAL BOND

- (1) \_\_\_\_\_  
of \_\_\_\_\_(referred to as "Principal"), and \_\_\_\_\_, a corporation duly authorized to do business in the State of Michigan, (referred to as "Surety"), are bound to the City of Ann Arbor, Michigan (referred to as "City"), for the use and benefit of claimants as defined in Act 213 of Michigan Public Acts of 1963, as amended, being MCL 129.201 et seq., in the amount of \$ \_\_\_\_\_, for the payment of which Principal and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, by this bond.
- (2) The Principal has entered a written Contract with the City, dated \_\_\_\_\_, 201\_, for \_\_\_\_\_; and this bond is given for that Contract in compliance with Act No. 213 of the Michigan Public Acts of 1963 as amended;
- (3) If the Principal fails to promptly and fully repay claimants for labor and material reasonably required under the Contract, the Surety shall pay those claimants.
- (4) Surety's obligations shall not exceed the amount stated in paragraph 1, and Surety shall have no obligation if the Principal promptly and fully pays the claimants.

**SIGNED AND SEALED** this \_\_\_\_\_ day of \_\_\_\_\_, 201\_

\_\_\_\_\_  
(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:

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

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

# **GENERAL CONDITIONS**

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

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

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

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

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

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 Agreement 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 Agreement 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 13. No claim shall be valid unless so made.

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

- (1) The Contractor shall be reimbursed for all reasonable costs incurred in doing the work, and shall receive an additional payment of 15% of all the reasonable costs to cover both its indirect overhead costs and profit;
- (2) The term "Cost" shall cover all payroll charges for employees and supervision required under the specific order, together with all worker's compensation, Social Security, pension and retirement allowances and social insurance, or other regular payroll charges on same; the cost of all material and supplies required of either temporary or permanent character; rental of all power-driven equipment at agreed upon rates, together with cost of fuel and supply charges for the equipment; and any costs incurred by the Contractor as a direct result of executing the order, if approved by the Supervising Professional;
- (3) If the extra is performed under subcontract, the subcontractor shall be allowed to compute its charges as described above. The Contractor shall be permitted to add an additional charge of 5% percent to that of the subcontractor for the Contractor's

supervision and contractual responsibility;

- (4) The quantities and items of work done each day shall be submitted to the Supervising Professional in a satisfactory form on the succeeding day, and shall be approved by the Supervising Professional and the Contractor or adjusted at once;
- (5) Payments of all charges for work under this Section in any one month shall be made along with normal progress payments. Retainage shall be in accordance with Progress Payments-Section 16.

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

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

## **Section 16 - Progress Payments**

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

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

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

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

## **Section 17 - Deductions for Uncorrected Work**

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

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

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

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

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

## **Section 19 - Acceptance and Final Payment**

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

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

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

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

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

- (1) unsettled liens;

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

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

## **Section 20 - Suspension of Work**

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

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

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

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

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

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

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

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

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

## **Section 24 - Removal of Equipment and Supplies**

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

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

## **Section 25 - Responsibility for Work and Warranties**

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

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

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

## **Section 26 - Partial Completion and Acceptance**

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

The issuance of a certificate of partial completion shall not constitute an extension of the Contractor's time to complete the portion of the permanent construction to which it relates if the Contractor has failed to complete it in accordance with the terms of this Contract. The issuance of the certificate shall not release the Contractor or its sureties from any obligations under this Contract including bonds.

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

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

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

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

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

## **Section 28 - Contractor's Insurance**

- (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 which may arise under this Contract; whether the act(s) or omission(s) giving rise to the claim were made by the Contractor or by any subcontractor or anyone employed by them directly or indirectly. In the case of all contracts involving on-site work, the Contractor shall provide to the City, before the commencement of any work under this contract, certificates of insurance and other documentation satisfactory to the City demonstrating it has obtained the policies and endorsements required on behalf of itself, and when requested, any subcontractor(s). The certificates of insurance endorsements and/or copies of policy language shall document that the Contractor satisfies the following minimum requirements.



- (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 07 98 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 which 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 Job General Aggregate
\$1,000,000	Personal and Advertising Injury
\$2,000,000	Products and Completed Operations Aggregate

- (c) Motor Vehicle Liability Insurance, including Michigan No-Fault Coverages, equivalent to, as a minimum, Insurance Services Office form CA 00 01 07 97 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 which 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.
- (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 30 day written notice of cancellation in favor of the City of Ann Arbor. Further, the documentation must explicitly state the following: (a) the policy number; name of insurance company; name and address of the agent or authorized representative; name and address of insured; project name; policy expiration date; and specific coverage amounts; (b) any deductibles or self-insured retentions which shall be approved by the City, in its sole discretion; (c) that the policy conforms to the requirements specified 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) 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 admitted and authorized to do business in the State of Michigan and shall carry and maintain a minimum rating assigned by A.M. Best & Company's Key Rating Guide of "A-" Overall and a minimum Financial Size Category of "V". Insurance policies and certificates issued by non-admitted 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.

## Section 44

### CONTRACTOR'S AFFIDAVIT

The undersigned Contractor, \_\_\_\_\_, represents that on \_\_\_\_\_, 20\_\_\_\_, it was awarded a contract by the City of Ann Arbor, Michigan to \_\_\_\_\_ under the terms and conditions of a Contract titled \_\_\_\_\_. The Contractor represents that all work has now been accomplished and the Contract is complete.

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

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

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

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
Date

By \_\_\_\_\_  
(Signature)

Its \_\_\_\_\_  
(Title of Office)

Subscribed and sworn to before me, on this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_  
\_\_\_\_\_, \_\_\_\_\_ County, Michigan

Notary Public

\_\_\_\_\_ County, MI

My commission expires on:

## **STANDARD SPECIFICATIONS**

All work under this contract shall be performed in accordance with the Public Services Department Standard Specifications in effect at the date of availability of the contract documents stipulated in the 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:

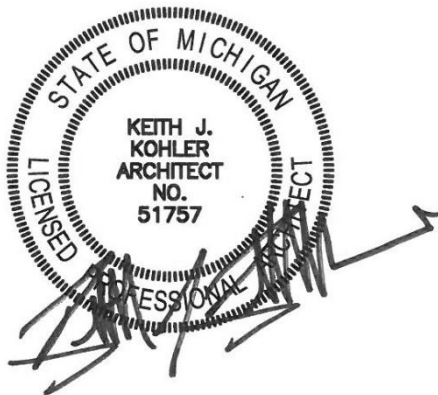
<http://www.a2gov.org/departments/engineering/Pages/Engineering-and-Contractor-Resources.aspx>

SPECIFICATIONS FOR  
**FACILITY & SITE MAINTENANCE WORK**  
**AT**  
**LESLIE SCIENCE AND NATURE CENTER**  
1831 TRAVER ROAD, ANN ARBOR, MI 48105

FOR  
**ANN ARBOR PARKS & RECREATION DEPT.**  
301 EAST HURON STREET, ANN ARBOR, MI 48104

**ITB #4464**

NOVEMBER 7, 2016



ARCH JOB #1641



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KOHLER ARCHITECTURE INDEX

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**DIVISION #1**

**GENERAL DATA**

**1.1 SPECIAL CONDITIONS**

**A. PROJECT MANUAL:**

1. All work shall be performed under this contract as described in this project manual as prepared by Kohler Architecture, Inc. Included, but not limited to are; Kohler Architecture Title Sheet, Kohler Architecture Index, Specifications - All Divisions, Drawings, etc.

**B. DEFINITIONS:**

1. Architect - Shall be interpreted to mean Kohler Architecture, Inc, or their authorized representative.
2. Contractor - Shall be interpreted to mean the Prime Contractor who has a direct contract with the Owner. (General Contractor)
3. Owner - Shall be interpreted to mean City of Ann Arbor.
4. Sub-contractor - Shall be interpreted to mean any person or entity who has a direct contract with the Prime Contractor, either supplying labor or materials.

The Prime Contractor shall employ only (1) Sub-Contractor/Supplier for each trade/category of work for the entire contract, or in the case of multiple building/sites, (1) Sub-Contractor/Supplier in each trade/category for all sites/buildings. This improves coordination and project scheduling, reduces shop drawing and payroll reviews, and standardizes materials and installation.

5. Substantial Completion - Shall be defined to mean when the Architect establishes in writing, based on his knowledge, observations and beliefs, that all necessary components are installed for the project to be acceptable for the Owner's intended use and beneficial occupancy, including the Contractor obtaining governing agency approvals (City and/or Township) on all permits issued on this project. The project must meet substantial completion no later than the date established elsewhere, unless amended by change order.
6. Final Completion - Shall be defined to mean when all work, including completion of all punch list items, paper work has been submitted (guarantees, final waivers, as-builts, etc.) and the Architect approves the Contractor's final certificate for payment.

**C. EXAMINATION OF SITE, MEASUREMENTS & LEVELS:**

1. Bidders shall visit the site of the work, compare the drawings and specifications with any work in place, and inform themselves of all conditions, including other work, if any, being performed. Failure to visit the site will in no way relieve the successful bidders from the necessity of furnishing any materials or performing any work that may be required to complete the work in accordance with the contract documents without additional cost to the Owner.
2. Each Contractor shall be responsible for the correct installation of his work to comply with the plans and specifications.

**D. CONTRACTOR SUBMITTALS:**

1. All submittals shall be signed or initialed and dated by the Contractor prior to acceptance by the Architect. Submittals shall be in complete packages and include all necessary information for review before the Architect can process to the Owner. Any submittal package received by the Architect that is incomplete will not be reviewed and will be sent back to the Contractor for re-submittal.
2. Shop Drawing Submittals - All must be submitted and reviewed prior to ordering that particular item, and starting any physical work on the job site unless other arrangements are made with the Architect in advance.
  - a) Six (6) copies of shop drawings/data sheets, including materials safety data sheets for each material per Division 1.1, B-10 of specifications. Note: All project shop drawings of similar items shall be submitted as a complete package to allow for one coordinated review of all related components at same time.
3. Electronic Daily Field Reports - The Contractor shall keep an accurate daily record of all work performed on site. These reports are to be emailed to the Owner and Architect on a daily basis. Field reports may be hand written (See sample form at the end of this division), scanned, and sent in .pdf format; or from electronic project management software (i.e. Raken, FieldLens, or others). Included should be, but not limited to, date, weather, sub-contractors / crews present and number of personnel, deliveries, equipment on site, site visitors, work performed, delays, and sufficient photos to show all activities performed in that days work.
3. As-Builts - The Contractor shall keep an accurate record of all deviations from the contract drawings and specifications. He shall neatly and correctly enter in pencil any deviations on the drawings affected and shall keep drawings available for inspection. Extra set of transparencies will be furnished for this purpose. Give to the Architect at completion.

4. Manuals & Brochures - The Contractor shall submit in duplicate to the Architect at completion, maintenance manuals, instructions, parts, etc., of all items installed as part of this work. Include all warranties, application for extended warranties, etc. These items shall be submitted as shop drawings.

E. PRE-CONSTRUCTION MEETING:

1. An architectural pre-construction meeting will be held by the Architect after contract award to review all schedules, purchase orders, and details of the work. This must be done before any physical work begins - estimated time is 2-3 weeks after contract award. Invited to attend are the Prime Contractors, Owner's Representatives and the Architect/Engineer. Also the Contractor shall have present his Foreman, or Superintendent who will be in charge of the job and any Sub-Contractors that are deemed major contributions to the work.

The Contractor shall have the following written information for distribution at this meeting.

- a) Weekly bar graph of the anticipated progress of work.
- b) List of all Suppliers, Sub-Contractors, with phone numbers and addresses.
- c) List of all shop drawings to be submitted. Include spec data sheets, color samples, picture cuts, samples, etc. (See Shop Drawing Schedule at end of Instructions to Bidders.)
- d) Copies of purchase orders and written confirmation from Supplier/Sub-Contractor.
- e) Insurance certificates (if not already submitted with bonds and contracts).
- f) Permit applications, or copies of permits, or submit a written letter to the Architect with date, inspector's name and phone number from the Governing Building Authority stating that permits will not be required.

F. LAYOUT:

1. The Contractor shall immediately locate all general reference points and take such action as is necessary to prevent their destruction; lay out his work and be responsible for all lines, elevations and measurements of buildings, grading, paving, utilities and other work executed by him under the contract. He must exercise proper precautions to verify figures shown on drawings before laying out work and will be held responsible for any error resulting from his failure to exercise such precaution.

G. SPECIAL CLARIFICATIONS:

1. Approved Substitutions – Refer to sheet BF-2: Section 2 – Material and Equipment Alternates
2. Manufacturer's Specifications - All materials, items, equipment, etc., shall be installed in accordance with the manufacturer's specifications and recommendations when not otherwise specified. These specifications do not replace or override any installation manuals/directions. The installer shall provide all materials and perform all work that is needed for this application, whether specialized to this installation or not, as required and/or recommended by the manufacturer so as not to void any warranties and functions properly so that each component becomes part of the entire assembly.

Where a material or installation is specified in these specifications and is in conflict with manufacturer's recommendations, the Contractor shall immediately notify the Architect before proceeding with the work. Failure to do so will place full responsibility upon the Contractor performing the work.

3. Methods of Construction - The Contractor takes full responsibility and liability for the means and methods of construction to perform the work under this contract. The timing, scheduling and skill of workers and suppliers shall be coordinated prior to beginning any work. The type of equipment, installation, sequence, temporary provisions, etc., all as required to produce the finished product for a first class installation shall be determined by the Prime Contractor. Any delays, errors, omissions or any other problems caused to the job by a change in Sub-contractors or suppliers, bad scheduling, lack of supervision, material deliveries, etc., shall be borne by the Prime Contractor.
4. Changes - These drawings and specifications are provided to give the Contractor an understanding of the systems and materials to be installed under this contract. Where the scope of work or details are in conflict with job conditions, the manufacturer's specifications, manufacturer's guarantee, etc., they shall be modified as required by the Contractor. The Architect shall be notified prior to any change. When these details exceed the manufacturer's requirements and the guarantee, no change shall be made, unless so directed by the Owner or Architect, and the work shall be performed in strict accordance to these drawings and specifications.

When a change is initiated either by the Owner, Contractor or Architect, the Contractor shall submit a cost breakdown of the change for approval by the Architect and Owner, before proceeding with the work. Any change in completion date shall also be documented. A formal Change Order, signed by the Owner, Contractor and the Architect will follow to authorize the work to be done and the contract amount and/or completion date to be changed. A Change Order must be fully executed before including on pay requests.

To insure the intent of the contract documents are being complied with and since the Architect is not providing full time inspection/observation services, the Contractor shall perform the following:

- a) On all demolitions, removals, excavations or existing concealed conditions, the Contractor shall certify that conditions found were as anticipated, or as specified in the contract documents. If the above conditions are closed-up, covered, or back-filled prior to notifying the Architect or prior to his scheduled inspection, the Contractor shall document with photos, measurements and/or sketches how the concealed conditions were constructed.
  - b) Should the Contractor become aware of any deviations, unusual circumstances, cause for extra work, or other reasons he feels may have an affect, or cost change on this contract, he shall immediately notify the Architect for directions.
  - c) Contractor's failure to notify the Architect/Owner, prior to performing the additional work, accepts full responsibility for any extra costs, delays or non-acceptance by the Owner or Architect that may be produced or incurred to the contract.
5. Discrepancies - Should the contract documents disagree (drawings and specifications), the better quality or larger quantity of materials or work shall be included in the bid and unless otherwise ordered in writing, shall be furnished by the Contractor.
  6. Standard Codes - Reference made to standard specifications or codes refer to latest edition unless otherwise noted. Such reference includes current addenda and errata, if any. All work shall meet or exceed all zoning and code requirements, including the Michigan Building Code, or as adopted by the local building authority, and State Fire Marshal.
  7. Organization - The organization of the specifications into Divisions, Sections and Articles, and the arrangement of drawings shall not control the Contractor in dividing the work among Sub-contractors or in establishing the extent of work to be performed by any trade.
  8. Materials - Shall be new. Seconds or damaged materials will be rejected by the Architect, who reserves the right to disapprove and reject any materials proposed or installed, which in his opinion fail to meet quality standards specified. Contractor shall, at his expense, remove and replace with approved materials, any rejected materials.
  9. Labor - As noted elsewhere, it is the Prime Contractor's responsibility to keep the job moving according to the progress schedule and meet completion dates specified or stated in the Bid Proposal. Whether Workers/Sub-Contractors/Suppliers are union or non-union, default, quit, fail to perform, it is the Prime Contractor's responsibility to work out problems that may occur to keep on schedule and prevent any damages, delays, or disturbances caused to the Owner and/or job site.
- H. DAMAGE & REPAIRS TO SITE & BUILDING:
1. The site, building and furniture or equipment, including such items as walls, ceilings, floors, roofs, trees, drives, walks, curbs, gutters, paving, grade areas, etc., cut up or damaged during construction of this project shall be repaired or replaced in a neat and workmanlike manner, to the satisfaction of the Owner and Architect, by the Contractor responsible.
  2. The Contractor shall be responsible for the security, watertightness and systems operation of the building in areas of this work. Any vandalism, water damage, theft, electrical/mechanical damages, etc., to the building or its components or any stored or installed materials as part of this work, or furniture and equipment (ceilings, floors, walls, desks, computers, books, papers, etc.) shall become the Contractor's responsibility to restore (replace or repair) all items to their same condition as when the work started. Included, but not limited to, shall be all additional costs for Architects, Attorneys and Owner's staff time to clean up, document and resolve any damages or issues.
- I. CLEANING UP & FINAL ACCEPTANCE BY OWNER:
1. Section 39 of General Conditions shall be supplemented as follows:

"In addition to the removal of rubbish and leaving the work areas clean, the Contractor shall clean all work, wash floors, vacuum carpet, wash glass, remove all stickers, replace broken glass, remove stains, spots, marks, dust and dirt from all decorated work and finishes; including all existing work affected by this operation, including site areas. All damage to lawns, walks, pavement, building and building elements, etc., caused from equipment, trash containers, vehicles, or other operations in performing this work shall be repaired. **This facility (building & site) shall be ready for Owner's occupancy and use at completion - Owner's furnishings excluded.**
  2. **On a daily basis**, all rubbish and debris shall be cleaned up and placed in a dumpster on the job site to be removed/replaced as needed to a licensed disposal site. The building site shall be kept neat and organized, so that work and safety of all trades is not affected. Submit written documentation, manifests, logs, etc. of all debris removal at completion of job.
  3. Materials used as part of this work shall be neatly stored and properly protected in an organized manner, so they do not interfere with the work, safety of all trades and hazard or damage to the site/building. Vandalism arising from improperly stored materials to the Owner's site/building shall be borne by the Contractor.

4. It shall be the Prime Contractor's responsibility to clean-up and co-ordinate work areas so that each trade can perform their work safely and efficiently or direct and enforce that each Sub-Contractor conforms to these same requirements.
  5. Should the Contractor fail to clean-up debris caused from his operations and properly store and remove from site on a daily basis, the Owner in a safety/emergency situation without notice to the Contractor may elect to clean up debris with their own work force. At other times the Owner will give Contractor advance notice. All costs incurred by the Owner due to Contractor's neglect will be documented and deducted against the final contract amount due to the Contractor.
  6. If this contract involves construction of a new building, remodeling, or additions the scope of clean up shall be more than the normal removal of rubbish and leaving the work areas clean. The Contractor shall clean all new work, wash floors, vacuum carpet, wash glass, remove all stickers, replace broken glass, remove stains, spots, marks, dust and dirt from all decorated work and finishes, including all existing work affected by this operation, including tenants furnishings, contents and personal belongings. All damage to lawns, walks, pavement, vehicles or other operations in performing this work shall be repaired or replaced to an equal, or better condition than before the damage occurred. The project shall be ready for Owner's occupancy and use when completed.
- J. **CUTTING & PATCHING:**
1. The Prime Contractor shall be responsible for coordinating all cutting and patching of built work that needs to be modified for missed items, errors, defects, etc., as caused by his own Employees or Sub-contractors. He shall coordinate with related trades and Sub-Contractors and work out all details and scheduling. The Prime Contractor shall coordinate with the responsible party for the problem and extra work and shall resolve all costs to correct, without additional charge to the Owner.
- K. **TEMPORARY FACILITIES:**
1. Enclosures - Contractor is responsible for any damage to all materials, stored or built into this work under this contract, due to elements of the weather, vandalism, theft, fire, etc. No open areas of work shall be left open during non-working hours or inclement weather. Contractor is responsible for all damages caused due to this contract, to all materials, whether existing or incorporated into this work.
  2. Storage - Each Contractor shall provide / erect a materials storage shed, properly covered, locked, etc., as required. Contractor is responsible for stored materials. Stolen, damaged or destroyed materials shall be replaced at the Contractor's expense.
  3. Field Office - The Prime Contractor shall provide a mobile trailer unit for use by all Sub-Contractors as a general office (not for storage). Shall be equipped with telephone, heat, lights, etc. Contractor shall maintain at this office a complete set of contract documents, with bulletins, change orders, shop drawings, schedules, Sub-Contractor's list, etc. All costs associated with providing and maintaining the field office shall be by the General Contractor. It's location, as well as the location of storage trailers, general site storage, workers parking, general rigging/staging area will be determined at the pre-construction meeting to the satisfaction of the Owner. Electric usage will be paid for by Owner. Heater to be non-electric type with electric blower only. Telephone hook-up, usage and any charges shall be by the General Contractor.
  4. Toilet Facilities - Prime Contractor shall be responsible for providing, maintaining and keeping clean a self-contained toilet facility on site in close proximity to the work.
  5. Miscellaneous - Contractor shall provide all temporary drainage, drains, sumps, walkways, railings, etc., as required for proper execution of work and as required to meet all codes and ordinances.
  6. Debris Removal - All debris resulting from this work shall be cleaned up at end of each day's work and hauled away from job upon completion to a licensed disposal site. Prime Contractor shall provide a dumpster as required for use by all Sub-Contractors and pay for all usage/dump charges.
  7. Removal - Temporary facilities shall be removed when no longer required, or at completion and site restored to original condition.
  8. Exits - Provide temporary ladders, railings, etc., as required for emergency use during construction. Proper exiting of building shall be maintained at all times.
  9. Temporary Heat - Contractor shall provide and maintain all temporary heating and ventilating units during construction as required to properly execute this contract. All fuels used shall be paid for by the Contractor. (No electric units)
  10. Barricades - Provide all necessary barricades, fencing, flagmen, etc., to properly control and assure the safety of workers and the public during this work.
  11. Water - The Prime Contractor shall provide all water required for construction use, drinking, etc., and coordinate requirements with Sub-Contractors. Note: The tap and metering of the fire hydrant may be used, but all at the Prime Contractor's cost - installation, usage bills and removal.

12. Electrical - The Electrical Contractor shall provide temporary power to the site, necessary building lights and outlets for others to connect. The Prime Contractor shall coordinate among all Sub-Contractors and pay all usage bills. See Electrical Division for other requirements.
13. Telephones –Contractor is not to use Owner's general telephones.
14. Fencing - General Contractor is to secure the contract limits of this work with snow type fencing or better as needed to secure the construction site off limits to unauthorized people. Safety to the public is of utmost importance. All ladders, scaffolding, doors, windows, entries, and other attractive/inviting items shall be secured during non-working hours.
15. Road Access - Maintenance
  - a) Contractor shall keep the Owner's roads free of construction spillages and debris at all times. Repair damage caused to these roads by contract-related construction vehicles by replacing damaged pavement and curbing to match existing construction.
  - b) Construct and maintain temporary earth ramps for access and egress of heavy construction and delivery vehicles to below grade (excavated) areas of the construction site.
  - c) Contractor may use designated areas of Owner's parking facilities for passenger vehicles only. Heavy construction equipment will not be permitted on Owner's parking facilities. Maintain and repair any damage caused by use of Owner's parking facilities. Maintain parking area for construction vehicles as designated by the Owner.

L. MISCELLANEOUS COSTS:

1. The Prime Contractor shall secure and pay for the building permit based on the work of all Contractors, along with all costs for inspections, plan review fees, approvals, etc. Sub-contractors shall secure same related permits as required by code. Upon completion, submit all occupancy permits, approvals, etc. It is the Prime Contractor's responsibility to pick up all costs and coordinate the Sub-permits, should the Sub-Contractors under his control fail to do so. All permits, including electrical/mechanical, shall be secured from the City of Ann Arbor at the web link below.  
[www.a2gov.org/departments/planning-development/building/permits/Pages/default.aspx](http://www.a2gov.org/departments/planning-development/building/permits/Pages/default.aspx)
2. Contractor, Sub-Contractor and Supplier shall include in his bid and contract price any Michigan sales and use taxes, currently imposed by legislative enactment.
3. Utilities - All costs, tap-in fees, back-charges, permits, inspections and approvals shall be included in the Bid by the Prime Contractor. Each Sub-Contractor shall be responsible for their related trade, or as noted herein, or under their specialized division. It shall be the Prime Contractor's responsibility to pick-up all costs and coordinate with the Sub-Contractors if they should fail in their responsibility. The intent is to eliminate any extra cost to the Owner for utilities during the course of construction.
  - a) Electric - the Electrical Contractor shall be responsible and include all power company's back-charge and utility company's work in the bid for all secondary and primary wiring, poles, transformers, meter, meter socket, etc. For either temporary or final service the Prime Contractor shall be responsible for all usage bills, until acceptance by the Owner, or substantial completion.  
  
Electrical Contractor to be responsible for labor and materials for final hook-up of all electrical equipment as supplied under Electrical Division, Mechanical Division, or Equipment Division as furnished by Prime Contractor, unless noted otherwise in specific Divisions.
  - b) Storm, Sanitary, Water Main - The Prime Contractor shall be responsible and include all costs for permits, inspections, approvals, labor and material for the complete storm drainage system. Included shall be the soil erosion permit, inspections, approvals and compliance as required by the City of Ann Arbor.
  - c) Road Right-Of-Way - The Prime Contractor shall be responsible and include all costs in his bid for performing all work in the right-of-way. Included shall be permits, inspections, barricades, approvals, bonds, clean up, etc., as required by the City of Ann Arbor.

M. ARCHITECT'S BASIC AND ADDITIONAL SERVICES

1. The Architect will schedule and conduct a pre-construction meeting before work starts. See Division #1.1, Special Conditions for details.
2. The Architect will schedule a conduct a weekly construction progress meeting at the job site with the Owner and Contractor present to address progress and any construction concerns.

3. The Architect will make job site visits on a scheduled basis (approximately one per week), during the course of construction. He shall be provided with access to all areas of work to insure construction is proceeding in accordance with the contract documents. The Contractor shall schedule all sample mock-ups, questions regarding the project, any special meetings for Architect's review and approval during this scheduled visits.
4. The Contractor is responsible to notify the Architect 48 hours in advance for the following special visits:
  - a) First day of job set-up to review material storage placements & general layout
  - b) All excavations prior to backfill or concrete placement & during testing, after demolition, but before new materials are installed, to view concealed job conditions.
  - c) To review/approve all samples of construction before Contractor continues with the work. Sample areas may be described in other Divisions of the Specifications - this may also include special visits by manufacturers of systems.
  - d) When observations/reviews/approvals are made by representatives of Manufacturers and Suppliers
  - e) The Contractor shall submit a notice of completion letter to the Architect in writing when all work is complete and ready for a punch list. Under the normal services, the Architect will make (1) punch list visit, (1) re-punch and (1) random final check. The initial punch list will be made by the Architect in the presence of the Contractor and the Owner to determine what items may need corrections and if the project is substantially complete. One weeks advance notice is required.

The punch list will be written up by the Architect and describe general and/or specific items in general locations. It is the Prime Contractor's responsibility to also make a list of his own, dealing with the specifics and translate them to the proper Sub-Contractors

If the Architect arrives at the job site and the project is not done and ready for a punch list, but rather a "to do list", the Architect has the right to leave and will only return when notice of completion is again received in writing. This process will use up (1) of the normal punch/re-punch visits

The first re-punch and the final random re-punch visit shall again be requested in writing, similar in format to the initial punch list.

Note: If the Contractor fails to complete all punch list items within the (3) punch/re-punch visits allowed, the costs for all additional punch list visits will be deducted from the final cost amount due to the Contractor to cover any Architect's, Owner's, or Attorney's additional services at their regular billing rate until the work is accepted by the Architect and Owner.

5. The punch and re-punch list includes physical items in the field requiring completion, as well as paper work items that must be submitted prior to job "close-out" and "final completion" as noted in the General/Special Conditions. Final payment can only be considered once all items are completed to the satisfaction of the Owner/Architect.

The Contractor should review the Special Conditions for any applicable liquidated damages that apply for failure to meet "Substantial" or "Final completion" dates. In addition to these costs, or in the event that liquidated damages are not part of this contract, the Contractor is responsible to reimburse the Owner for the direct costs incurred for additional time by the Architect, Administrative/Custodial Staff, Attorney, etc., when the project goes beyond the established dates and the cause of the delay is not beyond his control.

6. The Contractor will be responsible to pay for all additional Architectural services, including all special visits requested by the Contractor to resolve problems that are due to the lack of performance by the Contractor. Examples of certain circumstances which will cause the Contractor to incur additional Architectural service fees include, but are not limited to the following:
  - a) Shop drawing submittals that are rejected due to being incomplete or for submitting on materials other than as specified and noted on the Bid Proposal Form.
  - b) Contractor elects to use more than (1) Sub-Contractor for any trade that results in duplicate shop drawing submittals.
  - c) Contractor requests a punch list in writing and Architect finds the work incomplete.
  - d) Contractor installs other than approved materials, resulting in additional time incurred by Architect.
  - e) Contractor changes Project Superintendent or Project Manager or fails to have Project Superintendent present on job when visited by the Architect, which requires Architect to educate new Project Superintendent to job status or repeat instructions.
  - f) Contractor's layout or installation is found to be significantly different than the design or shop drawings and the Architect is required to review, approve, or make extensive revisions.
  - g) Contractor's failure to promptly correct or make good any problem that is part of this contract work and falls under the Contractor's responsibility to properly work as intended, either during the course of construction, or during the close-out period, all of which requires additional time by the Architect for reviews, observations, etc.



- h) All Architect's/Engineer's time to close out the project beyond the thirty (30) days after substantial completion, including making phone calls, writing letters, reviewing documents, special close-out meetings, etc., unless a time extension has been approved with a signed change order.
1. Note: All additional time required by the Architect to resolve any of the above items will be back-charged against the contract amount based on the Architect's current hourly rate and made payable to the Architect by the Owner. The Contractor shall be informed by the Architect within ten (10) days of any incident of any intent to invoke back-charges for additional Architectural services. It shall be the Contractor's responsibility to request in writing any estimates of additional costs to be incurred. Contractor's failure to respond to the estimate in a timely manner will be interpreted as Contractor's acceptance of all additional Architectural services for back-charges as summarized by the Architect.

#### N. CONSTRUCTION SCHEDULE

As part of the Proposal Form, and on a separate document to be submitted with the Proposal Form, the Contractor shall provide the following items:

1. **Construction Schedule** - in a weekly bar chart format (Gant Chart) which outlines the following minimum requirements for this project:
  - a. Contract Award Date:
  - b. Pre-Construction Meeting Date
  - c. Physical Construction Start Date (Contracts, Bonds & Insurance must be signed and submitted)
  - d. List the anticipated Start and Completion Dates for the following items:
    - 1) Mobilize and set up on site
    - 2) Lesile House Window Replacement
    - 3) Leslie House Kitchen Sink, Insulating | Rerouting Existing Water Line & Related Work
    - 4) Leslie House Kitchen Floor & Related Work
    - 5) Caretakers House Roofing Replacement & Related Work
    - 6) Caretakers House Window Replacement & Related Work
    - 7) Caretakers House Exterior Concrete Stair Replacement & Related Work
    - 8) Site Work – Concrete Walk Replacement, Concrete Steps and Concrete Apron Replacement, Ramp Handrails and Related Work
  - e. List the anticipated dates of Major Milestones of Construction, including the following:
    - 1) Demo Work
    - 2) Rough-In Work
    - 3) Ready for Punch List
    - 4) Substantial Completion
    - 5) Final Certificate of Occupancy
    - 6) Final Completion (Project Close-Out)
2. **Contractor's Corporate Safety Plan** - Submit a written description explaining safety practices and procedures.
3. **Subcontractor Coordination Methods** - Submit a written description of methods for coordinating subcontractors and major material suppliers.

**END OF SECTION**

**DIVISION 2**

**SITE WORK**

**2.0 GENERAL**

A. SCOPE:

1. This Division includes providing and installing all materials, labor, equipment, etc., as herein specified or as shown on the drawings. Applicable portions of Division #1 form a part of this Division.
2. Contractor shall clean up and remove all debris from the premises caused by his operation.
3. Submit six (6) copies of shop drawings to the Architect for review of all materials before fabrication or installation. Included shall be aggregate base course mix design, asphalt paving mix designs, storm and sub-drainage systems materials data, etc. Submit spec data sheets of all materials to be used. No materials containing asbestos shall be used.
4. All work shall be of the highest quality performed by experienced workmen of each trade.
5. Contractor shall conform to all rules, standards, permits, inspections, etc., as required by all Utility Companies, Township, Road and Drain Commissions, etc., and perform all work per their standards.
6. Provide and maintain suitable temporary fences, barricades, lights, warnings, etc., for protection of public, Owner's employees, and others having access to the site.
7. Contractor shall keep clean and adequately protect all streets, walks, etc., from damage due to work or trucking.
8. The Contractor shall be responsible for the protection of trees, curbs, lawn areas, etc. At completion of the work, any damaged trees, lawns, curbs, etc., shall be replaced and/or restored to their original condition, including sodding and seeding, to the satisfaction of the Owner and Architect.
9. Contractor shall locate all underground utilities by contacting "Miss Dig" or responsible Utility Company, prior to beginning excavations.
10. Include all tap-in fees; permit costs, inspection fees and other related costs in performing the work.
11. Materials and installation shall be as per line and grade delineated and described on the drawings.
12. Coordinate any utility service downtime schedule with the Owner.
13. The Contractor at completion shall provide a complete "As Built" survey of the site within the contract limits, verifying all grades, inverts and elevations are within acceptable limits of design drawings, showing all changes, dimensioning and locating all underground utilities, manholes, catch basins, storms, sanitary water, gas, electricity. This shall be signed and dated by the Contractor, documenting the information is correct.
14. All pavement, walks, curbs and other hard materials shall be saw cut in straight perpendicular/parallel lines in regular geometric patterns. Walk sections and other similar work shall be removed back to nearest control joint for replacement of the full section.
15. Work includes, but is not limited to the following:
  - a) Site clearing, grubbing, tree and stump removal.
  - b) Top soil stripping, stockpiling, fine grading of topsoil.
  - c) Excavating, filling, backfilling, compaction, fine grading, etc., under, walks, and landscape areas.
  - d) General layout, grades, dimensions, etc.
  - e) Provide new fill from off site as required to produce finish grades.
  - f) Concrete walks, steps, topsoil, and fine grading.
  - g) Underground drainage.
  - h) Install new stabilized concrete backfill as indicated on plans.
  - i) Seeding, sod, mulch.
16. Related work specified in other Divisions:

- a) Concrete curbs, walks, slabs, etc. - see Concrete Division

## **2.1 EARTH WORK**

### **A. CLEARING & REMOVAL:**

1. Cut by mowing all weeds and grass. Carefully remove all trees, stumps/roots, shrubs, etc., in area affecting new work. Protect all existing that are to remain. Areas of removed tree stumps/roots to be backfilled and compacted with yellow bank sand as noted elsewhere.
2. Remove from site all miscellaneous concrete, asphalt, stone fill, rocks, etc., that affects the scope of this work or as shown on the drawings. Remove clay, sand and sub-soils from contract area and deposit on site in another area as directed by Owner. For re-use as lawn backfill later.
3. Contract limits shall include all land within the property lines, including public right-of-ways and as affected to perform this work.
4. In all earth/grass areas that remain in final design, within the contract limits, shall be scarified, earth turned over/rototilled, graded, raked, seeded and mulched for an all new grass area.

### **B. SURFACE STRIPPING:**

1. Strip organic soil from contract limit areas 8"-12" depth from the areas to be occupied by the building and paving/walk areas, which will be disturbed by the work under this contract.
2. Stockpile topsoil on site where shown or in area as directed by Owner for later use. Separate grass/roots from stripped topsoil, which will later be used as fill around addition at completion.

### **C. EXCAVATION:**

1. If suitable bearing is not encountered at the depth indicated on drawings for foundation, the Contractor shall immediately notify the Architect. He shall not proceed further until instructions are given and necessary measurements made for purpose of establishing additional volume of excavation (see testing).
2. Shore and brace excavations as required to prevent cave in. Remove shoring as backfilling progresses, but only when permanent supports are in place.
3. Place footings and foundations upon undisturbed and firm bottoms. Fill any excess cuts under footings with concrete.
4. Do not place footings or slabs on frozen ground. Protect bottoms of trenches and excavations with straw or other suitable materials.

### **D. BACKFILLING & ROUGH GRADING:**

1. Before placing fill, remove all debris subject to termite attack, rot or corrosion and other deleterious materials from area to be backfilled. Deposit backfill in layers not more than 8" thick. All fill material shall be reasonably free from roots, plaster, bats and frozen or otherwise unsuitable material. Stones larger than 4" shall not be permitted in the upper 6" of fill. Compact fill in layers. The finished sub-grade shall be brought to elevations indicated and sloped to drain water from building to match flush with existing grades.
2. Provide all cutting, filling and grading necessary to bring areas indicated to the following sub-levels:
  - a) Under Building - 8" below underside of slab with yellow bank sand. (4" stone fill minimum under slabs.).
  - b) Under Walks - 8" below finish grade (4" sand fill minimum under walks).
  - c) Under other areas (grass) - 4" below finish grade (4" topsoil required).
  - d) Under Paving - 12" below finish surface (8" stone and 4" of asphalt).
  - e) Under Roadway - M.D.O.T. #25-A C.I.P. pipe bedding to 6" minimum cover above water line, M.D.O.T. #21-A C.I.P., or control density backfill 50-100 P.S.I. to within 8" of underside of existing pavement (8" minimum #25-A C.I.P. to underside of pavement). Concrete/asphalt roadway patching to match existing thickness.
  - f) Under New Water Service Line in All Areas Within Road Right-Of-Way - 4" below finished grade, backfill with M.D.O.T. #21-A crushed limestone C.I.P. (4" topsoil or concrete).

- g) Under Lawn Area at Existing Water Line in Right-Of-Way - 4" below finished grade with yellow bank sand (4" topsoil required).
  - h) Under On-Site Paving - 10-1/2" below finished grade with M-Crete (6" stone base & 4-1/2" asphalt pavement required).
3. C.I.P. (Compact in Place) Fill - Shall be thoroughly compacted to 95% capacity at optimum moisture content as determined by the ASTM D 1557 (Modified Proctor) as indicated on plans or specified herein.
  4. Fill at asphalt drive areas shall be thoroughly compacted to 95% capacity at optimum moisture content as determined by the ASTM D 1557 (Modified Proctor). Existing soils within the paving limits (upper 6") shall be compacted to a minimum of 95% relative density before placing and compacting new fill.
  5. Fill occurring under supported concrete entrance platforms shall be loose forming, not tamped. Fill under other slabs shall be thoroughly compacted to 95% capacity at optimum moisture content as determined by the ASTM D 1557 (Modified Proctor). Existing soils within the building limits (upper 6") shall be compacted to a minimum of 95% relative density before placing and compacting new fill.
  6. Sub-grade (new and existing) shall be tested and approved by an independent Soils Engineer before placing of concrete slabs, paving, footings, etc. The Contractor shall utilize the same testing company who performed the soils report in this manual or one who will support the same findings/recommendations. This Contractor shall pay for all fees, inspections, reports, compaction tests, etc. and submit all reports verbally, followed in writing, to the Architect before placing additional fill or new work. Lifts shall be limited to 8" maximum. Testing shall include all existing and new fill (stone and sand). Footing bearing tests to be minimum of 3,000 lbs. per square feet.

Footing Bearing Tests - At each wall location, approximately every 20 lineal feet, depending on soil type changes. Critical locations to be at all columns, major beam bearing points, and against existing building.

Building Slab Density Tests - Shall be taken at approximately 15' x 15' grid starting against inside of walls, at all corners, under thickened slabs and other critical areas.

Paving Stone Density Tests - Approximately every 500 S.F., at edges, around catch basins, over utility trenches, major drive lanes, cut outs, patches, etc.

Testing of Sub-Base (Top of Stripped Soils) & Any New Fill (Sand/Stone) - Shall be made in every cut out area (1 of 2 points) and in other areas at the minimum rate of 1 for every 500 S.F. of paving surface. The actual locations in the field shall be as recommended and/or selected by the testing company and in any questionable areas as requested by the Architect/Owner. The testing and/or re-testing shall occur until the specifications are met and until the Testing Engineer submits report, stating that the surface is suitable for the next phase of work.

Density tests shall be taken by the testing lab using a calibrated nuclear densometer registered for the soils/fill type and density based on actual proctor.

In lieu of, and in conjunction with the nuclear densometer, the stripped cut base (natural soils) and the new stone base may be proofed rolled with a 20 to 30 ton hard rubber tired vehicle in the presents and direction of the testing lab technician.

7. Lawn areas to be rough graded to same slope as final grades specified (less topsoil thickness). Work level, drag, semi-compact and roll. All areas shall be free of all debris that might interfere or work-up through top soil and plant materials.
- E. FINISH GRADING:
1. Distribute topsoil to bring areas not occupied by walks, etc., to finish grade as shown on drawings. Finish grade shall be raked smooth and seeded. Topsoil shall be minimum of 4" thick.
  2. Finish grades shall correspond with existing grades, unless otherwise indicated. Excess top soil from stockpile that is left after finish grades are met shall be distributed on site, or removed as directed by Owner - grade smooth without dips and not to pond water, seed and mulch.
  3. All grading shall be uniform, without dips and areas to pond water, when upon completion ready for Owner to landscape, seed and mow.

F. MATERIALS:

1. Fill under lawns with new top soil furnished from off-site shall be natural, fertile, friable soil obtained from natural well drained areas and possessing characteristics of representative productive soil in vicinity. Shall be easily worked. Soil shall not be excessively acid, alkaline or contain toxic substances harmful to plant growth. Soil shall be without admixtures of subsoil and shall be cleaned, reasonably free from clay, lumps, stones, stumps, roots or similar substances 1" or larger in diameter, or other objects which might be a hindrance to planting operation. Topsoil 4" compacted depth and finely raked to finished elevations shown. Top soil from stockpile on site (stripped soils) may be re-used, providing it is clean, without rocks, grass, etc. as noted for new.
2. Bio-Swale Mix – Shall be made up of 20% organic compost, 50% sand and 30% topsoil. Soil to be mixed off site at the ratio noted. No onsite mixing permitted.
3. Porous Fill - Shall be make-up fill under slabs. Provide make up fill of clean yellow bank sand, compacted and tested in maximum 8" lifts from top of stripped soil to underside of stone fill. Provide minimum 4", #21A Michigan Series Crushed Stone, compacted and tested below all slabs.
4. Porous Fill (Sand) - Shall be Class 2 NS yellow bank sand, meeting ASTM C-33 compacted and tested in maximum 8" lifts from bottom of excavation to within 4" of finished grade (4" top soil required).
5. Porous Base on Site, Within Asphalt Drive, Cut-Out Areas - Provide minimum 6", #21-A Michigan Series Crushed Stone, compacted and tested in 6" lifts.
6. Stabilized Concrete Backfill (Ready Mixed Flowable Fill, RFF) - Shall consist of a mixture of 1,700 lbs. fly ash (dry weight), meeting ASTM C-618, 90 lbs., Type I Cement, meeting ASTM C-150 and 100-120 gallons of water for a 1.29 water-cement ratio and a minimum of 50 psi compressive strength at 28 days, similar to M-Crete as distributed by Messina Concrete Inc., of Monroe, MI. The flowable fill mixture shall be delivered to the job site in a revolving drum mixer truck and the temperature of the mix shall be at least 50°F. when placed. Submit mix design as shop drawing to the Architect.
7. Stone Bedding - Porous fill for pipe bedding shall be M.D.O.T. #25-A C.I.P. 3" minimum thickness under pipe, 6" minimum width both sides, with 6" minimum cover over pipe.

G. REMOVAL OF DEBRIS & EXCESS MATERIALS:

1. All debris (trees, stumps, roots, paving, rocks, stone, concrete, etc.) shall be entirely removed from the premises.
2. Good excavated materials remaining at completion of work (clay, sand, topsoil -no trees, roots, limbs, etc.), shall be deposited in areas on site as directed by Owner. Contractor shall grade level and seed excess materials not scheduled for re-use. If no areas are available on site for distribution, Contractor shall remove.
3. Good clean excavated/stripped materials (without grass clumps, rocks, etc.) may be used as base (clay/sand) fill in lawn areas within contract limits. Excess topsoil may be used as final surfacing in lawn areas.

**2.2 DRAINAGE**

A. SCOPE:

1. Provide and install all materials, equipment, permits, fees, etc., for storm system outside of building as shown on drawings or specified herein.
2. Work includes, but not limited to the following:
  - a) Storm under drainage system with all tile, fabric, etc., outside of building
  - b) Included shall be all excavating, backfilling, grading, concrete work, etc.
  - c) Bio-swale mix placement (See Earthwork for mix design)

B. MATERIALS:

1. Footing Tile – Perforated 4" diameter H.D. corrugated polyethylene type, "Drain Guard" with filter wrap, solid Tee's, Wye's ends and fitting as manufactured by Advanced Drainage System, Inc. Backfill with #6 washed stone and geo-textile filter wrap as manufactured by Advance Drainage System, Inc.

2. Geo Textile Filter Fabric - The geotextile shall be a needle-punched nonwoven made of 100% polypropylene staple filaments that resists ultraviolet and biological deterioration, rotting, naturally encountered basics and acids. Acceptable material shall be US 100NW, as manufactured by US Fabrics, Inc. 3904 Virginia Ave., Cincinnati, OH 45245 (800)518-2290. Fabric to be installed in accordance with manufacturers specifications.
3. Porous Fill - Pipe shall not be backfilled until inspections and tests have been performed. Backfill materials shall be free of rocks, debris and other foreign materials. Backfill in trench bottom to ¼ diameter of new pipe shall be #25A stone deposited in layers of 6" and properly graded to uniformly support pipe. From top of pipe bedding to underside of paving to be #21A stone compacted in 6" lifts, fill in lawn areas to be 6" layer of #25A stone compacted over pipe with earth fill to underside of top soil (compacted to 95% density as specified under earthwork).
4. Perforated tile sub-drains to be 4" diameter, heavy duty corrugated polyethylene type, with protective wrap sock and solid "T"s and end caps and fittings as manufactured by Advanced Drainage Systems, Inc. Backfill around and over top with pea gravel or #25A stone as shown on plans.
5. Concrete/Reinforcing & Masonry/Mortar - See Other Divisions.
- C. EXCAVATION:
  3. Do all excavations of whatever substances encountered to depths indicated.
  4. Excess materials not suitable for backfill shall be removed from site.
  5. Grade the bottom of trenches accurately. Grade to provide a uniform bearing support for each section of pipe. Shore and brace sides of excavations as required.
  6. Trenches shall not be backfilled until inspections and tests have been performed.
  7. Backfill materials shall be free of rocks, debris and other foreign materials. Backfill in trench bottom to 6" above pipe shall be #25A stone or fine gravel.
- D. INSTALLATION:
  3. Install under drain along entire length of walk with offsets/elbows around obstructions into exist. C.B.. Install washed stone, river rock, with secondary geo-textile filter wrap as detailed.
  4. Deflections from straight lines or grade between centerline made necessary by vertical or horizontal curves shall not exceed manufacturer's recommendations. If exceeded, provide special bends.
  5. Field cutting of pipe shall be done only with proper tools for clean, straight ends.
  6. On branch sewer lines as for the roof water system, all connections to other lines shall be made with "Y" fittings to direct flow - no "T" fittings. Use offset double "Y" fittings at juncture of two branches to main outlet. Provide and install sleeves through all porch/apron slab footings/foundations.

### **2.3 LANDSCAPING**

- B. GENERAL:
  3. All work shall be in compliance with these specifications and those as set up by the American Association of Nurserymen and the American Standard for Nursery Stock, and with American Sod Producers Association.
  4. Substitutions - These will be permitted only upon submission of proof that specified plants are not obtainable and with the authorization of the Architect to provide for the use of the nearest equivalent. Size and variety of plants. All requests for price adjustments due to substitutions will be submitted in writing to the Architect for approval, along with a request for use of the substitution.
  5. Submittals - Contractor shall submit to the Architect a complete list, specs., of all materials and seed/fertilizer to be used for review prior to beginning the work as shop drawing submittal
  6. Layout of Work - It shall be the responsibility of this Contractor to stake out plant locations in close conformity with the locations, which are designated on the drawings. After the staking has been completed. The Contractor shall contact the Architect for adjustment and approval of the staked locations.

7. Extent of Work:
- a) See drawings for extent of work to be graded/seeded and mulched. Basic area of Base Bid includes all areas affected by this contract.
  - b) The work included, but not limited to is the following:
    - (1) Within all edges and perimeters of new work for a distance of 10 feet, blending in with existing grades.
- C. SOIL PREPARATIONS:
- 3. Preparations - Work level and drag, all re-worked areas indicated as grass/lawn. Area required to be free of all matter of debris that might interfere with installation of top soil and plant materials. All earth areas scheduled to be grass within the contract limits shall be rototilled, earth turned over, scarified, graded, raked, rolled and planted with new grass and mulch.
  - 4. Grass/lawn area shall be worked, graded, leveled, seeded, etc., entirely, within the property lines and those areas beyond as disturbed by utility installation, drive cuts, walks, grading, fill, etc.
- D. MATERIALS:
- 3. Loam topsoil furnished for landscaping shall be natural, fertile, friable soil obtained from natural well drained areas and possessing characteristics of representative productive soil in vicinity. Shall be easily worked. Soil shall not be excessively acid, alkaline or contain toxic substances harmful to plant growth. Soil shall be without admixtures of subsoil and shall be cleaned, reasonably free from clay, lumps, stones, stumps, roots or similar substances 1" or larger in diameter, or other objects which might be a hindrance to planting operation. Topsoil 4" compacted depth and finely raked to finished elevations shown.
  - 4. Bio-Swale Mix – Shall be made up of 20% organic compost, 50% sand and 30% topsoil. Soil to be mixed off site at the ratio noted. No onsite mixing permitted.
  - 5. Fertilizer shall be standard 10-10-10. Spread evenly with mechanical spreader. Rate: 20 lbs. per thousand sq. ft., thoroughly incorporated into topsoil to depth of 2". Immediately before seeding, re-work surface until a fine pulverized smooth seedbed is established. Re-compact and finally remove weed roots.
  - 6. Top Soil for Planting shall be subject to approval by the Architect. Soil shall be fertile friable and sandy loam. Without admixture of subsoil and shall be reasonably free of stones, roots, sticks and other extraneous material. Shall be easily worked.
  - 7. Planting Mixture - Shall be material, which is used for tamping around the balls and roots in the process of planting. If prepared on the site. Mix four (4) parts topsoil to one (1) part peat. Adding five (5) pounds of superphosphate to each cubic yard of the mixture. This mixing shall be done by mechanical means. Subject to approval of the Architect. For ericaceous plants. Add acidifying fertilizer. Such as Greenleaf Compound - used in place of superphosphate.
  - 8. Peat shall be granulated Canadian Sphagnum raw peat or baled peat. Containing not more than nine percent (9%) mineral on a dry basis. For Ericaceous plants. Baled peat with a pH of 4.0 shall be used.
  - 9. Superphosphate shall contain twenty percent (20%) of phosphoric acid.
  - 10. Mulch for all plants and plant beds (around building) to be 100% shredded bark fiber. Landscape weed barrier shall be 6 to 8 mil. black polyethylene as manufactured by Visking Co., or equal. Install under entire bed. No holes, lap seams 12". Mulch to cover entire bed. (Porous weed barrier is not acceptable.).
- E. LAWNS:
- 3. Sod – Only certain areas shall be sodded as noted on drawings. If not noted, entire area shall be seeded/or hydroseeded.
    - a) Sod shall be best quality of Kentucky Blend grass and composed of 50% Baron. 30% Penn Lawn Fescue. 20% Fulyking. Samples shall be submitted to the Architect for approval prior to cutting and shipping.
    - b) Sodding shall be done on previously prepared surface. Correct all soft spots and inequalities before laying sod. Sod shall be laid without void between strips. Tamp or roll sod after laying. Final appearance to be true to grade, smooth, even and firm at all points. Protect sodded areas from displacements of any kind. Lightly sprinkle well screened soil over sodded areas being corrected and keep moist for three weeks. See 2.5, F-8.

4. Seeding - The following is a suggested seed mix design. The Contractor shall submit for review and approval to the Architect during shop drawing stage, the mix that best suits the site conditions and performs best to insure growth, durability, density and longevity.
  - a) 20% Baron Ky Bluegrass  
15% Kenblue/Newport KY Bluegrass  
35% Shadow/Jamestown Chewing Fescue  
30% Palmer/Citation II Per Ryegrass
    - (1) Maximum weed content shall be .05%, purity 90% and germination 85%.
    - (2) Operation:
      - (a) Spread fertilizer with mechanical spreader at a rate of 20 lbs. per 1,000 sq. ft., and/or at rate as recommended by seed manufacturer - incorporate into topsoil to a depth of 2 inches at a rate of four hundred pounds per acre.
      - (b) Seed - sown evenly at a minimum rate of 6 lbs. per 1,000 sq. ft. and as recommended by manufacturer. Seeds shall be planted using a grass drilling machine which mechanically spaces and sets seeds into the soil evenly and consistently the same.
        - (i) Mulch shall be chopped hay, straw, applied at a rate of 1,250 lbs. per acre.
        - (ii) Immediately water all seeded/mulched areas.
      - (c) Owner will assume maintenance of seeded area, regarding watering and mowing.
      - (d) After a suitable period of time for normal germination and growth to begin, Contractor shall re-check job with Owner and re-seed where required to establish a final dense lawn.
5. Hydroseeding: (Optional to seeding.)
  - a) Seeding: The following is a suggested seed mix design. The Contractor shall submit for review and approval to the Architect during shop drawing stage, the mix that best suits the site conditions and performs best to insure growth, durability, density and longevity.
    - (1) Materials:
      - (a) 20% Baron Ky Bluegrass  
15% Kenblue/Newport KY Bluegrass  
35% Shadow/Jamestown Chewing Fescue  
30% Palmer/Citation II Per Ryegrass
        - (i) Maximum weed content shall be .05%, purity 90% and germination 85%.
      - (b) Commercial fertilizer shall be same as in Article 2.5, C-2.
      - (c) Loam topsoil shall be same as in 2.5, C-1.
    - (2) Operation:
      - (a) Spread fertilizer with mechanical spreader at a rate of 20 lbs. per 1,000 sq. ft., and/or at rate as recommended by seed manufacturer - incorporate into top soil to a depth of 2 inches or incorporate in the Hydro-Slurry mix at a rate of four hundred pounds per acre.
      - (b) Seed - sown evenly at a minimum rate of 6 lbs. per 1,000 sq. ft. and as recommended by manufacturer. Apply seed mixture by Hydro-seeding.
        - (i) Mulch for Hydro-mulching shall be mulched with chopped hay, straw, for use in spray applicators and applied at a rate of 1,250 lbs. per acre.
        - (ii) Immediately water all seeded/mulched areas.
      - (c) Owner will assume maintenance of seeded area, regarding watering and mowing.
      - (d) After a suitable period of time for normal germination and growth to begin, Contractor shall re-check job with Owner and re-seed where required to establish a final dense lawn.



F. PLANTING OPERATIONS:

3. Preparation - All plants, except vines and ground cover should have a pit excavated for them, large enough to allow one (1) foot of space around the ball or roots. Within a minimum diameter of two and one-half (2-1/2). Pits for trees of six inches (6") calibe and greater, provide eighteen inches (18") of space all around the ball. Hedge plants may be planted in a continuous trench, twenty-two inches (22") minimum width and depth, instead of in separate pits. Ground covered beds to be prepared six inches (6") deep and flow beds twelve inches (12") deep. Vines to be planted in a pit one foot (1') in diameter and eighteen inches (18") deep minimum. Sub-soil from pits. Trenches and beds shall be re-graded on other areas of this site.
4. Planting - A minimum depth of four inches (4") of planting mixture shall be placed in the bottom of pits and trenches. As much as is necessary shall be placed under the ball of roots, so that they will rest thereon when the plant is set at the required grade. The Contractor is responsible for planting to correct grades and alignment and all plants shall set, so that when settled, they will bear the same relationship to grades as before being transplanted. No filling will be permitted around trunks or stems. Each plant shall be set in planting mixture in the center of the pit or trench. Roots of bare-rooted plants shall not be allowed to mat together, but spread and arranged in their natural position and have planting mixture worked in among them. All broken frayed roots shall be properly cut off. When the plant has been properly set, the pit shall be backfilled with planting mixture, gradually filling, tamping and settling with water. No soil in frozen or muddy condition shall be used for backfilling. A ring of soil shall be formed around the edge of each plant to hold water. Even if planting is on a slope, the collar shall be arranged so that it will hold water. The Contractor shall make adjustments in the location of plants where necessary as directed by the Architect.
5. Mulching & Watering - All planting shall be mulched with a 4" cover of bark. Plant beds shall be completely covered with a three-inch (3") layer of mulch over poly barrier. All plants shall be thoroughly soaked after planting. After each watering all beds shall be raked and left in a complete and finished manner.
6. Pruning & Repair – Upon completion of work of this contract, all trees and shrubs shall have been pruned and injuries repaired. The amount of pruning shall be limited to the minimum necessary to remove dead or injured twigs and branches and to compensate for the loss of roots from transplanting. Pruning shall be done in such a manner as to not change the natural habit or shape of the plant, except for bare root plants and trees, which shall be pruned as directed by the Architect. All cuts to be flush, leaving no stubs. All cuts  $\frac{3}{4}$ " diameter shall be painted with tree paint.
7. Transplanting - Executed with the same procedure and care as new planting. Areas from which plants are moved shall be restored to their original state.
8. Trees - Guyed securely with pliable, zinc-coated iron or steel wire, 12 gauge. Cover at contact with tree using dark fabric rubber hose. No eyebolts or nails are permitted. All trees from one to six inches caliper shall be guyed by three double twisted wires secured to 2 x 4 wood stakes, set solidly in ground, 24" deep and outside tree pit. Tree under three inches caliper shall be guyed to vertical stakes, standing five feet above ground.
  - a) All guys to be flagged
  - b) Trunks of deciduous trees shall be inspected for injuries, insect infestation or disease and treated as required. Trees larger than six to eight feet above grade shall be wrapped with standard tree wrapping, from first branch to grade and secured with suitable cord.
9. Contractor - Shall protect all plants and lawn from damage at all times. If plants or lawn are damaged, they shall be replaced or treated by the Contractor at his own expense as required by the Architect. The moving of heavy equipment or material over lawn areas shall be done on planks where possible.
10. Watering & Maintenance:
  - a) This Contractor shall assume responsibility for maintaining his work for a period of thirty (30) days immediately following complete installation of each major category of work.
  - b) Maintenance of Trees, Shrubs & Evergreens - Shall consist of pruning, cultivating, weeding, watering, keeping guys taut and trees erect, raising tree balls which settle below grade, finishing and applying such sprays as are necessary to keep the planting free from insects and diseases.
  - c) Watering & Mowing of Grass Areas - Shall be the responsibility of the Contractor for a period of three weeks following laying of same, or as much longer is necessary to establish a uniform stand of the specified grasses and until accepted by the Owner. All subsequent watering and mowing of sod shall be the responsibility of the Owner.

- d) Contractor shall provide all equipment as required, such as hoses, rakes, shovels, mowers, trimmers, etc. Connection shall be made to exterior hose faucets. Owner to pay for water once building is accepted.

G. ACCEPTANCE:

- 3. At the end of the period of guarantee, final acceptance will be made by the Owner and Contractor provided all requirements of the specifications have been fulfilled.

H. CLEAN-UP:

- 3. Any paved areas which hauling operations are conducted shall be cleaned daily. Any top soil or other dirt or debris which may be dropped on the surface shall be removed promptly. As the various sections of work are completed, the ground shall be cleared of all debris and surplus materials resulting from the Landscape Contractor's operations.

I. GUARANTEE:

- 3. The Contractor shall submit a written guarantee that all plants that die or are unhealthy from natural causes or from improper planting for a period of one year after notice of substantial completion, shall be replaced with new. Damage to lawns or other planting incurred, as a result of replacement operation, shall be repaired by the Contractor at his own expense. See sample Guarantee in Instructions To Bidders.
- 4. It is understood that the Contractor cannot assume responsibility for damages or loss of plants or trees caused by fire, flood, lightning, storm, freezing rain, high winds over sixty (60) miles/hour, vandalism or damage caused by other Contractors. Guarantee is also required for existing plants transplanted within the site.
- 5. Inspection of the planting will be made jointly by the Owner/Architect and Contractor's representative prior to determination of the one (1) year guarantee, as indicated in Article G. Replacement of plants are required for those plants which are not in a healthy growing condition. Replace with same before close of next planting season.
- 1. Owner will remove all guying, staking, etc., when plants are firmly rooted.

**END OF SECTION**

**DIVISION 3**

**CONCRETE**

**3.0 GENERAL**

A. SCOPE:

1. Under this Division shall be providing and installing all materials as herein specified or as shown on drawings or required for a complete installation.
2. Submit six (6) sets of shop drawings to the Architect for approval of any reinforcing steel requiring special bending or fabrication not otherwise shown on the drawings. Submit spec data sheets of all materials to be used (concrete mix, curing agents, special equipment, etc.). No materials containing asbestos shall be used.
3. Work includes, but is not limited to the following:
  - a) Interior and exterior concrete slabs, concrete walks, concrete curbs, steps, etc.
  - b) Foundations, footings, mass pour stairs, etc.
  - c) Concrete ramps, corridor floors, etc.
4. Related work specified elsewhere:
  - a) Excavation, fill, compaction, etc.

**3.1 FORMWORK & ACCESSORIES**

A. MATERIALS:

1. Lumber used in forms for exposed surfaces shall be dressed to a uniform width and thickness and shall be free from loose knots or other defects. Joints in forms shall be horizontal or vertical. Undressed lumber may be used for rough work or unexposed work.
2. Expansion joint to be fiberboard impregnated with not less than 35% nor more than 50% of asphalt by weight. Joint material to be full thickness of slab or joint and 1/4" thick interior and 1/2" thick exterior.

B. INSTALLATION:

1. Forms shall conform to the same shapes, lines and dimensions of the concrete as indicated on the drawings. If the nature of the soil will permit, trenches for wall footings may be cut to accurate sizes and side form omitted where the earth will properly contain the concrete. Conform with requirements/recommendations of ACI 347 for formwork.
2. Joints:
  - a) Construction joints to be installed with keys or dowels as shown on drawings. Reinforcing steel to continue across joint. Bond shall be with adhesive as manufactured by Sika Corporation.
  - b) Control joints to be installed at maximum 12' in slabs 4' to 5' in walks, or where shown on drawings. Exterior control joints shall be hand tooled into green concrete - no saw cut joints. Interior control joints to be sawed while concrete is still green. Shall be maximum 3/16" wide and minimum 1/4 slab thickness depth.
  - c) Expansion and isolation joints to be set where all horizontal surfaces abut vertical surfaces and in horizontal surfaces. Joint material to extend through full slab thickness. Reinforcing is not to extend through joint. Install at 20' intervals in walks, curbs, floor slabs, at all change of directions in walks, and where shown on drawings. Joints at exterior slabs/walks against buildings shall be held down 1/2" and caulked. See Sealants.

**3.2 REINFORCING**

A. MATERIALS:

1. Bars shall be of quality and character meeting the requirements of the latest Standard Specifications for Billet Steel Reinforcing Bars of ASTM A-615, Grade 60. Size shall be hereafter specified or as noted on drawings.
2. Welded wire fabric for concrete reinforcement shall conform to the requirements of the Standard Specifications for Cold-Drawn Steel Wire for Concrete Reinforcement (ASTM Designation A-185). Shall be size as noted on drawings.

CONCRETE

3. Metal accessories, including spacers, tees and other devices necessary for properly placing, spacing, supporting and fastening reinforcing in place. Accessories shall be placed in accordance with the CRSI Code unless otherwise noted.

B. FABRICATION & DETAILING OF REINFORCING:

1. Reinforcement shall be carefully formed to dimensions on the plans and as recommended in "Details & Detailing of Concrete Reinforcement" (ACI SP-66. Placement of bars shall conform to latest CRSI "Recommended Practice for Placing Reinforcement Bars"), details and detailing of concrete reinforcing ACI 315, and guide for concrete floor and slab construction ACI 302.1-R.
2. Metal reinforcement shall not be bent or straightened in a manner that will injure the material. Bars with kinks or bends not shown on the plans shall not be used.
3. Unless otherwise noted, lap continuous bars 36 diameters, but in any case not less than 15". Horizontal bars shall continue around corners minimum of 15" unless otherwise noted. Provide corner bars equivalent in size and number to horizontal bars at corners and wall footings and lap with horizontal reinforcement.

C. INSTALLATION:

1. Reinforcement shall be free from rust, scale and oil, and shall be accurately positioned and secured against displacement by using annealed wire of not less than No. 16 Ga., or suitable clips at intersections and shall be supported in a manner that will keep all metal away from the exposed surface of the concrete.
2. The minimum concreted cover shall be: for concrete exposed to the weather 1-1/2" for #5 and smaller, 2" for #6 and larger; 3" for concrete on or below ground; 3/4" in slabs on grade, walls and joists, and 1-1/2" for beams, girders and columns.
3. Lap mesh a minimum of one grid spacing (plus 2") and insure that mesh is completely embedded in the concrete approximately 2" from the bottom of the slab.
4. Dowel masonry foundation walls to concrete entrance aprons and footings minimum of 24 bar diameters into each wall and footing at 24" O.C. with (1) - #5 unless noted otherwise on the plans.
5. All reinforced pilasters, masonry door openings, bearing walls under beams, etc. shall have vertical foundation/footing dowels extended into walls for full height reinforcing. (From footing to top of masonry wall).
6. Dowel all exterior concrete slabs/walks into concrete porches and aprons with #4-bars 24" O.C. unless noted otherwise.
7. Provide reinforcement in top of interior wall footings centered under door and other openings equivalent in size and number to bottom reinforcement and 4 feet longer than opening.
8. Minimum reinforcement unless noted otherwise:
  - a) Walls 8" or less in thickness: #5 at 12" each way centered in wall.
  - b) Walls thicker than 8": #5 at 12" each way in each face.
  - c) Slabs on grade or slabs on joists: 6" x 6" W 1.4 x W 1.4 W.W.F.

**3.3 CAST IN PLACE CONCRETE**

A. MATERIALS:

1. Interior cement shall be Portland - ASTM C-150, Type 1. Exterior cement shall be same with Air-Entraining Admixture, Type 1A, for exterior walks, slabs, etc.
2. Concrete aggregates shall conform to standard specifications for concrete aggregates, ASTM C-33. To consist of crushed stone, gravel or slag. The maximum size of aggregate shall not be larger than 3/4 of the minimum clear spacing between reinforcing bars.
3. Sand to consist of clean, hard, durable, un-coated grains free from salt, loam and clay. Sand shall be M.D.O.T., Class 2 NS, meeting A.S.T.M. C-33.
4. Water shall be clean and fit to drink
5. Vapor Barrier - See Division #7

CONCRETE

6. Mix Design - Submit design mix for approval before concrete is installed.
  7. Curing Agent - See Item E - Finishes.
  8. Water Stops – Multi-ribbed, key way design and others as detailed on drawings, for non-limited movement as manufactured by Bometals, Inc., Powder Springs, GA, 800-862-4835 or approved equal.
- B. STRENGTH & PROPORTIONING CONCRETE:**
1. Concrete for all parts of work shall be homogeneous, and when hardened, shall have required strength, resistance to deterioration, durability, resistance to abrasion, watertightness, appearance and other specified properties.
  2. Proportioning of concrete shall be in accordance with applicable sections of ACI 301, with regard to type of concrete.
  3. Minimum compressive strengths at 28 days: building footings, foundation walls and interior slabs shall be 4,000 PSI; (exterior slabs, walks, integral footings and curbs shall be 4,000 PSI air entrained – 4% - 6% air).
- C. MIXING, PLACING & CURING:**
1. Mixing, placing and curing shall conform to ACI 301, ACI 305-R hot weather concreting, and ACI 306-R (cold weather concreting) and ACI 304-R (measuring, mixing and placing). Ready mixed concrete may be used and shall be mixed and delivered in accordance with ASTM 094-55T. Delivery tickets shall be recorded for inspection showing batch No., mix admixtures, time, water content, etc. Submit copies to Architect.
  2. Before concrete is placed, all equipment for mixing and transporting concrete shall be cleaned, all debris shall be removed from spaces to be occupied by the concrete, forms shall be thoroughly wetted and oiled, water shall be removed from excavations, and all work to be built into the concrete shall be in place, inspected and approved by the Architect.
  3. Concrete shall be handled from the mixer to the place of final deposit as rapidly as possible by methods, which shall prevent the separation or loss of ingredients.
  4. Concrete shall be thoroughly compacted, spaded and/or rodded.
  5. Weather Conditions:
    - a) Concrete shall not be placed during rain, sleet or snow, to avoid adding to the water content or damage surface finish.
    - b) Below mean daily temperature of 40 degrees F.; concrete temperature as placed shall be 50 degrees F.; above mean daily temperature of 90 degrees F.; the concrete temperature shall not be allowed to exceed 90 degrees F.
  6. Curing:
    - a) Protect concrete against rapid drying and keep moist for a least six days after pouring, and cement finishes shall be sprayed during the curing period as frequently as drying conditions may require, and if necessary, protect by suitable temporary coverings.
    - b) When the mean daily temperature is below 40 degrees F., the concrete shall be cured with temperatures between 50 degrees F. - 70 degrees F.
    - c) Protect finished work from traffic for five days.
    - d) Install a curing and sealing agent on all exterior concrete.
- D. TESTING:**
1. General Contractor shall include in bid costs to take slump and break (compression) tests by an approved testing laboratory. Shall include three 6" diameter x 12" cylinders per test. Tests shall be made in accordance with ACI Specifications. Test should be every 50 cubic yards and every days pour. One cylinder to remain in field and cured for twenty-eight days under same conditions as concrete in place. Others to be laboratory cured. One break at seven days, two break at twenty-eight days.

2. Cylinders that do not meet design strength will result in the concrete being replaced or required additional testing at the Contractor's expense to assure the questioned concrete meets design specifications.

E. FINISHES & SPECIAL INSTALLATION:

1. Screed floors to proper level, float and trowel. After floating to proper level, allow concrete to stand until all water sheen has disappeared. Do finish troweling with steel trowel after concrete is so hard that no mortar accumulates on the trowel and a ringing sound is produced as the trowel is drawn over the surface.
2. Finished floor shall be smooth and hard and free from trowel marks or holes. All floors must be free from irregularities, waviness, rough spots and any other defects, with maximum variation of 1/8" in 10' diameter.
3. Finish exterior walks and platforms with magnesium trowel and give a lightly swirled, non-slip trowel finish.
4. Tactile surface of ramps with detectable warning strip shall be contrasting solid color pre-manufactured polymer composite tiles as manufactured by Armor-Tile Tactile Systems, 1-800-682-2525 or cast iron plates as manufactured by East Jordan Iron Works (800) 231-3549. Install units directly into wet concrete without anchors or adhesives in strict compliance with manufacturer's installation instructions.
5. Building entrance slabs shall be 6" thick with #4 bars 12" on center each way over metal decking formwork. Rub any exposed edge surfaces.
6. All exposed surfaces when forms are stripped shall be sealed with a light cement sand mixture. Thoroughly wet surfaces and rub with burlap to fill all air pockets and voids.
7. Install a curing and sealing agent on all exterior concrete. Curing agent to be clear, as manufactured by Euclid, or W.R. Meadows, water base/resin solids - non-toxic, or approved equal.
8. Chamfer all exposed edges 3/4" x 45 degrees.

F. COLD WEATHER CONCRETE:

1. Contractor shall exercise precautions as outlined in ACI 306-R for concrete installed in cold weather. Included is all heating equipment, fiberglass insulation, visqueen, etc., as required to thoroughly protect the concrete.
2. The Contractor shall notify the Architect of any concrete placement within twenty-four hours in advance. Failure to do so will result in concrete removal and replacement at the Contractor's expense.

**3.4 GYPSON CEMENTITIOUS UNDERLAYMENT**

A. SCOPE:

1. This spec for topping and leveling wood floors is based upon using products as manufactured by Maxxon Corp., 920 Hamel Road, Hamel, MINN 55340 (1-612-478-9600) or approved equal and as installed by Light Crete Systems, Inc., Whitmore Lake, MI 48189 (734-449-4454).
2. The work shall include, but not limited to the following:
  - a) Surface preparation
  - b) Installation – to smooth existing wood floor from 0" to 1/8" thick.
  - c) Clean-Up.
3. Installation shall be by an applicator authorized by the Maxxon Corporation using Maxxon approved mixing and pumping equipment. Work in this section shall include all equipment, materials, and labor, as required to level the floor.
4. Materials shall be delivered in their original, unopened packages, and protected from exposure to the elements. Damaged or deteriorated materials shall be removed from the premises.
5. Before, during and after installation, the building interior shall be enclosed and maintained at a temperature above 50 degrees F (10 degrees C). This contractor shall coordinate with the General Contractor the details of sequence of this work as well as any utilities (water, electric, etc.) needed for proper installation. This room/area is turned over to the general contractor and their subs for complete control and responsibility of the work.

B. MATERIALS:

1. Gypsum Cement: Floor underlayment shall be Level Right, Gyp-Crete and/or Dura-Cap gypsum cement as manufactured by Maxxon Corporation, Hamel, MN or "approved equal" as determined prior to contract award.
2. Sand Aggregate: Sand shall be 1/8 inch (3mm) or less, washed masonry or plaster sand, meeting requirements of Maxxon Corporation Sand Specification 101.
3. Mix Water: Potable, free from impurities.
4. Subfloor Primer: Maxxon Floor Primer
5. Sealer: Maxxon Overspray
6. Floorstone: For minor irregularities and feathering out to a smooth transition, use Ardex K-55 or equal as manufactured by Ardex, Coraopolis, PENN, (412) 264-4240.

C. PREPARATION:

1. Condition and Cleaning of Subfloor: Subfloor shall be structurally sound. This Contractor shall clean subfloor to remove mud, oil, grease and other contaminating factors as required. Floor shall be "shot blasted" to remove all loose materials and roughen surface to assure proper adhesion of the topping. No grinding/scarifying will be allowed, or any other process, which produces too much dust.
2. Leak Prevention: Fill cracks and voids with a quick setting patching or caulking material where leakage of topping material could occur.
3. Prime the Subfloor: Prime concrete subfloor using the Maxxon Floor Primer. Priming instructions vary according to the porosity of the concrete, multiple coats may be necessary.
4. Expansion Joints: Allow joints to continue through the topping at the same width.
5. Obstructions: The General Contractor, under other sections or divisions, is to cap and abandon plumbing drains (Plumbing Contractor), fill trench drains flush with adjacent floor, cut off all projecting bolts, remove and fill all hoists, fill vehicle exhaust system, and other removed/abandoned items.
6. Forming: Form back 4'± from all openings using 1/4" thick plywood, meet the existing adjacent floor flush. Once topping is set, remove form board and feather out between the topping and existing floor over the 4' distance using fastening floorstone product.

D. INSTALLATION:

1. Scheduling: Application of topping shall begin or be phased as determined by the General Contractor.  
NOTE: Existing roof deck/structure and existing walls shall be washed down and painted (by others) prior to beginning of this work.
2. Mixing: Mix proportions and methods shall be in strict accordance with product manufacturer recommendations. Top 3/4 to 1" thickness shall be mixed to give 3,000 PSI compressive strength. Remaining thickness (basically in center of floor area where thickness is greatest 3"±) the mix can be reduced to 2,000 PSI± compressive strength.
3. Application: Place topping from 0" to 1/8"± minimum over wood. Spread and screed to a smooth surface. Except at authorized joints, place continuously as possibly until application is complete so that no slurry is placed against this product that has obtained its initial set. Featheredging may be accomplished with Floorstone products at all doorways and transitions to existing floor.
4. Drying: General Contractor shall provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the topping is dry. General Contractor shall provide mechanical ventilation if necessary. This contractor shall determine dryness as recommended by the topping manufacturer and advise/coordinate with the general contractor as to methods to obtain proper cure.
5. Fillers: Do not use rigid insulation type boards as fillers in deep areas so as to reduce the amount of top coating. A lightweight concrete may be used or changing the mix design of the topping as noted elsewhere.

E. FIELD QUALITY CONTROL:

1. Slump Test: Mix shall be tested for slump as it's being pumped using a 2 inch by 4 inch (50 mm by 101 mm) cylinder resulting in a patty size of 8 inches (203 mm) plus or minus 1 inch (25 mm) diameter.
  2. Field Samples: At least one set of 3 molded cube samples shall be taken from each day's pour during the application. Cubes shall be tested as recommended by the Maxxon Corporation in accordance with modified ASTM C 472. Test results shall be available to architect and/or contractor upon request from applicator. Samples shall be taken of each mix design used.
- F. PROTECTION:
1. Protection From Heavy Loads: During construction, the general contractor shall place temporary wood planking over this topping wherever it will be subject to heavy wheeled or concentrated loads. This contractor is to advise the general contractor when the topping surface is able to be worked on by other trades and when suitable for installing final floor finishes such as vinyl tile/carpet/etc.

**END OF SECTION**



**DIVISION 5**

**METALS**

**5.0 GENERAL**

**A. SCOPE:**

1. The work under this Division shall include providing and installing all steel including beams, columns, angles, plates, lintels, hangers, incidental items, and as specified herein.
2. Submit six (6) sets of shop drawings to the Architect for review of all metal work. Shop drawings shall clearly show spacing and size, type number, length and all construction accessories. Any errors in dimensions shown on shop drawings shall be the responsibility of the Contractor.
3. All steel beams, miscellaneous steel, etc., shall have one heavy coat of rust inhibitive paint applied in the shop. It shall be clean of all rust, scale, sand and other foreign matter before painting. Patch paint in the field in case of damage due to welding, installation, etc. Note: any concealed lintels/beams built into masonry or concrete, shall be field painted with (2) coats of alkyd paint before installation.
4. Steel fabricator to design beam connections for reactions indicated or where not indicated, one half of total uniform load capacity of a simple beam for span given as specified in latest AISC Manual of steel construction. Design connections of bracing members for member forces indicated, or where not indicated, for the full tensile and compressive capacities of the bracing member.
5. Submit spec data sheets on all materials used (paint coatings, etc.). Materials containing asbestos shall not be used.
6. See painting, Division #9, for complete painting of exposed steel members.

**5.1 MISCELLANEOUS METAL**

**A. MATERIALS:**

1. Provide any miscellaneous angles as required for installation of work by other trades. Included are clip angles, closure plates, nosings, etc.
2. Provide all floor nosing angles, door jamb channels, etc., in sizes and type as shown.

**B. INSTALLATION:**

1. Fabricate and install metal work with sharp lines, angles, true and plumb-weld all connections, not otherwise shown, and fill smooth for painting any exposed surfaces.
2. Installation of metal shall be compatible with the adjacent materials. Provide any necessary spacers, isolators, shims, anchors, etc.
3. Install guard posts as noted on drawings. See Division #3 for setting in concrete footing.
4. Turn over to Masonry/Concrete Contractor all metal items required to be installed into their work. Provide all templates, instructions, and other data to insure proper installation.
5. All members shown or required to have anchors embedded in masonry or concrete (floor nosings, door jambs, cantilevered beams, etc.) shall be shop assembled and welded. Unless noted otherwise, minimum anchors shall be 1/2" diameter x 12" with hooked end at 2'-0" on center and back welded full circumference of anchor.

**5.2 STEEL PIPE RAILINGS**

**A. MATERIALS:**

6. Steel pipe railings shall be shop fabricated of 1-1/2" nominal extra strong steel pipe with an inside diameter of 1.500" and a wall thickness of 0.200", weighing 3.63 pounds per foot in conformance with ASTM A53, grade B, or A501.
7. Pickets shall be 3/4" diameter and spaced 4" on center vertically and factory assembled with a tight fit to the top rail and bottom rails to assure squareness and rigidity.
8. Pipe railing sleeve inserts for installing pipe railings to top side of concrete ramps, stairs, etc., shall be fabricated of 3" inside diameter standard stainless steel pipe 6" long with a stainless steel bottom cap. Provide all pipe sleeves and spacing layout for embedding into concrete to Concrete Contractor.
9. Shop welds shall be made with L50 electrode wire, conforming to AWS A5.18 and A5.17.
10. Field welds shall be made with E-70XX electrodes.
11. All pipe railings and fittings shall have one shop coat of primer applied per Federal Specifications TT-P-664C (rust inhibitive primer).

B. INSTALLATION:

12. Railings shall be shop fabricated and componditized as much as practical to minimize field assembly work. When complete, railing shall be a continuous welded unit.
13. All work shall be installed with post and pickets plumb and rails straight in alignment. Assembly of components shall be performed in strict accordance with the manufacturer's recommendation for the installation and with loading and spacing requirements per latest Uniform Building Code, including the Barrier Free Requirements as adopted by the State of Michigan and Federal American Disability Act (ADA).
14. Railings where anchored to stops of curbs, walls, etc., shall have proper brackets, flange plates, etc., welded to post + rail ends. Anchor with expanding type stainless steel fasteners. Brackets to be adjustable in rail offset distance to maintain a minimum 1 1/2" hand clearance while also maintaining a straight continuous rail shape.
15. Railings where anchored to walls, shall have proper brackets, flange plates, etc., welded to rail ends. Anchor with expanding type fasteners of galvanized finish.
16. Fabricate and install work formed true to line, angle and radius, as indicated on the drawings. All connections, unless shown otherwise, shall be welded, ground and filled smooth, ready for field painting by others.
17. All pipe ends not connecting to another pipe or steel member shall have steel end caps installed, welded and ground smooth.
18. Materials shall be properly stored on site to prevent bending, elevated and covered with protective tarps to prevent damage from weathering.
19. Install square and level, parallel to slope of ramps and stairs, free from distortion or defects, detrimental to appearance or performance. Installation shall be compatible with the adjacent materials. Provide any necessary spacers, isolators, shims, anchors, etc., in compliance with manufacturer's instructions and approved shop drawings.
20. Install pipe railing into pipe sleeves, using a non-metallic, no-corrosive, non-shrinking grout, equal to "Por-Rok" epoxy grout. Hold grout 1/2" below finish surface and fill remaining surface with urethane sealant equal to Tremco, Dymonic. Submit grout and sealant data sheets to Architect for approval prior to installation.

**5.3 NON-WELDED ALUMINUM PIPE RAILING**

A. MATERIALS:

1. All posts and rails shall be formed from extruded 6063-T6 aluminum of 1-1/2" schedule 40 pipe size, except where they are formed elbows, whereby 6063-T4 is used. Pickets shall be 3/4" diameter and spaced 4" on center vertically and factory assembled with a tight fit to the top rail and bottom rails to assure squareness and rigidity.
2. All railing accessories shall be cast from ANSI 713 alloy.
3. All fasteners used in the system shall be aluminum or stainless steel.
4. All exposed aluminum shall have a clear satin anodized finish.
3. All aluminum railing components and accessories shall be Series 550 Pipe Picket Railing as manufactured by Superior Aluminum Products, Inc., 105 Francis Street, Russia, Ohio 45363. (Phone – 937-526-4065) and as distributed by Monroe Fencing Co., Monroe, MI, (phone – 313-243-1294) or pre-approved equal. Welded aluminum railings will not be accepted.

B. INSTALLATION:

1. Railings shall be shop fabricated and componditized as much as practical to minimize field assembly work. When complete, railings shall be a continuous unit.
2. Fabricate and install work formed true to line, angle and radius, as indicated on the drawings. All connections shall be assembled without welding using mechanical fasteners at intersections and by structural adhesive at splice joints. All railings shall meet the requirements of the ADA and the current Building Code.
3. Rail assembly shall be 36" height from walking surface to top of rail and mounted to the sides of the landing structure with No. 540 Side Mount Flanges not to exceed 6'-0" on center.

4. Post spacing shall be as indicated on the drawings, but shall no exceed 6'-0" on center. All posts shall be unspliced single pipe lengths. Lower rails shall be a single unspliced length between posts. All top rails shall be continuous whenever possible. All fasteners shall be tightened so that completed railing is rigid and completely free of play at joints and component attachments.
5. All pipe cuts shall be square and accurate for minimum joint gap. Cuts shall be clean and free of chamfer, from deburring, nicks and burrs. Holes shall be drilled the proper size for a tight flush fit of rivets and screws. All posts grouted in concrete shall have one 1/4" diameter weep hoe, 1/2" above post collar, in the plane of the rail.
6. All pipe railing splices (if any) shall be made no more than 12" from the nearest post.
7. All wall railings shall have end returns and be capped. Wall rails shall be mounted onto wall brackets installed to wall with stainless steel fasteners as recommended by the railing manufacturer.

**END OF SECTION**

**DIVISION 6**

**WOOD & PLASTIC**

**6.0 GENERAL**

**A. SCOPE:**

1. This Division includes providing and installing all materials for rough and finish carpentry as specified herein, shown on the drawings, or required for a complete installation.
2. Contractor shall submit color samples of all materials requiring selection.
3. All finish materials shall be installed under conditions of temperature and humidity closely approximating those, which will exist when the building is occupied. Proper on site storage shall be provided. Cover to protect from rain all lumber. All trim finish flooring, etc., shall be stored inside building minimum of 48 hours before installing.
4. Submit six (6) sets of shop drawings for cabinets, built-ins, etc., to the Architect for review prior to fabrication or installation. Shall show materials, sizes, construction, clearances, built-in hardware, erection details, etc.
5. Submit spec data sheets for materials used (wood, glues, paints, laminates, etc.). Materials containing asbestos shall not be used.
6. Finish work shall be installed with close miters, coped at angles, full lengths where possible, and secured with finishing nails, screws and glue. Set all fasteners for putty.
7. Work included, but not limited to the following:
  - a) Structural and miscellaneous wood framing, studs, plates, blocking, bracing, headers, etc.
  - b) Temporary work
  - c) Fascia, nailers, blocking, etc.
  - d) Window/door trim, cased openings, railings, handrails, etc.
8. Work related, but specified elsewhere:
  - a) Wood doors and hardware
  - b) Form work for concrete
  - c) Insulation
  - d) Roofing
  - e) Aluminum soffits, trim, gutters, etc.
  - f) Windows

**6.1 TEMPORARY & ROUGH-IN WORK**

**A. MATERIALS:**

1. Rough lumber shall be grade #2 or better, dressed four sides, of spruce, pine, douglas fir, or equal, in shapes and sizes as required.
2. Structural lumber shall be grade #2 or better kiln dried, 1,000 psi bending, unless noted elsewhere (spruce/pine/fir).
3. Plywood shall be CDX Grade, with exterior glue - such as 1/2" thick shall be 4 ply. Roof sheathing shall be 5/8" thick square edge plywood or 5/8" OSB board (Oriented Strand Board) with square edge. Exterior wall sheathing to be either 1/2" CDX plywood or 7/16" OSB board (oriented strand board) with square edge. Attic walkways to be 3/4" CDX grade - 6 ply. Provide and install galvanized plywood clips on all roof sheathing even if not required by code when framing members are 24" o.c.

4. Plywood for flooring which is 1 hour fire rated assembly shall be 1/2" CDX sub-floor, and 5/8" T & G BC or underlayment grade finish floor. Sheets shall be laid in ashlar pattern with joints staggered between layers. Commercial rosin paper shall be installed between layers - .010 inches thick (UL #L501 when used with 5/8" thick drywall ceiling and conventional framing).
  5. Treated wood for all plates and members against masonry, or in contact with, on or below earth, or subject to moisture shall be 1,200 psi construction grade treated as manufactured by Continental Wood Preservers, Inc., or equal.
  6. Adhesive for wood floor shall be water resistant and weatherproof, non-toxic, non-flammable and non-combustible, equal to "PL Premium Adhesive".
  7. Nails for rough framing shall be standard #8 and #16 penny coated, installed per code requirements for particular application, as well as recommended by the lumber manufacturer and American Plywood Association. Screws for interior wood sub-flooring shall be tempered phillips head, self-tapping deck screws - blued finish. Exterior to be stainless steel or epoxy coated finish. All metal supports/fasteners, including trusses and fasteners that come in contact with the treated wood shall be corrosion resistant such as stainless steel, epoxy coated steel and as approved by the treated wood manufacturer.
  8. See Thermal & Moisture Division for exterior wall insulation.
  9. Provide all metal joist hangers, brackets, straps, etc., for all conventional framing systems. Shall be 16 gauge steel as manufactured by Simpson, Kant-Sag or approved equal. Finish shall be as approved by the manufacturer for wood intended.
  10. Rosin Paper – Red rosin paper, 36" wide, 10 to 12.5 mills thick, as manufactured by W.R. Meadows, Sealtight, Inc., Elgin, ILL, 1-847-683-4500.
  11. Exterior Anchors – Bolts for anchoring treated framing to posts shall be stainless steel 1/2" diameter minimum thru bolts and nuts with washers both sides – minimum of two bolts per board width per post. Decking, railings, pickets and all other members shall be anchored with approved hot dipped galvanized deck screws – minimum of (2) screws per board width per joist. Screws shall penetrate into substrate minimum of 1" to 1-1/4" depth. Pre-drill members as required, to eliminate splitting of wood.
- B. INSTALLATION:
1. Install all temporary guardrails, walks, forms, bracing, shoring, etc., as required for the work or safety.
  2. Install any necessary temporary enclosures for door openings, barricades, etc., to close off work for security or moisture/temperature protection.
  3. See Concrete Division #3 for formwork.
  4. Framing shall be as size shown on drawings. Provide not less than 3" bearing on masonry or 2" on wood and metal.
  5. Set wood studs 16" on center, unless specified otherwise.
  6. Provide cut or ripped members for fascia framing, aluminum back-up, etc., as required for proper dimensioning.
  7. Unless otherwise noted, install all nailers or plates on beams or masonry walls per Michigan Building Code and secure with 1/2" diameter bolts, spaced 4'-0" on center with (2) anchors minimum per piece and not closer than 4" or greater than 12" from each end. Provide and install nuts/washers/plates of proper size per code.
  8. Provide all necessary framing around ductwork, registers, vents, etc. Included are nailers and blocking for drywall, cabinets, grab bars, handrails, toilet partitions, window drapes (2x12 each side of window), etc.
  9. Install all work with nails, spikes, screws, joist hangers and similar items of approved sizes and types. Exterior framing anchors to be galvanized.
  10. Install conventional framing (16" o.c.) and wood trusses (24" on center), plywood sheathing, etc. per code requirements. Also install plywood roof sheathing clips on edges between each truss. Allow expansion gaps between sheets as recommended by manufacturer. Complete related conventional framing, soffit/fascia, framing, etc.
  11. Plywood roof sheathing to be 5/8" o.s.b w/ galv. "H" clips for framing @ 24" o.c.
  12. Provide and install all attic diagonal bracing, truss stringers, conventional roof and floor framing, bridging, etc., as required for code, as noted on drawings as required by code and recommended per manufacturer of product or component.

13. Frame in and provide rough openings in gable end walls, any louver openings and install miscellaneous work as provided by other trades.
14. Plywood sub-flooring shall be installed with glue and screws in staggered/ashlar pattern and spacing as recommended by the APA. Install rosin paper, followed by plywood finish floor - screwed only as recommended by APA.
15. Layout special or rip special widths of plywood to insure sheathing is continuous (no joints) over all bearing walls or beams of floors or structural members.
16. Lengths of lumber for joists, railings, caps, etc., shall be a minimum of 2 spans – preferably 3. Railing, cap, joist members shall not all butt joint on same supports. Ends of adjacent members shall be staggered on alternating supporting members.
17. As provided by the Michigan Building Code, Section 1604 and others, provide and install a complete load path capable of transferring loads from their point of origin to the load resisting elements. Each roof truss/rafter shall be strap anchored properly to the wall plates with plates anchored to wall with wall properly anchored to the foundation. All straps, anchors, bolts, etc. to be corrosive resistant for the environment/location installed and for material compatibility.

## **6.2 MILLWORK**

### **A. MATERIALS:**

1. Unless otherwise shown on drawings, wood trim, casework, plywood, etc., designated to receive paint shall be clear stock or may have tight knots or other similar characteristics not visible after finishing. "B" and better, clear white pine, or equal.
2. Counter tops, partitions, doors, windowsills, faces, backsplash, etc., shall be 3/4" interior grade plywood. "B"/"D", or better, or 3/4" interior grade high density particle board, covered with 1/16" thick plastic laminate (suede finish), selected from manufacturer's standard colors, by Formica, Consoldweld, Wilson Art, or equal.
3. All toilet counter tops shall have 4" backsplash and side splash where counter meets walls, unless noted otherwise.
4. All countertops with base and wall mounted cabinets shall have entire exposed surface of back wall covered with 3/4" plywood and plastic laminate in lieu of typical 4" high backsplash. Any sidewall shall also be covered with plywood cut at 45° from bottom of wall cabinet down towards face of base cabinet. Ends of plywood shall be covered with alum 'J' mold bent to match angles of plywood.
5. Window sills shall have plastic laminate on finished faces, top and exposed ends.
6. Provide all specialty hardware such as chrome leg supports, hinges, latches, bolts, handles, angles, etc. Provide in quantities to eliminate warping, sagging or any failure and as recommended by the manufacturer.

### **B. INSTALLATION:**

1. All millwork shall be shop built insofar as possible, delivered to building and installed.
2. Sinks are provided by Plumbing Contractor - coordinate openings.
3. All custom built shelving shall be 3/4" plywood, A/A fir or better, with 3/4" birch edging on front edge.
4. Seal/caulk all counter backsplashes against wall surface with mildew resistant silicone sealant. Shall be a small uniform continuous bead, without ripples, lumps, or irregularities.
5. Install all specialty hardware as required to complete the installation for a first class job and as shown on the drawings. Install in accordance with manufacturer's recommendations.
6. Large countertop surfaces, such as board tables shall be laminated on underside with backing sheet to prevent warping, on full 1-1/2" thick plywood (2 layers of 3/4" with staggered joints) and ribbed with metal angles.

## **6.3 FINISH WORK**

### **A. MATERIALS:**

1. Trim - shall be size as noted on drawings of "clear" pine or poplar minimum or as noted on drawings.

2. Specialty wood trim shall be sizes/shapes as noted on drawings of red oak, milled and sanded 4 sides, suitable for clear varnish finish.
  3. Window and door casing/trim shall match exist. where req'd - clear white pine. Casing joints shall match exist. Adjacent openings.
- B. INSTALLATION:
1. Finish work shall be installed with close miters, coped at angles, full lengths where possible and secured with finishing nails, screws and glue. Set all fasteners for putty.
  2. Install all specialty items (windows, doors, etc.) and properly trim around with wood for a neat, first class installation.
  3. Where irregularities or gaps exist between trim and adjoining materials, provide and install matching trim and/or caulk, but only where allowed by the Architect. Every effort shall be made to scribe and fit snug all trim for a built-in appearance.

**END OF SECTION**

**DIVISION #7**

**THERMAL & MOISTURE PROTECTION**

**7.0 GENERAL**

**A. SCOPE OF WORK:**

1. The work under this Division shall include all labor, tools and materials required to furnish and install all materials herein specified or as indicated on drawings. Instructions to Bidders and Division #1 become a part of this division.
2. Remove all debris caused by operations under this Division, including demolition materials. Remove and clean all tar drippings, excess sealant, etc., from adjacent surfaces.
3. "R" Values - Where a thickness and "R" Value is specified, the "R" Value shall govern if there is a discrepancy.
4. Contractor shall submit color samples of all materials requiring selection.
5. Contractor shall submit shop drawings of all prefabricated items, roofing layouts with seam direction and size of sheets, spec data information, material safety data sheets, samples, etc. Refer to Division #1 for detailed pre-construction submittals.

**7.1 SEALANTS**

**A. MATERIALS:**

1. The following types shall be used in locations noted. Color of all shall be as selected by the Architect:
  - a) General Exterior - One part polyurethane sealant equal to Vulkem 116, or Tremco Dymonic.
  - b) General interior - Acrylic latex paintable sealant caulking equal to Tremco #834.
  - c) Fire Stopping - One part silicone sealant equal to Dow Corning 3-6548 RTV foam, flame spread of 20 per ASTM E-84-76A or Tremco "Fyre Shield".
  - d) Fixtures/Counters - One part mildew resistant silicone equal to Dow Corning #786.
  - e) Compression Joints - one part, butyl #440 Tape, 1/16" or 1/8" by 3/8" or 1/2" wide in Grey or Black color as manufactured by Tremco.
  - f) Asphalt Compatible – Sealtight pointing mastic, available in 29 oz. cartridges as manufactured by W.R. Meadows.
2. Primer - A quick drying clear primer as recommended by manufacturer shall be used where required.
3. Filler Material - Polyurethane foam rod stock, non-gassing, open-cell, equal to Tundra Foam, as manufactured by Industrial Thermo Polymers Limited, 2316 Delaware Avenue, Suite 216, Buffalo, NY 14216 (800-387-3847) and as distributed by Allstate Caulking Supply, Livonia, MI (734-266-1831). Size shall be such that when compacted, it equals 2/3 of its original width, or as recommended by the sealant manufacturer. Tundra foam rod stock is black (ebony) color, compatible with hot pour and cold applied sealants.

**B. INSTALLATION:**

1. All surfaces must be clean and dry, free of dust, loose mortar and other foreign matter. Wire brush joints in concrete and masonry and airblow or vacuum clean any protective coating on building material that will be sound and a brush coat of primer applied to such porous surfaces and allowed to dry before sealant is applied.
2. Joints deeper than 1/2" shall be built up to a depth of 3/8" below adjacent surfaces with approved compacted filler material prior to applying sealant.
3. Prime all surfaces where required and as recommended by the sealant manufacturer with type as they recommended.
4. Sealant shall be installed in strict conformance with the manufacturer's recommendations. Compounds shall generally be applied by means of a handgun. Use special nozzles as required for hard to apply areas. Exercise extreme care to prevent smearing on adjacent surfaces. A full head of sealant shall be applied into joint under sufficient pressure to fill all voids and joints solidly, drawing nozzle across sealant to leave a slightly concave surface.
5. Neatly tool joints to slightly concave surface, using tooling agent recommended by sealant manufacturer. Repair any air pockets exposed by tooling. Tool so as to compress material and improve adhesion to surfaces joined. Sealant bead shall be of width/depth and cross section as recommended by manufacturer.
6. Sealed joints shall not be touched, washed, or otherwise disturbed for 48 hours, to allow sealant to cure.



7. Final appearance of joint shall be without sags, ripples, globs and waviness. It shall be a straight, uniform sized, continuous flow of material. Work in and blend where one stroke flow ends and other begins.
8. Joints shall be caulked before painting adjacent work. Do not paint over any sealant unless allowed by manufacturer.
9. When concrete walks abutt vertical walls and aprons, the expansion joint material is to be held down ½" and sealed flush with polyurethane sealant to not pond water.
10. Caulk all joints as called for on the drawings, or specified herein as required to complete the work including, but not limited to, caulking of the following:
  - a) Exterior heads and jambs of door frames.
  - b) At intersections of aluminum work with other materials, etc.
  - c) Under exterior door/window thresholds – full bed.
  - d) Window frames (interior and exterior).
  - e) Counter backsplashes, plumbing fixtures, and miscellaneous trim - all against abutting walls.
  - f) Refer to drawings for other locations.
  - g) Joints of exterior slabs/walks against buildings and in structural slabs/aprons/porches.
  - h) In between lap joints of sills, flashing drips, 'Z' flashing and similar items.

C. **GUARANTEE:**

1. General Sealants Warranty - Submit a written warranty signed by the sealant manufacturer and applicator. Both shall guarantee prompt repair of defective sealant work for the manufacturer's standard warranty period. Nothing in the above shall alter or waive any of the guarantees or legal remedies, which the Owner may have under law, but shall be an addition to them.

**7.2 INSULATION**

A. **MATERIALS:**

1. Insulation between studs shall be 3-1/2" or (R-13) Eco Touch pink fiberglass batt insulation, with Kraft vapor barrier as manufactured by Owens Corning Fiberglass, or equal by Celotex, or Johns Manville. Install Kraft face toward room side.
2. In lieu of Kraft face vapor barrier install Certainteed MemBrain Smart Vapor Retarder, as manufactured by Certainteed Corporation (800) 233-8990, over un-faced wall and ceiling insulation on interior (warm) side of room. See manufacturer's installation instructions for installation over wood framing (30-28-083) and steel framing (30-28-089). Water vapor permeance equal to  $\leq 1$  permeance (ASTM E 96, desiccant/dry cup method) and  $> 10$  permeances (ASTM E 96, water/wet cup method) must be met.
3. Foundation wall insulation below kitchen in crawl space to be R-19 draped sheet insulation – seal all seams.
4. Attic insulation shall be 9-1/2" (R-30) Eco Touch pink fiberglass batt insulation, with Kraft Vapor Barrier as manufactured by Owens Corning Fiberglass, Certainteed, Johns Mansville, or equal. Provide and install eave thermal baffles – Pease #ETB24, or equal to maintain positive airflow into attic.
5. Roof Insulation – Similar to attic insulation, depth as determined by exist. conditions. Include air baffles.
6. Pipe Insulation as required.

B. **INSTALLATION:**

1. Install all insulation as recommended by the manufacturer without misses.
2. Staple all batt insulation into stud and joist cavities, being careful not to squeeze the insulation. It shall be installed with its full thickness. Install tape or small pieces in joints around windows, doors, etc. To be installed with no misses - do not pressure fit around window and door jambs.
3. Install vapor barrier of batt insulation towards room side.
  - a) If MemBrain Smart Vapor Retarder is installed in lieu of kraft facing, install per manufacturer's specifications. All seams shall be kept to a minimum, but where required lap seams minimum 3" and seal with 2" wide cellophane tape (scotch 610). No horizontal seams allowed – sheets must be full height – floor to ceiling. All vertical seams shall occur over stud backup. Repair any tears or cuts with cellophane tape. Seal all penetrations (pipes, ducts, outlets, switches, etc.) with cellophane for positive seal. Fasteners (screws/staples) at 12-24" on center and 6-12" on center around door and window openings. Where an uninsulated interior wall abuts an insulated outside wall, wrap MemBrain around inside corner at least 4".

4. Note on drawings, location of all water pipes. Install all insulation over water pipes so that pipes are on room side. Tape or staple flanges of insulation together to form sheets over plumbing. Hold insulation away from all flues - minimum 6".
5. Install insulation behind all outlets, switches, etc., and wrap tightly to seal air out of outlet.
6. Seal all openings in top + bottom plate of all walls insulated and un-insulated with caulking to prevent air circulation around all pipes, wires, etc.
7. Crawl space f.g. insulation shall be R-19 draped sheet insulation. Top edge can be nailed to wood sill plate if additional wood nailer is installed to slush out the foundation wall.
8. Contractor to call for and receive Architect's inspection/approval of all insulation before covering up.

### **7.3 ALUMINUM TRIM**

#### **A. MATERIALS:**

1. Alloy shall be #3105 or #3303, meeting FHA-HUD minimum property standards 4900.1 and AAMA (Architectural Aluminum Manufacturers Association) specifications. 1402.3 shall be as manufactured by Alcoa, Anaconda, or approved equal.
2. Gauge - .032" for fascia and trim; .019" for soffit; .024" for siding
3. Finish shall be baked enamel, smooth finish - twenty year warranty, with ten years on color retention. Color as selected by Owner.
4. Fasteners shall be aluminum nails, spaced and concealed as per manufacturer's directions.
5. Accessories - Provide all matching moldings, trim corners, bent plates, closers, etc., as shown or required.
6. Caulking - see type specified elsewhere.

#### **B. INSTALLATION:**

1. Verify all existing conditions and dimensions of building before proceeding. Examine for any foreign material and unevenness, which would prevent the execution and quality of installation and watertightness expected.
2. Provide all shims, trim furring, blocking, etc., in order to accomplish a job true in alignment and securely anchored.
3. Temporarily remove any wires, conduits, and lights that may be in the way of aluminum installation. Re-install all items at completion.
4. Install all work as recommended by the manufacturer. Touch up any scraped material with matching paint. Replace dented material.
5. Soffits and trim work shall be installed as detailed, using pre-formed accessories, or job site bent for a first class installation. Bends shall be clean, straight and sharp - free of any waves and buckles. "Tin canning" effect shall be at a minimum. Proper back-up shall be installed. Joint spacing shall be the minimum dimension consistent with allowing thermal movement without buckling.
6. Install caulking as noted elsewhere, and/or as required for a weather resistant installation.
7. Fasteners shall be of size to penetrate into studs and installed to a point to allow metal to expand and contract (not driven home). No exposed fasteners are permitted. Allow sufficient end clearance to permit movement - no tight forced fits will be allowed. Number and spacing of nails shall be as recommended by the sheet metal industry and to keep material from rattling with a slight wind.
8. Install all metal level and plumb in true alignment and securely anchored. No short pieces less than 2' in length shall be used. Ends of pieces shall be staggered between rows. In general, seams shall overlap in direction of water flow. Install in strict conformance with manufacturer instructions.
9. Install all flat stock aluminum using concealed fasteners and concealed slotted holes to allow proper thermal movement without buckling. Face nailing aluminum will not be accepted.

#### **7.4 HANGING GUTTERS/DOWNSPOUTS**

A. MATERIAL:

1. Hanging gutters shall be 5", 'OG' or 'K' design, .032 inch thickness, seamless aluminum, with baked enamel finish. Color as selected by Owner. Provide pre-formed corners, ends, etc.
2. Downspouts shall be 3" x 4" corrugated rectangular fluted, .032 inch thickness, aluminum, with baked enamel finish. Color as selected by Owner. Provide end extensions and off-sets as required. Connect downspouts into PVC storm sewer risers.

B. INSTALLATION:

1. Provide and install seamless gutters with drainage slope to downspouts anchoring to the fascia. Shall be spaced as recommended by manufacturer. Seal all gutter end caps and downspouts with sealer and rivets. Downspouts shall be anchored with concealed anchors to walls.
2. Gutter hangers to be concealed type combination Alcoa OG101 in heaviest gauge, anchored thru fascia with non-corrosive screws. Maximum spacing to be 2'-0" on center.
3. Install gutter extenders/diverters at all inside corners at valleys.
4. Install gutters with as long as sections as possible. Sections shorter than 4' shall not be used. Slope gutters to positive drain towards downspout.
5. Touch up any scraped material with matching paint. Replace dented material.

#### **7.5 FIBERGLASS, LAMINATED ROOF SHINGLES**

A. MATERIALS:

1. Felt - To be 15# asphalt saturated felt un-perforated, as manufactured by Manville or equal.
2. Flue & Vent Flashings to be neoprene boot type, as furnished and worked into roof by Roofer.
3. Roof Shingles - Shall be heavy laminated "Duration Premium" fiberglass shingles with shadow line, as manufactured by Owens Corning, Class "A" fire rating and 130 m.p.h. wind rating, 10 year Algae resistance warranty, limited lifetime shingle warranty. Color as selected by Owner. Provide matching starter row material at all eaves. Provide approved equal by Certainteed – "Landmark" TL or GAF - "Timberline Ultra". Equivalent shingle manufacturer to match all warranties and wind ratings listed above. Include all accessories as required by shingle manufacturer for manufacturer's lifetime warranty.
4. Drip Edges - Shall be "T" - 2"x 3" baked enamel over aluminum. Color as selected by Owner.
5. Frost Membrane - Shall be 36" wide, 40 mil, continuous strip of "Ice & Water Shield", as manufactured by W.R. Grace & Company. Install frost membrane along gutter at all eaves, hips and ridges, as recommended by the manufacturer and height to meet code 24" inside face of wall line.
6. Valley Flashing - Aluminum roll stock, .024" thickness x 21-1/2" width x 50' length, with baked enamel finish. Color as selected by Owner - as distributed by Monroe Aluminum. Break form valleys to provide an up-side-down "V" in middle of flow line to prevent water from crossing valley.
7. Step Flashing - Shall have vertical leg of 6" minimum and horizontal leg of 4". Depth shall be 8". Shall be of same material as valley flashing.
8. Nails - Shall be hot dipped galvanized and long enough to penetrate the roof sheathing and as recommended by the manufacturer (staples without heads are not allowed).
9. Ridge Vents - Shall be nailable type covered with shingles, snow and rain proof, as manufacturer by O.C., "Vent sure" or Air Vent, "Shingle Vent II" or approved equal, 4' sections, color to be selected. Bottom flange to have upward air dam. Ventilation to be 18 square inches per lineal foot.
10. Roof Vents – O.C. Vent Sure In-Flow or approved equal.

B. INSTALLATION:

1. #15 Felt - Vapor barrier over sheathing. Install horizontally with 6" lap between rows - top row lapped over lower row in shingle fashion.
  2. Installation of shingles and roofing systems shall be in accordance with manufacturer's specifications. Install frost membrane directly to plywood - remove 1st row of felt if necessary and lap frost membrane under next row of felt for positive drainage. Install "T" drip and top flash with strip of frost membrane.
  3. Install starter roll roofing so edge is 1/2" overhang of metal drip. The next row of shingles is to be installed so ends do not occur over joints of starter strips (must lap joints of shingle ends a minimum of 6"). Remaining rows of shingles to be installed similar.
  4. Nails to be hot dipped galvanized and length to penetrate sheathing (no staples). Nail shingles with a minimum of 4 per shingle. No exposed nails. Lap shingles as recommended by manufacturer.
  5. Install all aluminum drip edges on eaves, etc., where required on rakes/gables lap top piece over bottom to shed water. Also install all aluminum step flashing, blind flashing behind siding at roof, etc. End lap all drips minimum of 3".
  6. Install boot flashing around all vents, flues, etc. - typical would be furnaces, exhaust, vents, etc. Coordinate all locations before cutting through roof with Architect.
  7. At ridges and hips, install special matching cap shingles that overlap preceding shingle. Blind nail each side of ridge. Lap shall shed water on hips. Ridge cap shall be installed to shed water away from prevailing winds. Note: Install venting ridge cap followed by shingles.
  8. Provide owner with (1) square of shingles for future replacement.
  9. Install aluminum valley over 36" wide frost membrane.
- C. MANUFACTURER'S GUARANTEE:
1. Provide to the Owner the manufacturer's written guarantee on shingle materials.

**END OF SECTION**

**DIVISION #8**

**DOORS, WINDOWS & GLASS**

**8.0 GENERAL**

**A. SCOPE:**

1. This Division includes providing and installing all materials as herein specified.
2. Submit six (6) copies of shop drawings to the Architect for review of all work before fabrication or installation.
3. All pre-manufactured components such as doors/frames/hardware shall be factory assembled as much as practical. Final field assembly and installation shall be by a factory authorized installer. Should the Contractor elect to install components with other than factory authorized installers, he shall submit a letter at completion from the pre-manufactured component supplier that they have inspected the completed installation and certify that the final assembly has been installed and adjusted within the requirements acceptable of the component manufacturer.
4. If exterior doors/frames, or hardware are not installed the same day as removal, the Contractor shall be responsible for the security of the building by constructing temporary plywood barriers as secure as doors/frames, or hardware removed.

**8.1 DOORS & FRAMES**

**A. MATERIALS:**

1. FIBERGLASS DOOR (Leslie House) – Door shall be Classic-Craft Oak Fiberglass Entry Door System, Model CC92-RG, as manufactured by Therma-Tru Corp. See drawings for sizes and swings. Include all trim, extension jambs, etc. for proper installation.
2. FIBERGLASS DOOR (Caretaker House) - Doors shall be Smooth-Star Fiberglass Entry Door System, Model S220, as manufactured by Therma-Tru Corp. See drawings for sizes. Include all trim, extension jambs, etc. for proper installation.
3. STORM DOORS – Doors shall be Premier Classic Elegance EasyVent with Retractable Screen Away, Model 146MV, as manufactured by Larson Manufacturing Company. Color and finishes per owner. See drawings for sizes. Lever handle locking hardware and hold open closers as included w/ door package.

**B. INSTALLATION:**

1. Installation of all doors shall be as per manufacturer's instructions. Include all shims, blocking, flashings, sealants, fasteners, etc. as required for a proper and weather tight installation.
2. Set thresholds in a full bed of sealant. Install flashing below door as required or indicated on the drawings.
3. Upon completion all glass shall be cleaned of all stickers, marks, smears, etc.
4. All exterior frames in wood studs shall be installed in existing rough openings. Modify / prepare openings as required. Foam fill voids at head and jambs solid.
5. All doors and frames shall be field painted / stained by others - see Division #9. Caulk entire perimeter - see Sealant Division.

**8.2 HARDWARE**

**A. GENERAL**

1. Requirements of Regulatory Agencies:
  - a) Furnish finish hardware to comply with the requirements of laws, codes, ordinances, and regulations of the governmental authorities having jurisdiction where such requirements exceed the requirements of the Specifications.
  - b) Furnish finish hardware to comply with the requirements of the regulations for public building accommodations for physically handicapped persons of the governmental authority having jurisdiction and to comply with Americans with Disabilities Act.
2. Hardware Supplier:
  - a) Shall be an established firm dealing in contract builders hardware. He must have an adequate inventory qualified personnel on staff and be located within 50 miles of the project. Only domestic manufacturers are acceptable, the distributor must be a factory authorized dealer for all materials required. Supplier shall be or have in employment an Architectural Hardware Consultant. (AHC)
3. Manufacturer:
  - a) Obtain each type of hardware (latch and locksets, hinges, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.

4. Hardware Schedule:
  - a) Submit minimum of six (6) Hardware Schedules to allow the Architect to retain two copies for his use, plus the number of copies required by the Contractor for his distribution and use.
  - b) Shop drawings to include a preface sheet listing category, only and manufacturer's names of items being furnished along with the following: Hardware location, opening description, product data, key schedule, special wiring for door locks, drawing elevations, miscellaneous detail drawings, warranties of individual manufacturer's, etc.

B. MATERIALS

1. General:

- a) Furnish each category with the products of only one manufacturer unless specified otherwise; this requirement is mandatory whether various manufacturers are listed or not.
- b) Provide the products of manufacturer designated or if more than one manufacturer is listed, the comparable product of one of the other manufacturers listed. Where only one manufacturer or product is listed, "no substitution" is implied.

2. Locksets and Latchsets:

- a) All entry doors to receive Keypad Deadbolt with Camelot trim, paired with a locking Accent Lever door handle, as manufactured by Schlage. (Match owners existing keypad entry system).
- b) Deadbolt and Lever Handle to be keyed alike. Different keying for Leslie House and Caretakers House. Leslie House key to match existing.

3. Bumpers:

- a) Glynn-Johnson W60X.
- b) B.H.M.A. L02101. Wrought, forged, or cast, approximately 2-1/2 inch diameter, convex or concave rubber center, concealed fasteners.

4. Modular Ramp Threshold Assemblies (A.D.A. Compliant):

- a) Aluminum ramp assembly shall be Model R1.25FMRK, as manufactured by Pemko Manufacturing Co., or Model R125SIA, as manufactured by National Guard Products, Inc.
- b) Ramps to have closed end mitered returns, and non-slip finish.
- c) Install per manufacturers installation instructions. Seal as required.

5. Finishes: By Owner

C. INSTALLATION:

1. General:

- a) Install hardware according to manufacturer's installations and to manufacturer's template dimensions. Attach all items of finish hardware to doors, frames, walls, etc. with fasteners furnished and required by the manufacture of the item.
- b) Refer to previous Article for cylinders and keying regarding conversion of construction cores to final cores.

8.3 **EXTERIOR PRE-MANUFACTURED WINDOWS**

A. MATERIALS:

1. Scope - Provide and install aluminum clad wood double hung or sliding replacement windows as shown on drawings. Include all necessary trim, hardware, etc. Windows shall be Andersen E-Series Windows, Talon RetroFit Series as manufactured by Andersen Corp., sold and distributed by C.O.E. Dealers, sales representative James Reidy (734) 341-5041, or approved substitute. Exterior metal shall be as selected by Owner from manufacturers standard colors. Interior to be wood finished (paint/stain) to match existing conditions. Contractor to verify in field.
2. Windows shall have two glazing panels, with insulation air space. Glass to be Low-E4 with Heatlock. Provide 1" contoured Finelight between glass grills. Grills to match window finish on both faces. See drawings for windows requiring safety/tempered glass.
3. Insect Screen - Provide full size stainless steel TruScene Insect Screen in aluminum frames painted to match window frame, for each operable window.
4. Windows to be installed and anchored in existing openings as recommended by manufacturer. Entire perimeter of windows shall be flashed / caulked as required. Caulking and flashing types as specified elsewhere.

5. Provide and install at factory a standard aluminum joining mullion cover for windows in combination.
6. Trim/casing to be installed by carpenter. Interior stops to be removed and reinstalled as required for window removal and installation. - see Division #6.

**END OF SECTION**

## **DIVISION 9**

### **FINISHES**

#### **9.0 GENERAL**

##### **A. SCOPE:**

1. This Division includes providing and installing all materials as herein specified, or as shown on the drawings, or required for a complete installation.
2. Contractor shall submit color samples of all materials requiring selection and review installation with project Architect/Engineer/Owner prior to beginning work and review/resolve all details that may be affected by job conditions and other trades, including submitting any layouts, recommended changes, shop drawings, samples, seam/joint spacings, or any other information which will describe the work to the fullest extent possible.
3. Clean all surfaces in an approved manner recommended by the manufacturer, ready for the Owner's occupancy.
4. Finish Contractor shall notify Architect of any defects in sub-base. Starting work shall imply acceptance.
5. Only experienced workmen shall install work. All finish materials shall be installed under conditions of temperature and humidity closely approximating those, which will exist when the building is occupied. Same conditions must exist until materials are properly cured.
6. Submit spec data sheets of all materials stating that they are free of all hazardous/asbestos materials and meet the Federal American Disability Act.
7. All finish materials and/or their adhesives for securing to substrates, shall meet the ADA (American Disability Act) as passed July 1991 and effective January 1992 in regards to elimination of toxic/allergic chemical contamination via direct vapors/fumes or when in contact with normal spilled materials and cleaning agents.

#### **9.1 GENERAL PAINTING**

##### **A. PAINT MATERIALS:**

1. All paint shall be delivered to site in manufacturer's sealed containers. Products may be used as manufactured by Sherwin Williams, and Rust-O-Leum Corporation.
2. Materials shall be the "top of the line" quality of each manufacturer used. Materials shall meet all State requirements for flame spread, smoke density, and fuel contribution. A notarized affidavit certifying this rating must be given to the Architect.

##### **B. INSTALLATION:**

###### **1. Preparation of Surfaces:**

- a) General - Before painting, remove hardware, accessories, plates, lighting fixtures and similar items, or provide ample protection of such items. Upon completion of each space, replace above items. Use only skilled mechanics for removing and connection of above items.
- b) All hairline cracks, splits, gouges, scratches and alligatored surfaces shall be spackled with Durabond 90, following manufacturer's recommendations. Prime these areas with a heavy-duty primer similar to Sherwin Williams Prep Rite High Build Latex Primer, B28W601 (1-4 Mills Dry).

###### **2. Application:**

- a) All paint shall be installed in strict conformance with manufacturer's specifications. Surface to be painted shall be clean, dry, smooth and adequately protected from weather. Temperature shall be above 50 degrees F.
- b) Finished work shall be uniform, of approved color, smooth and free from runs, sags, defective brushing, clogging, or excessive flooding.
- c) Small cracks, holes and other imperfections in masonry surfaces, which show up after primer-sealer has been applied to the surface shall be filled with an approved spackling compound before application of second coat.
- d) Paint or finish all work specified herein and all work customarily painted for appearance or protection, as well as other specified items of work scheduled to be painted in room finish schedule.
- e) Contractor shall acquaint himself with all divisions of the specifications, as he shall paint or finish to completion all materials requiring painting or finishing which are left un-finished. Certain prime painting is called for in the work of other trades. Any priming, shop or field coats specified in other divisions are in addition to the number of coats specified hereinafter.
- f) The types of paint and minimum number of coats required in the various listed surfaces shall be as follows: Provide and install as many additional coats as required to provide uniform color, sheen and finish, even though the manufacturer's minimum dry fill thickness has been met.
- g) Leave with owner at job completion all cans of paint for future touch up.



- h) All patch painting shall be done in neat logical configurations, stopping at logical break points, such as inside or outside corners, at change of materials, or as directed by the Owner/Architect.

C. SCOPE OF WORK:

1. This Contractor shall paint all exterior and interior building materials as required for a finished installation or as noted on drawings.
2. Items included, but not limited to, shall be:
  - a) All exterior steel clad wood entry doors and frames - both sides of frame and door
  - b) Misc. ext. + int. trim.
  - c) Exterior steel railings, handrails, etc. All finish work not factory or shop painted.
  - d) All interior walls patch and paint.
  - e) All windows and trim to match exist.

D. MATERIALS AND COATINGS – **SHERWIN WILLIAMS**

Interior Drywall - Paint

- 1 Coat - SW Prep Rite 200 Latex Primer B28W200 (1.2 Mills Dry)
- 2 Coats – SW Pro Mar 200 Alkyd match Gloss, B34 Series (1.7 Mills Dry/Coat)

Interior Wood - Clear or Paint

- 1 Coat - Stain (Oil base semi-transparent)
- 2 Coats - Satin polyurethane

or

- 1 Coat – SW Prep Rite Oil Primer B49W22 (2 Mills Dry)
- 2 Coats – SW Pro Mar 200 Alkyd Semi Gloss, B34 Series (1.7 Mills Dry/Coat)

Exterior Ferrous Metal - Paint

- 1 Coat - SW Kem Kromik Universal Metal Alkyd Primer B50Z Series (3Mills Dry)
- 2 Coats – SW Industrial Alkyd Enamel Gloss B54Z Series (2 Mills Dry/Coat)

Interior Ferrous Metal – Paint

- 1 Coat - SW Kem Kromak Universal Alkyd Metal Primer B50Z Series (3Mills Dry)
- 2 Coats – SW Pro Mar 200 Alkyd Semi Gloss, (1.7 Mills Dry/Coat)

Interior Galvanized Metal – Paint

- 1 Coat – SW Galvite HS (3-4.5 Mills Dry/Coat)
- 2 Coats – SW Pro Mar 200 Alkyd Semi Gloss (1.7 Mills Dry/Coat)

Exterior Galvanized Metal – Paint

- 1 Coat – SW Galvite HS (3-4.5 Mills Dry/Coat)
- 2 Coats – SW Industrial Enamel B 54 Series Gloss (2-4 Mills Dry/Coat)

Exterior Wood – Stain

- 2 Coats – Woodscapes Acrylic Solid Color (1.3-2.6 Mills/Dry)

**9.2 VINYL FLOORING**

A. MATERIALS:

1. Vinyl tile shall be first quality, commercial grade material, 1/8" thick and composed of a thoroughly blended composition of thermoplastic binder of the vinyl type, pigments and fillers. Tile shall be 12" square. Color to be selected from the manufacturer's standard group. To be "Standard Excelon", as manufactured by Armstrong Cork Co., or equal by Kentile, Azrock, Congoleum, or approved equal. Each room to contain only (1) color tile (no fancy design or borders). Approximately (3) colors total throughout project will be selected of equal amounts.
2. Adhesives shall be as manufactured by, or as recommended by the Tile Manufacturer.
3. Base - See elsewhere in this Division.
4. Floor Prep - See Division #3.

**B. INSTALLATION:**

1. Sub-floors shall be prepared and all resilient tile and wall base shall be laid in strict accordance with the standard printed specifications of the manufacturer of the tile used. Lay tiles so as to insure good contact with close, even joints and with finished surfaces in true planes.
2. Tile shall be laid from contents of at least two different containers and/or sorted, so that marbling and color will be uniform and not spotty. Lay all marbled tile with veining running in same direction. Obtain Owner/Architect approval prior to installation.
3. At door openings or junctures with other materials, or where thresholds of other materials are not specified, install reducer strip full width of juncture, #633, as manufactured by Mercer.
4. Remove adhesive from face of tile. Clean tile with materials and methods as recommended by tile manufacturer.
5. Leave with Owner ten (10) sq. ft. of tile, per 100 s.f. installed, for future replacement of each color.

**9.3 VINYL BASE**

**A. MATERIALS:**

1. Vinyl base in carpet floor and vinyl tile areas shall be as manufactured by Armstrong, VPI, Kentile, Azrock, or equal, 1-3/4" or 4" high. Approximately (2) colors total throughout project will be selected in equal amounts from the manufacturer's standard colors.
2. To be straight base for carpet and cove base for others.
3. Adhesive shall be as recommended by manufacturer.

**B. INSTALLATION:**

1. Nail or use special contact cement on all vinyl base returns of 4" or less.
2. Install base on all walls, etc., for a uniform appearance.
3. Cut base in height to fit as required for special areas/patched work.

**9.4 CERAMIC TILE**

**A. MATERIALS:**

1. Grout for floor shall conform to ANSI A108.10 - latex/portland cement, mixed with clean, fresh water to the consistency of thick cream. Grout for joints over 1/8" thick shall consist of one part cement to two parts well graded, clean, sharp sand by volume. Color of grout to be selected. (3) different colors throughout.
2. Ceramic tile shall be as manufactured by Summitville Tiles, Inc., or Florida Tile, or approved equal. All tile shall be graded in accordance with simplified practices recommendation B61-61, as approved by the Tile Industry and published by the U.S. Bureau of Standards.
3. Wall tile and C.T. shall be smooth, color blended ceramic (white) - "Essence Series" (Florida Tile) with straight joint of 1/8" maximum in 3" x 3" x 5/16" size, with 1" accent strip. Match existing pattern.
4. Wall and C.T trim shall include all as required. Surface bullnose shall be used at front edge of platform on straight walls to terminate tile on outside vertical wall corners, etc. All inside vertical and horizontal corners shall be square, butt joint - no cove required.
5. General Scope of Work:
  - a) Leslie House – Kit. Wall and C.T tile only 3"x 3" size - base to be wood/cement board.
  - b) Colors:
    - (1) All new tile - One color, white.

**B. INSTALLATION:**

1. Before starting installation, a thorough examination shall be made of work previously executed, which may influence completion of tile work. Report any work found incorrect to the Contractor and Architect. Do not proceed until satisfactory corrections have been completed.
2. Saw cut and grind exist. grout. Remove, leave adjacent.
3. Tile shall be laid level and/or plumb. Joints for the individual kind of type of tile shall be straight, uniform, and within such limits as are practicable throughout the work. Tile work shall be laid out on walls and floors, starting at center line, so that wherever possible, not less than one-half full tile shall occur.
4. See other divisions for substrate preparation. Carpentry for floor, drywall for walls.

5. Tile shall be installed as noted per Tile Council of America Specifications:
  - a) Kitchen:  
Walls / C.T. - 5/8" moisture resistant gypsum board (by others). Full flex Mortar, ceramic tile (W223-89) (TA 390.16 - full flex mortar) -or- 3/8" cement board, full flex mortar, ceramic tile (W223-89) (TA390.16 - full flex mortar).
6. Grout shall be forced into joints by screening or other suitable method and finished flush and true. All surplus grout shall be removed before it has set or hardened and the face of the tile left perfectly clean.
7. Clean and seal all tile at completion with an approved sealer - two coats.
8. Patch + repair adjacent exist. tile as req'd.

**END OF SECTION**

**DIVISION 11**

**EQUIPMENT**

**11.0 GENERAL – EQUIPMENT HEREIN**

**A. SCOPE:**

1. This Division includes providing and installing all equipment herein specified.
2. Submit (5) copies of shop drawings (picture cuts) to the Architect for approval of any contractor supplied equipment before installation.

**B. MATERIALS:**

1. Food Waste Disposer shall be InSinkErator Badger 5XP, continuous feed, with ¾ H.P. motor, galvanized steel grinding elements with two stainless steel 360° swivel lugs.
  - a. Wall switch control
  - b. single phase motor
  - c. ¾ H.P.
  - d. 120 volt
  - e. 60 Hz
  - f. 1,725 R.P.M.
  - g. 9.5 amp

**C. INSTALLATION:**

1. Install disposer in location as shown on drawings, per manufacturer's instructions, ready for use by Owner.

**END OF SECTION**

**DIVISION #15**

**MECHANICAL**

**15.0 GENERAL**

A. General Provisions

1. Work covered by this specification and design drawings shall include all labor, materials, equipment and services necessary for and reasonably incidental to complete the installation of the plumbing and heating and air conditioning systems. Note: Reference to Mechanical contractor covers all work for plumbing, Heating and Air Conditioning Contractors and their subcontractors/ All materials and workmanship shall meet applicable provisions of state and local codes and regulations required. The Contractor shall pay for all required permits and fees including final certificates of approval.
2. The drawings show, in general, where all pipes, ducts, and equipment are to be located. This Contractor shall check over all drawings and details carefully. Location of piping, duct work and equipment may not be changed without written approval from the Architect. The Contractor shall not scale the drawings. Location of plumbing fixtures, cabinets, equipment, etc., shall be verified with general trades and field conditions to confirm rough-in locations and work of other trades to avoid conflict.
3. The domestic water system shall include a tap off the existing city water service line, (located south of the new building), to the building, backflow preventer, water piping, valves, etc., required to complete the domestic water systems.
4. Natural gas shall be installed to the building including the tap at the existing gas service line, (located south of the new building), and the meter setting required to complete the gas service. Inside the building, the gas piping shall be installed with drops to the cremation machines, furnace and unit heaters.
5. Submit shop drawings for approval to the Architect for all equipment and materials. A minimum of six (6) copies or sets for each item is required. Contractor shall review all shop drawings and stamp drawings indicating his approval. All submittals shall have equipment mark numbers for identification of equipment.
6. Provide shop drawing submittals for the following items:  
  
Plumbing:  
Sink, Faucet, Pipe materials and Insulation
7. All plumbing work shall comply with current and applicable standards of the following:
  - a) OSHA Occupational, Safety & Health Act
  - b) NFPA National Fire Protection Association
  - c) ASME American Society Mechanical Engineers
  - d) Local and State Codes
8. The Contractor shall provide a written guarantee to the Architect that all work herein shall be free from defects in workmanship and materials, that apparatus will develop capacities and characteristics required on the drawings, and that if during a period of one year after the date of certificate of completion and acceptance of the project, any such defects appear, he shall remedy same without any cost to the Owner.
9. Each Contractor shall provide for his excavation and backfilling. Determine lines and levels and provide necessary shoring, water removal, excavation and excavation protection. Bell holes shall be dug to ensure pipes resting for its entire length upon bottom of trench. Where pipe is being installed in filled areas, fill must be firmly compacted and backfilled with crushed stone to proper laying level.
10. Sleeves shall be provided for all pipe passing through walls, footings and floors. Sleeves shall be cut from Schedule 40 steel pipe for above grade locations and from Schedule 40 galvanized steel or PVC pipe for below grade installations. Where pipes are insulated, the insulation shall pass through the sleeves. At fire rated walls and floors, the space between the insulation and the sleeve shall be packed with fire-stopping material.
11. Do not insulate over pipe hangers. Pipe insulation shall be installed to run through pipe hangers. Pipes set on trapeze type supports shall have insulation resting on support. Do not notch insulation. Provide 18 gauge galvanized sheet metal shields at all hangers and supports.

12. Where hangers, clamps, support channels, pipe sleeves, etc., come in contact with pipe which is of different material than pipe, the Contractor must isolate the pipe from the device with a layer of ½" thick fire-rated Armaflex (or equal) Insulation or an approved isolation material.
13. Prior to bidding, the Contractor shall visit the site and examine the area of work and compare it with the drawings and specifications, and be satisfied as to the condition of premises, such as obstructions, actual levels, and other necessary requirements for carrying out the work.
14. All fixtures, equipment, controls and devices shall be installed in accordance with the requirements of Americans with Disabilities Act (ADA), ANCI A117.1, State Building Code and local codes that may apply.

#### **15.1 PLUMBING WORK**

##### **A. General Provisions**

1. Sanitary waste, sanitary vent drainage piping 3" and larger shall be pitched at 1/8" per foot and piping less than 3" shall be pitched at ¼" per foot. Sanitary waste and sanitary vent piping shall be the following materials:
  - a) Service weight cast iron with Clamp-All or Husky no-hub fittings (above grade). No-hub fittings must be Clamp All Corp. Model 125, Huskey 4000 or Mission Heavyweight.
  - b) Schedule 40 PVC DWV with socket weld fittings. (below grade) Not permitted above floor line.
2. Hot and cold water piping above grade, inside building shall be Type "L" copper with wrought solder fittings and below grade piping shall be Type "K" copper. Install dielectric unions or fittings where pipes of dis-similar metal are connected. All supply piping where possible, shall be kept out of attic areas (below thermal insulation), exterior walls, and below concrete slabs.
3. The potable water system shall be thoroughly flushed and disinfected before being put into service as required by the water department, health department or authority having jurisdiction. After samples have been approved, obtain Certification of Acceptance from the health department and forward certificate to Owner.
4. Valves for plumbing system shall be ball valves equal to Milwaukee #BA-155 full port type with soldered ends.
5. Furnish and install tempering valves or mixing valves at kitchen sink. The mixing valve shall be Sparco Aquamiix or equal by Watts. The valve shall be Teflon coated to prevent mineral build up, be ANSI/ASSE 1070 certified and be anti-scaled tested and certified. The valve shall be provided with union connections and non-ferrous check valves. Range of control shall be 90 degrees to 120 degrees F. The Contractor shall install the valves in accordance with the manufacturer's recommendations.
6. Insulate all hot and cold water piping (new, and existing in crawl space) with one inch thick fiberglass, nominal 4-lb. Density with all service jacket (ASJ). Cold systems shall have vapor barrier, For fiberglass, fittings, valves, etc., may be covered with Zeston or equal pre-molded fittings. One-half inch thick FR Armaflex self-seal insulation may be used where piping is buried in walls. Slitting of insulation will not be permitted. Below floor buried water piping shall be insulated with one-half inch FR Armaflex insulation.
7. All sinks shall be furnished with heavy duty commercial grade supply stops, loose key type with chrome plated flexible risers.
8. Plumbing fixtures for developing standard of quality shall be commercial grade as manufactured by Elkay, or approved substitute by American Standard, Kohler, Moen or Crane. Fixtures shall include:
  - a) Kitchen Sink –  
Elkay Gourmet stainless steel 27"x22"x8' single bowl dual mount sink. 3 hole, 18 ga., satin finish. Include goose neck faucet w/ A.D.A. compliant paddle handles.

**END OF SECTION**

**DIVISION #16**

**ELECTRICAL**

1. **GENERAL**

- a) All electrical work shall be designed and installed in compliance with the latest edition of the National Electrical Code.
- b) The drawing in this project manual is diagrammatic to show the intent of work. The Electrical Contractor shall be responsible for the final design and shop drawing submittals.

2. **SCOPE OF WORK:**

- a) Work shall include, but not be limited to the following:
  - (1) Installing new interior switch, duplex convenience receptacle, cover plates, etc., for waste disposer as indicated on the plan.
  - (2) Sizing and installation of new wiring, conduit, junction boxes, circuiting and circuit breakers.
  - (3) Contractor shall obtain all necessary construction permits, perform any necessary testing, balancing, etc., to make the electrical systems operational for their intended use.
  - (4) Provide power and hook-up all equipment as provided by Owner (See Equipment Division)

3. **MATERIALS AND INSTALLATION:**

- a) Conduit - shall be minimum ½" diameter (unless noted otherwise) in the following types and locations. Install per NEC-art. 346.
  - (1) Electrical Metallic Tubing (Thin wall conduit) – May be exposed surface mounted or concealed above ceiling and in masonry walls. May be used except for installation in concrete slabs or underground.
  - (2) Non-Metallic conduit (P.V.C.) – Shall be minimum 2" diameter, may not be surface mounted. May be installed in concrete slabs and underground.
  - (3) Flexible Metal Conduit – May not exceed 6' in length. May only be used for fixed wiring connections from special purpose outlets and for final connection to all motors as approved by NEC.
  - (4) Rigid Conduit – May be substituted for E.M.T. May not be used for installation in concrete slabs or underground. Shall be used for main service/switch gear.
- b) Branch Circuit Conductors – Shall be XHHW, or THHN/THWN, 75 deg. C. insulation, standard weight in gauge as required by code – minimum 12 gauge. No. 10 or larger to be stranded copper and as required by code. Conductors shall be rated in accordance with NEC Article 310. Neutral wires shall be white. Colored wire shall be black, red or blue. No brown, orange, yellow or gray wire shall be used.
- c) Terminating & Splicing – Shall be using 3M Co. Scotchlock wire nuts for taps and connections for conductors #8 and smaller.
- d) Pull and junction boxes shall be code sized in accordance with NEC requirements.
- e) Provide all necessary piping supports, brackets, straps, fasteners as required per NEC.
- f) Outlet Boxes – shall be galvanized steel.
- g) In-Door Lighting Fixtures
  - (1) Fluorescent – shall be type as listed on drawings. Shall be surface mounted. All ballasts shall be "Low Ambient Temperature" ballasts capable of starting down to –20 degrees Fahrenheit. Provide lamps as required for operation.
  - (2) Incandescent – shall be type as used on drawings surface mounted in attic. Provide lamps as required for operation.

- 4. Location of all switches, outlets and fixtures are shown as approximate. This contractor shall verify the final locations with the Owner prior to installation.

**END OF SECTION**

**DIVISION #17**

**ALTERNATES**

**17.0 GENERAL**

A. SCOPE:

1. This Division includes the work that is to be deducted or added to the Base Proposal for various items, including all labor and materials herein described.
2. See other related Divisions for the scope of work, type of materials, etc., if not specified herein.
3. The order of the Alternates are not listed in priority. The number of Alternates accepted will be determined by the Owner that serves their best interest.
4. The Alternate work herein is bound by the same conditions and requirements in the main sections of these specifications as governs all other trade divisions. Included shall be Index, Advertisement for Bids, Instructions to Bidders, Bid Proposal Form, General and Special Conditions, etc.

**17.1 ALTERNATE A-1**

A. SCOPE:

1. State on the Bid Proposal Form the amount to be added to the Base Bid.
2. Work includes, but is not limited to the following:
  - a) The replacement of all second story windows and related work in the Leslie house.
  - b) Included shall be all specifications as listed in Division 8

**17.2 ALTERNATE A-2**

A. SCOPE:

1. State on the Bid Proposal Form the amount to be added to the Base Bid.
2. Work includes, but is not limited to the following:
  - a) Remove existing vinyl laminate flooring and base from hall and toilet room in the Leslie House.
  - b) Replace area with new V.C.T. and vinyl base.
  - c) Included shall be all specifications as listed in Division 9.
  - d)

**17.3 ALTERNATE A-3**

A. SCOPE:

1. State on the Bid Proposal Form the amount to be deducted to the Base Bid.
2. Work includes, but is not limited to the following:
  - a) Eliminate Heatlock Technology – all windows.
  - b) Substitute conventional window screens for TruScene window screens – all windows.

**END OF SECTION**



**DIVISION 18**

**DEMOLITION & PATCHING**

**18.0 GENERAL:**

**A. SCOPE:**

1. This Division includes providing and installing all materials, labor, equipment, etc., as herein specified, or as shown on the drawings.
2. All demolition workmanship shall be of first quality, performed by skilled workers with items carefully removed to not damage existing work that remains or to be built upon/modified by other trades. The Demolition Contractor or workers shall be knowledgeable of the systems and materials they are removing. Coordinate all demolition work with the Sub-Contractors that will be required to repair, extend, modify, alter, etc., the item or items involved. Where possible, the actual trade performing the re-construction shall perform the demolition.
3. Submit spec data sheets, manufacturer's brochures and actual color samples for verification of materials to be used (anchors, mortar, block, brick, etc.). Materials containing asbestos or other hazardous materials shall not be used.
4. Work included consists of, but is not limited to the following:
  - a) Remove existing windows, roof, stairs, counter tops, plumbing, railings, asphalt, floor finishes, walls, slabs, footings, canopies, doors/frames, etc., as detailed or required.
  - b) See related electrical and mechanical specifications for other items.
  - c) Where necessary or specified, saw cut, core drill, etc., certain areas to prevent un-necessary destruction of the existing work, which may otherwise require extra re-building to return to original or acceptable condition as existed before starting new work.
  - d) Interior and Exterior trim as required.
  - e) See Alternate Division

**B. SALVAGEABLE MATERIALS:**

1. Where noted in Special Conditions, or herein, or other related Divisions, including mechanical and electrical, carefully remove certain items and store on job site in mutually agreed upon areas for Owner to pick-up and remove.
2. Any salvageable items as requested to become the property of the Owner, and the Contractor feels the item will be destroyed in the removal process, or is not cost effective to carefully removed, shall be stated as such in the Bid Proposal. Also any item or items scheduled to be turned over to the Owner, which the Contractor feels has substantial salvageable value and wishes to retain, he may elect to submit a credit for Owner's consideration on the Bid Proposal.
3. Contractor shall verify and coordinate salvageable material selection with the Owner prior to removal from the job site.

**C. PATCHING:**

1. Where certain items are called for to be replaced, removed, repaired, altered, etc., and the work involves the removal/destruction of adjacent or related existing items, those damaged items shall be patched, repaired, replaced to their original or better condition as existed before the work is started.

A typical example would be regarding new window and door/frame replacement in same wall. Included as part of the work is any wall damage caused by the removal of window and door/frame and the installation of the new - including finishes.

2. Where not shown on drawings, all patching, painting, etc. shall be done with similar materials or an approved substitute to the surrounding areas or as specified in other related Divisions and as recommended by manufacturer. If the Contractor is in question, consult the Architect prior to removal or replacement. All materials shall be carefully removed to avoid damage to other work not scheduled for demolition or for turning over to the Owner.
3. All patching work shall be uniform in appearance, flush, same texture, etc. with the adjacent existing work. In certain instances, to achieve this, additional adjacent work may be necessary to remove and replace. Typical examples would be:

- a) Any patch painting shall be done in geometric configurations, stopping at logical break points, such as inside or outside corners, at change of materials, or as directed by Owner/Architect.
  - b) In lieu of saw cutting concrete slab in many areas, remove and replace larger areas or the entire slab (wall to wall) in order to install the necessary plumbing, wiring or new items specified.
  - c) Where existing plaster walls are cut from new ductwork, or electrical boxes are removed, etc., and the work will be hidden by a new suspended ceiling, patching may be done with matching plaster of 5/8" drywall properly anchored, taped and spackled.
  - d) Where existing walls are removed and/or finishes are removed, the substrate material shall be cleaned, ground down, filled, leveled smooth, etc. and made ready for new finishes and/or materials as specified. Flatness tolerance shall be Class 'A' (1/8" deviation in 10'). Leveling shall be done with materials as manufactured by Ardex, Sika, Thoro, or equal.
- D. DEBRIS:
- 1. All removed/demolished materials other than the salvageable items, shall be removed from the job site by the Contractor at his expense.
  - 2. See Special and General Conditions for debris removal, clean up, etc.
- E. ALTERNATES:
- 1. See sheet BF-1 for Alternate Bids.

**END OF SECTION**

# ASBESTOS REMEDIATION

## 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:
  - Leslie House*
  - 1. Exterior Window Caulk – 1<sup>st</sup> Floor West Side Along Stucco Wall – 20 l.f.
  - 2. Incidental removal of vermiculite that may be present in wall cavities.

### 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. 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.
- B. 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.
- C. 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.
- D. 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 - 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.
  - 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.

## **2.2 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: R Q 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.

### **2.3 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.

### **2.4 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.

### **2.5 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. 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.
- C. 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.

## **LEAD REMEDIATION**

### **RENOVATION, REPAIR AND PAINTING IN CHILD-OCCUPIED FACILITIES AND HOUSING**

#### **PART 1 - GENERAL**

##### **1.1 SUMMARY**

- A. This section specifies requirements when renovating, repairing or painting in target housing and child occupied facilities built before 1978. Activities impacting lead-based paint (LBP) that are subject to the requirements of this section include but are not limited to:
  1. Remodeling and repair/maintenance.
  2. Electrical work.
  3. Plumbing repairs or improvements.
  4. Painting.
  5. Carpentry.
  6. Window replacement.
  7. Demolition of painted walls or ceilings.
  8. Re-plastering.
  9. Any other activities which disturb painted surfaces.
- B. This section does not apply to lead abatement projects in housing and child occupied facilities. Lead abatement is work designed to permanently eliminate lead based paint hazards.
- C. Extent of LBP is as follows:
  - 1. All existing paint.**
- D. Prohibited Activities:
  1. Prohibited activities include open flame burning/torching, using a heat gun above 1,100 degrees Fahrenheit (°F) and sanding, grinding, planing, needle gunning or blasting without a shroud and HEPA vacuum attachment.

##### **1.2 DEFINITIONS**

- A. The term "Abatement" signifies any measure or set of measures designed to permanently eliminate lead-based paint hazards from the target housing or child-occupied facility as defined in 40 CFR part 745, subpart L. Abatement includes, but is not limited to:

1. The removal of lead-based paint and lead-contaminated dust, the permanent enclosure or encapsulation of lead-based paint, the replacement of lead-painted surfaces or fixtures, and the removal or covering of lead-contaminated soil.
  2. Preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures.
- B. The term "Action Level" means an airborne concentration of lead of 30 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA).
  - C. The term "Certified Inspector" means an individual who has been trained and is certified by the Environmental Protection Agency (EPA).
  - D. The term "Child-occupied Facility" means a building, or portion of a building, constructed prior to 1978, visited regularly by the same child, 6 years of age or under, on at least two different days within any week (Sunday through Saturday period), provided that each day's visit lasts at least 3 hours and the combined weekly visit lasts at least 6 hours, and the combined annual visits last at least 60 hours. Child-occupied facilities may include, but are not limited to, day-care centers, preschools and kindergarten classrooms.
  - E. The term "Cleaning Verification Card" means a card developed and distributed, or otherwise approved, by the EPA for the purpose of determining, through comparison of wet and dry disposable cleaning cloths with the card, whether post-renovation cleaning has been properly completed.
  - F. The term "Common Area" means a portion of a building that is generally accessible to all residents or users. Common areas include (but are not limited to) hallways, stairways, laundry rooms, recreation rooms, playgrounds, community centers and fenced areas whether interior or exterior spaces.
  - G. The term "Component" means a specific design or structural element or fixture distinguished by its form, function, and location. A component can be located inside or outside the dwelling. Examples include (but are not limited to) ceilings, wall, floors, shelves, crown molding, trim, fences, handrails window sills and soffits.
  - H. The term "Containment" means a process to protect workers and the environment by controlling exposures to the lead-contaminated dust and debris created during a renovation, repair or painting project.
  - I. The term "Critical Barrier" indicates the perimeter of the enclosure within which lead disruption/removal work takes place. Critical Barriers may include existing floor, wall, and ceiling structures, as well as constructed partitions, closures and seals.
  - J. The term "Encapsulant" means a substance that forms a barrier between lead-based paint and the environment using a liquid-applied coating (with or without reinforcement materials) or an adhesively bonded covering material.
  - K. The term "Enclosure" means the use of rigid, durable construction materials that are mechanically fastened to the substrate in order to act as a barrier between lead-based paint and the environment.
  - L. The term "Exposure Assessment" means a determination of employee exposure for a given task measured by air sampling. The Assessment must meet the criteria for objective data as outlined in the MIOSHA/OSHA Lead in Construction Standard (MIOSHA Part 603, R325.51992 and 29 C FR 1926.62).
  - M. The term "Hazardous Waste" refers to a listed waste or any solid or liquid waste with one or more of the following characteristics: toxic, corrosive, flammable, explosive, combustible, oxidizer, pyrophoric, unstable (reactive) or water - reactive. This definition includes lead paint that has been removed from the substrate and has failed the TCLP for any reason.
  - N. The term "Inspection" means a surface-by-surface investigation to determine the presence of lead-based paint and the provision of a report explaining the results of the investigation.
  - O. The term "Lead-Based Paint" (LBP) is identified as paint or other surface coatings that contain lead equal to or in excess of 1.0 milligrams per square centimeter or more than 0.5 percent by weight or lesser value as defined by EPA.
  - P. The term "Non-Hazardous Waste" refers to any solid or liquid waste not exhibiting characteristics of Hazardous Waste. This definition includes lead-based paint not removed from substrate and not failing TCLP for other characteristics. It also includes lead paint chips that do not fail the TCLP for any reason.

- Q. The term "OSHA PEL" stands for the Permissible Exposure Limit established by the Occupational Safety and Health Administration for lead exposure. The OSHA PEL refers to an airborne concentration of lead of 50 micrograms per cubic meter of air calculated as an 8-hour time-weighted average (TWA).
- R. The term "Renovation" refers to a modification of all or part of any existing structure that disturbs a painted surface, including (but not limited to) removal/modification of painted surfaces, components or structures, surface preparation activities and window replacement as defined in 40 CFR part 745, subpart E.
- S. The term "Renovator" means a person who either performs or directs workers who perform a renovation. A certified renovator is a renovator who has successfully completed a renovator course accredited by the EPA or the Michigan Department of Community Health. Note: because the term renovation is broadly defined by the EPA rule "Lead-Based Paint Renovation, Repair and Painting Program" contractors such as electricians and plumbers may be considered "renovators" under this rule.
- T. The term "Target Housing" refers to housing constructed before 1978, except for: housing for the elderly, dormitories, studio apartments, efficiencies, military barracks and rentals of individual rooms.
- U. The term "TCLP" stands for Toxicity Characteristic Leaching Procedure and refers to one of the tests to determine if waste is to be disposed as a Hazardous Waste or non-hazardous solid waste.
- V. The term "Wet Disposable Cleaning Cloth" refers to a commercially available, pre-moistened, white disposable cloth designed to be used for cleaning hard surfaces such as countertops and uncarpeted floors.

### 1.3 SUBMITTALS

- A. All submittals shall be directed to the owner's representative. Submit documents requested in paragraphs B – E before start of project.
- B. Project Information:
  - 1. Copy of Firm Certification from the EPA.
  - 2. Schedule of renovation, repair and painting activities.
  - 3. Certified supervisor name, crew size, length and number of shifts.
- C. Written Compliance Plan: Submit to owner's representative a Written Compliance Plan incorporating all requirements in the MIOSHA Lead in Construction Standard. Also indicate type of containment and disposal to be established if water is utilized for removal.
- D. Renovation Work Notification
  - 1. Renovations in Housing or Child Occupied Facilities
    - 1. Occupants of units where renovations will take place must be provided with EPA's lead pamphlet "Renovate Right-Important Lead Hazard Information for Families, Child Care Providers and Schools".
    - 2. Obtain written acknowledgement from an adult occupant that the pamphlet has been received or certify in writing that the pamphlet has been delivered to the dwelling and the occupant refused to sign or was unavailable.
    - 3. Obtain a certificate of mailing at least 7 days prior to the renovation.
    - 4. The written certification must include the address of the unit undergoing renovation, the date and method of delivery of the pamphlet, name of person delivering the pamphlet, reason for lack of acknowledgement, the signature of a representative of the firm performing the renovation and the date of the signature.
- E. Prior to application for final payment, submit a renovation report prepared by a certified renovator. The report should include the following:
  - 1. Start and completion dates of project.
  - 2. The name and address of each certified person conducting the renovation and the name of each supervisor assigned to the project.
  - 3. A detailed written description of the project, including all of the following:
    - 1. Renovation methods used.
    - 2. Locations of rooms and components where renovation, repair and painting occurred.
    - 3. Results of Visual Inspection and Cleaning Verification.

## **PART 2 - EXECUTION**

### **2.1 LEAD RENOVATION, GENERAL**

- A. Conduct lead renovation, repair and painting activities in accordance with all state and federal regulations and guidelines.
- B. Assign a Certified Renovator to the project who will remain on-site during all renovation, repair and painting work.
- C. Maintain at each job site and post the following documents:
  - 1. Employee Respiratory Protection Program.
  - 2. Michigan Right-To-Know poster.
  - 3. Material Safety Data Sheet locator.
  - 4. Company standard operating procedure.
  - 5. This specification section.
  - 6. Safety Data Sheets for products used on job.
  - 7. EPA or Michigan Department of Community Health Renovator Certificates for each supervisor (initial and the most recent refresher).
- D. Open-flame burning or torching of lead-based paint is prohibited.
- E. Machine sanding, grinding, abrasive blasting and sandblasting of lead-based paint is prohibited, unless the sanding, grinding, blasting, or sandblasting is conducted using a shrouded tool with a high-efficiency particulate air (HEPA) exhaust control that removes particles of 0.3 microns or larger from the air at an efficiency of 99.97% or more.
- F. Dry scraping of lead-based paint is permitted only in conjunction with heat guns or around electrical outlets. Operating a heat gun on lead-based paint is permitted only if the temperature generated by the heat gun is less than 1,100 °F.

### **2.2 HEALTH AND SAFETY REQUIREMENTS**

- A. General: Determine employee exposure to lead in air as required in MIOSHA Lead in Construction Standard.
- B. Exposure Assessment: If the Contractor has made a previous Exposure Assessment that is representative of the task to be performed on-site, the Contractor may rely on this data and determine the need for personal protective equipment and work practice controls based upon this data.
- C. Personal Air Monitoring: When the Contractor does not have an Exposure Assessment or the Assessment is determined to be insufficient, the Contractor must conduct personal air sampling in accordance with the MIOSHA Lead in Construction Standard and follow all State and Federal regulations and procedures as covered in Certification Training courses.

### **2.3 PREPARATION**

- A. General: Prepare Work Areas in a manner that will protect Owner's personnel and property and contain the work area so that no dust or debris leaves the work area.
- B. Preparing Building Exteriors: Ensure adequate measures are in place to prevent dust and debris from escaping the work area and to limit airborne lead content below the Action Level of 30 ug/m<sup>3</sup> (micrograms per cubic meter) adjacent to the Work Area.
  - 1. Close all doors and windows within 20 feet of the renovation on the same floor and all doors and windows on floors below the renovation area.
  - 2. Ensure that doors within the work area that will be used while the job is being performed are covered with plastic sheeting in a manner that allows workers to pass through while confining the dust and debris.
  - 3. Erect barricades and install warning tape or signs as necessary to prevent inadvertent exposure of passersby to LBP in all forms, including, but not necessarily limited to dust, particles, and fumes.

4. Completely cover grounds and vegetation extending 10 feet beyond the perimeter or a sufficient distance to collect falling debris with minimum 8-mil thick polyethylene sheets with joints between sheets lapped and taped; with one edge taped to adjacent building surfaces below area of work; and with free ends secured in position with stakes, tie-down lines or weights. Cover sufficient ground area to capture wind-blown chips, dust and particles. Contractor is responsible for any paint debris found at project completion.
- C. Preparing Building Interiors:
1. Discontinue building ventilation within the Work Area and seal off ventilation supply, return or exhaust diffusers, grilles or openings.
  2. Remove all objects from the work area or cover with plastic sheeting with all seams and edges sealed.
  3. Close windows and doors in the work area to form a Critical Barrier. Doors must be covered with plastic sheeting.
  4. Cover the floor surface a minimum of six feet beyond the perimeter of the surfaces undergoing renovation or a sufficient distance to contain the dust, whichever is greater.
  5. Post warning signs at all entrances to the Work Area that states the following, as required in MIOSHA Lead in Construction Standard:

**DANGER  
LEAD WORK AREA  
MAY DAMAGE FERTILITY OR THE UNBORN CHILD  
CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM  
DO NOT EAT, DRINK OR SMOKE IN THIS AREA**

## **2.4 WORK PRACTICES**

- A. General: Perform renovation of LBP coated materials in compliance with the following requirements:
1. Restrict access to Work Area to essential personnel.
  2. Use moist-removal methods where applicable. Do not over-saturate the Work Area.
  3. Remove contaminated clothing and personal protective equipment before leaving the Work Area, or Work Area enclosure, as applicable.
  4. If dust or debris is escaping the Work Area or if the Action Level is exceeded outside Work Area, discontinue work and modify Critical Barrier, or perform other modifications of methods or materials as required to prevent dust and debris from escaping.
  5. Prohibit eating, drinking, and smoking in the Work Area.
  6. Collect and contain all paint chips, debris, personal protective equipment and protective sheeting, daily. Seal in heavy duty bags or drums to prepare for proper disposal.
  7. Use precautions (such as tack mats, shoe covers, HEPA vacuuming and or wet wiping) to ensure that all personnel, tools, waste containers and other items are free of dust and debris when leaving the area.

## **2.5 POST RENOVATION CLEANING**

- A. Upon completion of work, mist the plastic sheeting and fold the plastic containment sheeting dirty side inward, after misting and seal edges or dispose of plastic in sealed bags.
- B. Brushing, brooming and other dry methods that generate airborne dust are prohibited.
- C. Remove and dispose of all solid waste used for protection and clean-up as Non-Hazardous Waste.
- D. Clean all objects and surfaces within project area, and two feet beyond, per the methods detailed below, always cleaning higher to lower.
1. Clean walls starting at the ceiling and working down to the floor by either vacuuming with a HEPA vacuum or wiping with a damp cloth.
  2. Thoroughly vacuum all remaining surfaces and objects in the work area including furniture and fixtures, with a HEPA vacuum. The HEPA vacuum must be equipped with a beater bar when vacuuming carpets and rugs.

3. Wipe all remaining surfaces and objects in the area, except for carpeted and upholstered surfaces with a damp cloth. Mop uncarpeted floors thoroughly, using a mopping method that keeps the wash water separate from the rinse water, such as the 2-bucket mopping method or using a wet mopping system. Properly contain all wash water for testing to determine if it is hazardous. Dispose wash water as Hazardous Waste if testing indicates that it is hazardous. If testing indicates that it is non-hazardous filter for particulates and dispose of in a sanitary drain. Do not dispose of wash water in storm drains.
- E. After cleanup is complete a Certified Renovator must perform a visual inspection to determine if dust, debris or residue is present. If dust, debris or residue is present the area must be re-cleaned and the visual inspection repeated.
  - F. After the visual inspection has passed, exterior areas are considered clean. Cleanup of interior areas must be further verified. Start the post renovation cleaning verification process with windows sills and then proceed to uncarpeted floors and countertops, cleaning higher to lower as detailed below:
    1. The Certified Renovator must wipe, with a wet disposable cleaning cloth that is damp to the touch, each window sill, uncarpeted floor and countertop within the work area and compare the cleaning cloth to the cleaning verification card. If the cleaning cloth is darker than the verification card cleaning must be repeated. If it is not, then cleaning is complete.
    2. Each window sill in a project area must be wiped with a separate cleaning verification cloth.
    3. Uncarpeted floors and countertops in the project areas must be less than 40 square feet (sf). If the surface is larger than 40 sf, the work area must be divided into roughly equal sections less than 40 sf.
    4. Wipe each section separately with a new wet disposable cleaning cloth.
    5. Floors must be wet wiped with an application device with a long handle and a head to which the cloth is attached.
    6. For any areas that failed, repeat cleaning, wet wipe again and compare cloth again to the verification card. If the cleaning cloth is darker than the verification card, cleaning must be repeated. If the cleaning cloth is not darker than the verification card, cleaning is complete.
    7. For any areas that have failed two wet wipes, wait until the area has dried completely or 1 hour has passed, whichever is longer. Once dry, wipe that area with a dry disposable cleaning cloth and consider the area adequately cleaned.
  - G. Contractor is responsible for re-cleaning any areas that do not pass applicable cleaning verification standards. The Owner or Owners Consultant may dictate the method of cleaning to reach clearance.
  - H. The Owner reserves the right to perform dust clearance sampling to determine if a renovated area is free of lead hazards.
  - I. Remove all warning signs and tape after proper cleaning has been verified.

## **2.6 DISPOSAL**

- A. Disposal of Non-Hazardous Lead-Based Paint or Lead-Based Paint Components: Collect Non-hazardous LBP waste and dispose of the waste at a landfill.
- B. Project Waste (LBP paint and wash water only): Test waste material using toxicity leaching characteristic procedure (TCLP). Where testing of waste indicates waste is Non-Hazardous, dispose as in Paragraph above, "Disposal of Non-Hazardous LBP or LBP Components. If waste is classified as Hazardous, dispose of in accordance with federal and state requirement.
  1. Place appropriate labels on all containers. Provide all information required on the label; mark labels using indelible ink.

# APPENDIX



**LIMITED BUILDING MATERIAL SURVEY OF  
SUSPECT ASBESTOS CONTAINING MATERIALS  
CITY OF ANN ARBOR - LESLIE HOUSE - WINDOW REPLACEMENT  
INSPECTION DATE - 10/27/2016**

HA #	ROOM# / LOCATION	FLOOR	DESCRIPTION	POS or NEG	QUANTITY
5	Exterior	-	Exterior Door Frame Caulk (Stucco Wall) - Basement West Side	Positive	20 l.f.
5A	Exterior	-	Exterior Window Caulk (Stucco Wall) - 1st Floor West Side	Positive	20 l.f.
10	Basement	B	Window Caulk - Basement Only	Positive	16 l.f.
8	Basement	B	Possible Vermiculite Behind Wall	Assumed Positive	-
8	1st Floor	1	Possible Vermiculite Behind Wall	Assumed Positive	-
8	2nd Floor	2	Possible Vermiculite Behind Wall	Assumed Positive	-
1	Exterior	-	Exterior Window Glaze - Grey	Negative	-
2	Exterior	-	Exterior Window Caulk On Wood Siding	Negative	-
3	Exterior	-	Exterior Window Caulk - South Side Only	Negative	-
4	Exterior	-	Exterior Stucco	Negative	-
6	Basement	B	Plaster Wall	Negative	-
6	1st Floor	1	Plaster Wall	Negative	-
6	2nd Floor	2	Plaster Wall	Negative	-
7	Basement	B	Drywall, Tape & Mud	Negative	-
7	1st Floor	1	Drywall, Tape & Mud	Negative	-
7	2nd Floor	2	Drywall, Tape & Mud	Negative	-
9	1st Floor	1	Window Rope	Negative	-
9	2nd Floor	2	Window Rope	Negative	-
11	1st Floor Kitchen	1	Kitchen Countertop Ceramic Grout	Negative	-
12	1st Floor Kitchen	1	Off White Speckaled Floor Sheeting	Negative	-
12A	1st Floor Kitchen	1	Mastic - Off White Speckaled Floor Sheeting	Negative	-
13	1st Floor Kitchen	1	4" Black Cove Base	Negative	-
13A	1st Floor Kitchen	1	Mastic - 4" Black Cove Base	Negative	-
14	1st Floor Kitchen	1	2" Black Cove Base for Kitchen Casework	Negative	-
14A	1st Floor Kitchen	1	Mastic - 2" Black Cove Base for Kitchen Casework	Negative	-
15	1st Floor Hallway	1	Gray Speckaled Floor Sheeting	Negative	-
15A	1st Floor Hallway	1	Mastic, Gray Speckaled Floor Sheeting	Negative	-
15	1st Floor Restroom	1	Gray Speckaled Floor Sheeting	Negative	-
15A	1st Floor Restroom	1	Mastic, Gray Speckaled Floor Sheeting	Negative	-

**LIMITED BUILDING MATERIAL SURVEY OF  
 SUSPECT LEAD CONTAINING PAINTS, COATINGS & VARNISHES  
 CITY OF ANN ARBOR - LESLIE HOUSE - WINDOW REPLACEMENT  
 INSPECTION DATE - 10/27/2016**

GROUP#	ROOM# / LOCATION	FLOOR	COMPONENT	DESCRIPTION/COLOR	SUBSTRATE	% LEAD	POS or NEG
11	Exterior	-	Cedar Siding	Brown	Wood	0.30%	Positive
9	Exterior	-	Door Frame	Brown	Wood	10.20%	Positive
12	Exterior	-	Hand Rail	Brown	Metal	0.01%	Positive
2	1st Floor	1	Storm/Screen Frame	Off White	Wood	14.90%	Positive
2	2nd Floor	2	Storm/Screen Frame	Off White	Wood	14.90%	Positive
2	Exterior	-	Storm/Screen Frame	Off White	Wood	14.90%	Positive
5	1st Floor	1	Wall	Off White	Plaster	5.20%	Positive
6	1st Floor	1	Wall	Off White	Drywall	-	Positive
5	2nd Floor	2	Wall	Off White	Plaster	5.20%	Positive
6	2nd Floor	2	Wall	Off White	Drywall	-	Positive
5	Basement	B	Wall	Off White	Plaster	5.20%	Positive
7	Exterior	-	Wall	Off White	Stucco	8.80%	Positive
1	1st Floor	1	Window Frame	Off White	Wood	4.90%	Positive
3	1st Floor	1	Window Frame	Brown	Wood	9.00%	Positive
4	1st Floor - Kitchen	1	Window Frame	Green	Wood	9.00%	Positive
1	2nd Floor	2	Window Frame	Off White	Wood	4.90%	Positive
3	2nd Floor	2	Window Frame	Brown	Wood	9.00%	Positive
8	Basement	B	Window Frame	Cream	Wood	4.80%	Positive
10	Exterior	-	Window Frame	Brown	Wood	9.00%	Positive

**LIMITED BUILDING MATERIAL SURVEY OF  
SUSPECT LEAD CONTAINING PAINTS, COATINGS & VARNISHES  
CITY OF ANN ARBOR - LESLIE CARETAKER HOUSE - WINDOW REPLACEMENT  
INSPECTION DATE - 10/27/2016**

<b>GROUP#</b>	<b>ROOM# / LOCATION</b>	<b>FLOOR</b>	<b>COMPONENT</b>	<b>DESCRIPTION/COLOR</b>	<b>SUBSTRATE</b>	<b>% LEAD</b>	<b>POS or NEG</b>
3	Exterior	-	Cedar Siding	Brown	Wood	2.80%	Positive
5	1st Floor	1	Knotty Pine Wall	Light Stain	Wood	0.08%	Positive
6	1st Floor	1	Wall	White	Plaster	-	Positive
6	2nd Floor	2	Wall	White	Plaster	-	Positive
7	1st Floor	1	Wall	White	Drywall	-	Positive
7	2nd Floor	2	Wall	White	Drywall	-	Positive
1	Exterior	-	Window Frame	Off White	Wood	1.20%	Positive
2	Exterior	-	Window Frame	Off White	Wood	2.25%	Positive
4	1st Floor	1	Window Frame	Off White	Wood	0.60%	Positive
4	2nd Floor	2	Window Frame	Off White	Wood	0.60%	Positive

**LIMITED BUILDING MATERIAL SURVEY OF  
SUSPECT ASBESTOS CONTAINING MATERIALS  
CITY OF ANN ARBOR - LESLIE CARETAKER HOUSE - WINDOW REPLACEMENT  
INSPECTION DATE - 10/27/2016**

HA #	SAMPLE#	ROOM# / LOCATION	FLOOR	DESCRIPTION	POS or NEG	QUANTITY
4		Basement	B	Window Glaze - Basement Only	Positive	10 l.f.
3		Basement	B	Drywall, Tape & Mud	Negative	-
3		1st Floor	1	Drywall, Tape & Mud	Negative	-
3		2nd Floor	2	Drywall, Tape & Mud	Negative	-
6		Exterior	-	Exterior Brown Window Caulk	Negative	-
7		Exterior	-	Exterior Window Glaze (North Side Newer Window)	Negative	-
8		Exterior	-	Exterior Window Glaze (South Side Newer Window)	Negative	-
2		Basement	B	Plaster Wall	Negative	-
2		1st Floor	1	Plaster Wall	Negative	-
2		2nd Floor	2	Plaster Wall	Negative	-
10		Exterior	-	Roof Shingles	Negative	-
11		Exterior	-	Roof Tar Paper	Negative	-
5		Basement	B	Window Caulk - Basement Only	Negative	-
9		Exterior	-	Window Glaze	Negative	-
1		1st Floor	1	Window Rope	Negative	-
1		2nd Floor	2	Window Rope	Negative	-



**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 \$12.93/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 \$14.43/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 (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

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

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name and Title

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

\_\_\_\_\_  
Phone/Email address

Questions about this form? Contact Procurement Office City of Ann Arbor Phone: 734/794-6500

# CITY OF ANN ARBOR LIVING WAGE ORDINANCE

**RATE EFFECTIVE APRIL 30, 2016 - ENDING APRIL 29, 2017**

**\$12.93 per hour**

If the employer provides health care benefits\*

**\$14.43 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](mailto:cspencer@a2gov.org)**



<b>Vendor Conflict of Interest Disclosure Form</b>
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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:

<b>Conflict of Interest Disclosure*</b>	
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 style="border: 0; border-top: 1px solid black;"/> <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.

<b>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:</b>		
Vendor Name	Vendor Phone Number	
Signature of Vendor Authorized Representative	Date	Printed Name of Vendor Authorized Representative



**CITY OF ANN ARBOR  
DECLARATION OF COMPLIANCE**

Non-Discrimination Ordinance

The “non discrimination by city contractors” provision of the City of Ann Arbor Non-Discrimination Ordinance (Ann Arbor City Code Chapter 112, Section 9:158) requires all contractors proposing to do business with the City to treat employees in a manner which provides equal employment opportunity and does not discriminate against any of their employees, any City employee working with them, or any applicant for employment on the basis 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. It also requires that the contractors include a similar provision in all subcontracts that they execute for City work or programs.

In addition the City Non-Discrimination Ordinance requires that all contractors proposing to do business with the City of Ann Arbor must satisfy the contract compliance administrative policy adopted by the City Administrator. A copy of that policy may be obtained from the Purchasing Manager

The Contractor agrees:

- (a) To comply with the terms of the City of Ann Arbor’s Non-Discrimination Ordinance and contract compliance administrative policy.
- (b) To post the City of Ann Arbor’s Non-Discrimination Ordinance Notice in every work place or other location in which employees or other persons are contracted to provide services under a contract with the City.
- (c) To provide documentation within the specified time frame in connection with any workforce verification, compliance review or complaint investigation.
- (d) To permit access to employees and work sites to City representatives for the purposes of monitoring compliance, or investigating complaints of non-compliance.

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 in accordance with the terms of the Ann Arbor Non-Discrimination Ordinance. The undersigned certifies that he/she has read and is familiar with the terms of the Non-Discrimination Ordinance, obligates the Contractor 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.

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

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

\_\_\_\_\_  
Print Name and Title

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

\_\_\_\_\_  
Phone/Email address

**Questions about the Notice or the City Administrative Policy, Please contact:**  
Procurement Office of the City of Ann Arbor  
(734) 794-6500

## 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/departments/city-clerk](http://www.a2gov.org/departments/city-clerk)

**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 has a grievance alleging a violation of this chapter, he/she has 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 alleged discriminatory action to file a complaint with the city's Human Rights Commission. If an individual fails to file a complaint alleging a violation of this chapter within the specified time frame, the complaint will not be considered by the Human Rights Commission. The complaint should be made in writing to the Human Rights Commission. The complaint may be filed in person with the City Clerk, by e-mail ([hrc@a2gov.org](mailto:hrc@a2gov.org)), by phone (734-794-6141) or by mail (Ann Arbor Human Rights Commission, PO Box 8647, Ann Arbor, MI 48107). The complaint must contain information about the alleged discrimination, such as name, address, phone number of the complainant and location, date and description of the alleged violation of this chapter.

**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.