Division of Finance and Business Operations

Wayne State University

Demolition of 5959 Woodward Ave

WSU Project Number 199-405901

FOR:
Board of Governors
Wayne State University
Detroit, Michigan

Owner's Representative:
Ariel Suarez, Project Manager
Facilities Planning & Management
Design & Construction Services
5454 Cass
Wayne State University
Detroit, Michigan 48202

Purchasing Agent:
Valerie Kreher, **Senior Buyer**
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720
rfpteam2@wayne.edu

Consultant:
Fishbeck
1001 Woodward Avenue Suit 860
Detroit MI 48226

March 18, 2024

TABLE OF CONTENTS

INFORMATION FOR BIDDERS

OWNER:	Board of Governors Wayne State University
PROJECT:	**Demolition of 5959 Woodward Ave** Project No. **199-405901**
LOCATION:	Wayne State University **5959 Woodward Avenue Detroit MI 48202** Detroit, Michigan 48202
PURCHASING AGENT:	**Valerie Kreher**, **Senior Buyer** WSU – Procurement & Strategic Sourcing 5700 Cass, Suite 4200 Detroit, Michigan 48202 **313-577-3720** **rfpteam2@wayne.edu**
OWNER'S REPRESENTATIVE:	**Ariel Suarez**, Project Manager Facilities Planning & Management Design & Construction Services Wayne State University 5454 Cass Avenue Detroit, Michigan 48202
Architect:	**Fishbeck** **1001 Woodward Avenue Suit 860** **Detroit MI 48226**

SPECIAL NOTE: Right to reject any and all proposals, either in whole or in part and to waive any irregularities therein is reserved by the Owner.

BIDS ADVERTISED: **March 18, 2024**

BIDDING: Bidding documents may be obtained by vendors from the University Purchasing Web Site at http://go.wayne.edu/bids beginning **March 18, 2024**. When visiting the Web Site, click on the "**Construction**" link in green. Copies of the RFP will not be available at the pre-proposal meeting.

Optional **Pre-Bid Conference:** To participate, it is **Optional** that you and/or responsible representatives of your organization attend our pre-bid conference, to be held on **March 25, 2024, 10:00 am *(Eastern - Detroit Time)***.

Vendors who would like to participate in the pre-bid meeting via a TEAMS Video Conference or Conference Call, may do so via the information below:

Microsoft Teams Meeting
On-line or via Conference Call
Click here to join the meeting
Need to join from a mobile device but don't have TEAMS on it?
Visit our website for instruction on adding TEAMS to your device.

OPTIONAL Site Visit (if needed): A Site visit has been scheduled at the conclusion of the pre-bid meeting, at the discretion of the project manager. The tentative date for Site Visit is **March 26, 2024 at 2:00 pm**.

DUE DATE FOR QUESTIONS: Due Date for questions shall be **April 1, 2024 at 12:00 Noon.** All questions must be reduced to writing and emailed to the attention of **Valerie Kreher**, **Senior Buyer** at **rfpteam2@wayne.edu**.

Bids Due: Proposals for lump-sum General Contract will be received by electronic submission on **April 8, 2024,** until

2:00 p.m. (local time). The link for bid submission will be posted with the bid details at **http://go.wayne.edu/bids** beginning **March 18, 2024**. Vendors are required to combine documents into one PDF to ensure no portion of your response is inadvertently omitted. This includes your bid, bid bond, and any other documents.

No public bid opening will be held.

Bid Qualification Meeting: Bidders must be available for a bid prequalification meeting, as soon as the day following the bid opening. The lowest qualified bidder will be contacted and requested to meet with Facilities Planning & Management at their office located at 5454 Cass Avenue, Detroit, MI 48202. During this meeting, the Vendor must provide information on the qualifications of management and supervisory personnel assigned to the project, a **Project Schedule** and a **Schedule of Values**, including a list of Contractor's suppliers, subcontractors, and other qualifications. This information should include information on the contractor's and any subcontractor's access to labor necessary for contract performance.

If all aspects of the bid are in order, an unsigned contract will be given to the successful Contractor as soon as it's available. The Contractor has 5 business days to return the contract to the Project Manager for University counter signature. The contractor must also submit a Performance Bond as outlined above, and a Certificate of Insurance in the same 5 business day period. In the event the Contractor fails to return the documents in this 5-day period, the University reserves the right to award the contract to the next lowest qualified bidder.

All available information pertaining to this project will be posted to the Purchasing web site at **http://go.wayne.edu/bids**.
Information that is not posted to the website is not available/not known

INSTRUCTIONS TO BIDDERS

OWNER: Board of Governors
Wayne State University

PROJECT: **Demolition of 5959 Woodward Ave**
Project No. **199-405901**

LOCATION: Wayne State University
5959 Woodward Avenue Detroit MI 48202,
Detroit, Michigan 48202

PURCHASING AGENT: **Valerie Kreher**, **Senior Buyer**
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720
rfpteam2@wayne.edu

1. PROPOSALS

A. Procurement will receive Proposals for the work as herein set forth on **April 8, 2024**, until 2:00 p.m. (local time). The link for bid submission will be posted with the bid details at http://go.wayne.edu/bids. **No public bid opening will be held.**

B. Proposals shall be for a **lump-sum General Contract for the entire work of the Project as provided in the Form of Proposal.**

C. Proposals shall be submitted by electronic submission on forms furnished with the Bidding documents. The link for bid submission will be posted with the bid details at http://go.wayne.edu/bids beginning **March 18, 2024.** The forms must be completed in its entirety and must be signed, and the completed forms shall be without alterations, interlineations, or erasures. Forms shall contain no recapitulations of the work to be done.

D. All base bids must be conforming to the detailed specifications and drawings provided by the University, including any Addenda issued. Voluntary Alternates will only be considered if the Contractor has also submitted a conforming base bid. Any stipulation of voluntary alternates or qualifications contrary to the Contract requirements made by the Bidder in or accompanying his proposal as a condition for the acceptance of the Contract will not be considered in the award of the Contract and will cause the rejection of the entire Proposal.

E. The competency and responsibility of Bidders will be considered in making the award. The University is not obligated to accept the lowest or any other bids. **The University reserves the right to reject any and all bids and to waive any informalities in the Proposals**.

2. PROPOSAL GUARANTEE

A. A satisfactory Bid Bond executed by the Bidder and Surety Company, in an amount equal to not less than five percent (5%) of the maximum proposal amount shall be submitted with each Proposal, which amount may be forfeited to the Board of Governors, Wayne State University, if the successful Bidder refuses to enter into a Contract within ninety (90) days from receipt of Proposals.

B. Bond must be issued by a Surety Company with an A or A- rating as denoted in the AM Best Key Rating Guide.

C. Bid bonds shall be accompanied by a Power of Attorney authorizing the signer of the bond to do so on behalf of the Surety Company.

D. Withdrawal of Proposals is prohibited for a period of ninety (90) days after the actual date of opening thereof.

3. CONTRACT SECURITY

A. The successful Bidder will be required to furnish a Performance Bond and Labor and Material Payment bond in an amount equal to 100% of the contract award amount, and include such cost in the Proposal, complying with University policy and the laws of the State of Michigan.

B. Performance Bond and Labor and Material Payment Bond shall be from a surety company acceptable to the Owner and made payable as follows:

(1) A bond for 100% of the contract award amount to the Board of Governors of Wayne State University, and guaranteeing the payment of all subcontractors and all indebtedness incurred for labor, materials, or any cause whatsoever on account of the Contractor in accordance with University policy and the laws of the State of Michigan relating to such bonds.

(2) A bond for 100% of the contract award amount to the Board of Governors of Wayne State University to guarantee and insure the completion of work according to the Contract.

C. The only acceptable Performance Bond shall be the AIA A312 – 2010.

D. Bond must be issued by a Surety Company with an A or A- rating as denoted in the AM Best Key Rating Guide.

4. BOND CLARIFICATION

For bids below $50,000.00,

A. Bid bond will not be required.
B. Performance and Material & Labor Payment bonds will not be required.

5. INSPECTION

A. Before submitting its Proposal, each Bidder shall be held to have visited the site of the proposed work and to have familiarized themselves as to all existing conditions affecting the execution of the work in accordance with the Contract Documents. No allowance or extra consideration on behalf of the Contractor will subsequently be made by reason of its failure to observe the Conditions or on behalf of any subcontractor for the same reason.

6. EXPLANATION TO BIDDERS AND ADDENDA

A. Neither the Owner nor Representative nor Purchasing Agent will give verbal answers to any inquiries regarding the meaning of drawings and specifications, and any verbal statement regarding same by any person, previous to the award, shall be unauthoritative.

B. Any explanation desired by Bidders must be submitted in writing to the Purchasing Agent, and if explanation is necessary, a reply will be made in the form of an Addendum, a copy of which will be distributed via the appropriate Listserv maintained by Procurement & Strategic Sourcing, and will be posted to the website.

B. All addenda issued prior to date of receipt of Proposals shall become a part of these Specifications, and all proposals are to include the work therein described.

7. INTERPRETATION OF CONTRACT DOCUMENTS

A. If any person contemplating submitting a bid for the proposed Contract is in doubt as to the true meaning of any part of the drawings, specifications, or other Contract Documents, he may submit to the Purchasing Agent, a written request for an interpretation thereof. The person submitting the request will be responsible for its prompt delivery. Any interpretation of the Contract Documents will be made by an addendum duly issued. A copy of such addendum will be posted to the website and distributed via the listserv. Each proposal submitted shall list all addenda, by numbers, which have been published prior to the time scheduled for receipt of proposal.

8. SUBSTITUTION OF MATERIALS AND EQUIPMENT

A. Whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design will be considered equally acceptable provided that the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

9. TAXES

A. The Bidder shall include in his lump sum proposal and make payment of all Federal, State, County and Municipal taxes, including Michigan State Sales and Use Taxes, now in force or which may be enacted during the progress and completion of the work covered. Information regarding the State of Michigan sales and use tax laws can be found in SOM Revenue Administrative Bulletin 2016-18.

10. REQUIREMENTS FOR SIGNING PROPOSALS AND CONTRACTS

A. The following requirements must be observed in the signing of proposals that are submitted:

(1) Proposals that are not signed by individuals making them shall have attached thereto a Power of Attorney, evidencing the authority to sign the Proposal in the name of the person for whom it is signed.

(2) Proposals that are signed for partnership shall be signed by all of the partners or by an Attorney-in-Fact. If signed by an Attorney-in-Fact, there must be attached to the Proposal a Power of Attorney evidencing authority to sign the Proposal, executed by the partners.

(3) Proposals that are signed for a corporation shall have the correct corporate name thereof and the signature of the President or other authorized officer of the corporation, manually written in the line of the Form of Proposal following the words "signed by". If such a proposal is signed by an official other than the President of the Corporation, a certified copy of resolution of the Board of Directors, evidencing the authority of such official to sign the bid, shall be attached to it. Such proposal shall also bear the attesting signature of the Secretary of the Corporation and the impression of the corporate seal.

11. QUALIFICATIONS OF BIDDERS

A. The Owner may request each of the three (3) low bidders to submit information necessary to satisfy the Owner that the Bidder is adequately prepared to fulfill the Contract. Such information may include past performance records, list of available personnel, plant and equipment, description of work that will be done simultaneously with the Owner's Project, financial statement, or any other pertinent information. This information and such other information as may be requested will be used in determining whether a Bidder is qualified to perform the work required and is responsible and reliable.

12. SPECIAL REQUIREMENTS

A. The attention of all Bidders is called to the General Conditions, Supplementary General Conditions, and Special Conditions, of which all are a part of the Specifications covering all work, including Subcontracts, materials, etc. Special attention is called to those portions dealing with Labor Standards, including wages, fringe benefits, Equal Employment Opportunities, and Liquidated Damages.

B. Prior to award of the project, the apparent low bidder will be required to produce a **schedule of values** which will include the proposed subcontractors for each division of work and whether the subcontractor is signatory or non-signatory. A contract will not be issued to the apparent low bidder until this document is provided. A contractor will have 5 business days to produce this document. If the required document is not received within this time, the bidder will be disqualified.

13. NOTICE OF AWARD/ACCEPTANCE OF BID PROPOSAL

A. The Proposal shall be deemed as having been accepted when a copy of the Contract (fully executed by both the vendor and the appropriate signatory authority for the University), with any/all Alternates, Addenda, and Pre-Contract Bulletins, as issued by the office or agent of the Owner has been duly received by the Contractor. After signing the Contracts, the Contractor shall then return all copies, plus any required bonds and certificates of insurance, to the office of the Owner's Representative, at 5454 Cass, Wayne State University, Detroit, MI 48202. Construction will begin when the fully-executed contract has been returned to the Contractor.

14. TIME OF STARTING AND COMPLETION

A. It is understood that the work is to be carried through to substantial completion with the utmost speed consistent with good workmanship and to meet the established start and completion dates.

B. The Contractor shall begin work under the Contract without delay, upon receipt of a fully-executed contract from the Owner, and shall substantially complete the project ready for unobstructed occupancy and use of the Owner for the purposes intended within the completion time stated in the Contract.

C. The Contractor shall, immediately upon receipt of fully-executed contract, schedule his work and expedite deliveries of materials and performance of the subcontractors to maintain the necessary pace for start and completion on the aforementioned dates.

15. CONTRACTOR'S PERFORMANCE EVALUATION

In an effort to provide continuous process improvement regarding the construction of various university projects, Wayne State University is embarking upon a process of evaluating the contractor's overall performance following the completion of work. At the conclusion of the construction project a subjective evaluation of the Contractor's performance will be prepared by the Project Manager and the supervising Director of Construction. The evaluation instrument that will be used in this process is shown in Section **00440-01 - Contractor's Performance Evaluation**.

16. BIDDING DOCUMENTS

A. Bid specifications are available online beginning **March 18, 2024** through Wayne State University Procurement & Strategic Sourcing's Website for Advertised Bids: http://go.wayne.edu/bids. The plans for this project can be viewed in advance and/or printed from the above website. Copies of the RFP will not be available at the pre-proposal meeting.

.

B. **DOCUMENTS ON FILE**

(1) *Wayne State University Procurement & Strategic Sourcing's Website.*
All available information pertaining to this project will be posted to the Purchasing web site at **http://go.wayne.edu/bids**.
Information that is not posted to the website is not available/not known.

(2) Notification of this Bid Opportunity has been sent to those entities registered with our ListServ. Available ListServs can be found at
http://www.forms.procurement.wayne.edu/Adv_bid/Adv_Bid_Listserve.html

(3) Please note: Bid notices will be sent only to those Vendors registered to receive them via our Bid Opportunities list serve. To register, to **http://go.wayne.edu/bids**, and click on the "Join our Listserve" link at the top of the page.

15. Smoke and Tobacco-Free Policies

On August 19, 2015, Wayne State joined hundreds of colleges and universities across the country that have adopted smoke- and tobacco-free policies for indoor and outdoor spaces. Contractors are responsible to ensure that all employees and all subcontractors' employees are in compliance anytime they are on WSU's main, medical, or extension center campuses. The complete policy can be found at http://wayne.edu/smoke-free/policy/.

Notice of Optional Pre-Bid Conference

PROJECT: **Demolition of 5959 Woodward Ave**,

PROJECT NOS.: **WSU PROJECT NO. 199-405901**

It is **Optional** that each Contractor proposing to bid on this work must attend a pre-bid conference as a condition for submitting a proposal.

Pre-registration for the meeting is to be made on or before Noon on**, March 22, 2024.** Please use our online registration form to confirm your attendance. The link for the registration form will be posted with the proposal details at **http://go.wayne.edu/bids**. The pre-bid meeting will be held on **March 25, 2024, 10:00 am *(Eastern - Detroit Time).***

Vendors who would like to participate in the pre-bid meeting via a TEAMS Video Conference or Conference Call, may do so via the information below:

Microsoft Teams Meeting
On-line or via Conference Call
Click here to join the meeting
Need to join from a mobile device but don't have TEAMS on it?
Visit our website for instruction on adding TEAMS to your device.

The purpose of this conference is to clarify the procedures, scope of work, and to identify any omissions and/or inconsistencies that may impede preparation and submission of representative competitive bids.

In the event that less than 3 individual contractor firms attend the pre-bid conference, the University reserves the right, at its sole discretion, to either reschedule the pre-bid conference or proceed and offer a second pre-bid conference date. (Attendance at only one pre-bid conference will be required).

Minutes of the conference shall be posted to the Website at **http://go.wayne.edu/bids**.

Any clarifications or corrections that cannot be made at the conference will be by Addendum.

All available information pertaining to this project will be posted to the Purchasing web site at **http://go.wayne.edu/bids**.
Information that is not posted to the website is not available/not known.

AGENDA

I. Welcome and Introductions
A. Wayne State University Representatives
B. Vendor Representatives

C. Sign in Sheet- be sure to include your company name and representative in attendance on the sign in sheet.

II. Brief Overview of Wayne State University
A. Purpose and Intent of RFP.
B. Detailed review of the RFP and the requirements for a qualified response.
C. Review of all pertinent dates and forms that are REQUIRED for a qualified response.

III. Vendor Questions/Concerns/Issues
A. Questions that can be answered directly by the appropriate person in this meeting will be answered and both question and answer will be recorded in the minutes of the meeting.

B. Questions that need to be researched will be answered and a nature of clarification will be emailed to the appropriate ListServ. See **http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_Bid_Listserve.html** for a list of ListServ Bid Lists.

C. Minutes will be emailed to the appropriate ListServ.

D. Questions and concerns that come up after this meeting are to be addressed to **Valerie Kreher**, Procurement & Strategic Sourcing. Discussion with other University members is seriously discouraged and could lead to disqualification from further consideration. All questions and answers will be recorded and emailed to all participants of the RFP.

E. Due date for questions is **April 1, 2024,** 12:00 noon.

IV. Minimum Participation
A. Pre-registration for the Pre-Bid meeting is required. In the event that we do not have 3 or more eligible bidders pre-registered, the University reserves the right to postpone the Pre-bid meeting with up to 4 business hour notice.

B. If less than 3 individual contractor firms attend the **Optional** pre-bid meeting, the University reserves the right, at its sole discretion, to either reschedule the pre-bid conference or proceed and offer a second pre-bid conference date. (Attendance at only one pre-bid conference will be required).

C. On the day of the bid opening, if less than 3 sealed bids are received, the University reserves the right, at its sole discretion, to rebid the project in an effort to obtain greater competition. If the specifications are unchanged during the rebid effort, any contractor who submitted a bid will be given the option of keeping its bid on file for opening after the second bid effort, or of having the bids returned to them unopened.

V. Proposal Due Date: **April 8, 2024**, 2:00 p.m.

VI. Final Comments

VII. Adjourn

VENDOR NAME_____

GENERAL CONTRACT - PROPOSAL FORM

Sealed proposals for lump-sum General Contract will be received at the office of the Procurement & Strategic Sourcing **by electronic submission on April 8, 2024,** until 2:00 p.m. (local time). The link for bid submission will be posted with the bid details at **http://go.wayne.edu/bids** beginning **March 18, 2024**.

Please Note – Vendors must Pre-qualify themselves when responding to this bid opportunity. Our Prequalification questions can be found on page 4 of this section.

OWNER:	Board of Governors Wayne State University
PROJECT:	**Demolition of 5959 Woodward Ave**
PROJECT NO.:	WSU PROJECT NO. **199-405901**
PROJECT TYPE:	**General Work**
PURCHASING AGENT:	**Valerie Kreher**, **Senior Buyer** WSU – Procurement & Strategic Sourcing 5700 Cass, Suite 4200 Detroit, Michigan 48202 **313-577-3720** **rfpteam2@wayne.edu**
OWNER'S REPRESENTATIVE:	**Ariel Suarez**, Project Manager Design & Construction Services Facilities Planning & Management 5454 Cass Avenue Detroit, Michigan 48202
TO:	Board of Governors Wayne State University Detroit, Michigan

PREBID MEETING:

Did your company attend the **Optional** Pre-Bid Conference?
Yes _____ No _____

BASE PROPOSAL:

The undersigned agrees to enter into an Agreement to complete the entire work of the **Demolition of 5959 Woodward Ave** project (WSU Project No. **199-405901**) in accordance with the Bidding Documents for the following amounts:

_____ $ _____ Dollars

WSU WAGES:

Did your company quote based upon **Union or WSU Wage Rates** as required?
Yes _____ No _____

CONFICT OF INTEREST:

Are you or any Officer, Owner or Partner in this company an employee of Wayne State University, or have you been an employee within the past 24 months? If Yes, explain below.
Yes _____ No _____

_____

Are any immediate family members of any Officer, Owner or Partner in this company employees of Wayne State University? If Yes, explain below.
Yes _____ No _____

_____

LAWN REPLACEMENT:

The undersigned agrees that, in the event of existing lawn or landscaping damage, due to the Contractor's work, that has not been properly addressed and repaired to the satisfaction of the University, the University may repair/replace the lawn and/or landscaping, and that the expense will be at a **unit cost of $15.00 per square yard for lawn, and landscaping at a rate of 1.5 times the cost of said repairs**, the full cost of which shall be reimbursed by the contractor.

CONTRACT CHANGE ORDERS:

The undersigned agrees to the following pricing formula and rates for changes in the contract work:

Where changed Work is performed, the Contractor may add to the total estimated actual cost for such Work no more than ten (10%) for subcontractor mark-up and seven and one-half percent (7.5%) for self-performed trade work for profit, overhead, insurance, taxes, indirect supervision, bonds, and any other costs not allowed by section 4.02.01

Within 14 days of the project's contract execution Contractor shall provide to the Owner; Subcontractor's hourly labor rate breakdown details. This requirement shall extend to the lowest level of subcontractor participation.

* Job and general overhead includes supervision and executive expenses; use charges on small tools, scaffolding, blocking, shores, appliances, etc., and other miscellaneous job expenses.

** Net labor cost is the sum of the base wages, fringe benefits established by governing trade organizations, applicable payroll taxes, and increased expense for contractor's liability insurance (Workman's Compensation, P.L. and P.D.).

TIME OF COMPLETION:

The Contract is expected to be fully executed on or about 25 calendar days after successful bidder qualification and recommendation of award. The undersigned agrees to start construction **immediately after** receipt of a fully executed contract, and to complete the work as follows:

Substantial Completion will be completed no later than **August 30, 2024.**

LIQUIDATED DAMAGES:

It is understood and agreed that, if project is not completed within the time specified in the contract plus any extension of time allowed pursuant thereto, the actual damages sustained by the Owner because of any such delay, will be uncertain and difficult to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by Owner would be the sum of **$100.00 per day**, and therefore the contractor shall pay as liquidated damages to the Owner the sum of **$100.00 per day** for each day's delay in substantially completing said project beyond the time specified in the Contract and any extensions of time allowed thereunder.

TAXES:

The undersigned acknowledges that prices stated above include all applicable taxes of whatever character or description. Michigan State Sales Tax is applicable to the work. Bidder understands that the Owner reserves the right to reject any or all bids and to waive informalities or irregularities therein.

ADDENDA:

The undersigned affirms that the cost of all work covered by the following Addenda are included in the lump sum price of this proposal.

Addendum No._____Date_____ Addendum No._____Date_____

Addendum No._____Date_____ Addendum No._____Date_____

Addendum No._____Date_____ Addendum No._____Date_____

Addendum No._____Date_____ Addendum No._____Date_____

Addendum No._____Date_____ Addendum No._____Date_____

CONTRACTOR'S PREQUALIFICATION STATEMENT & QUESTIONNAIRE:

Our Minimum Requirements for Construction Bids are:

WSU considers this project: General Work.

Criteria	Small Project bid less than $50,000	Medium Project bid between $50,001 and $250,000	Large Project bid between $250,001 and $2 million	Very Large Project bid greater than $2 million
EMR Rating **(Experience Modification Rating)**	1.0 or Less	1.0 or Less	1.0 or Less	1.0 or Less
Bondable Vendor	N.A.	Required	Required	Required
Length of Time in Construction Business	2 Years	3 Years	5 Years	5 Years
Demonstrated Experience in Projects Similar in Scope and Price in the last 3 years	1 or more	1 or more	2 or more	3 or more
Unsuccessful Projects on Campus in last 3 years	None Allowed	None Allowed	None Allowed	None Allowed
Failure to comply with WSU Wage and/or Project Labor requirements	None Allowed	None Allowed	None Allowed	None Allowed
Withdrawn University Bid (with or without Bond forfeiture) within the last 3 years **	1 or less	1 or less	1 or less	1 or less
Company currently not in Chapter 11 of the US Bankruptcy Code	1 Year	2 Years	3 Years	3 Years

** Withdrawal of a bid is subject to the University suspension policy, for a period up to one year.

Contractors must complete the following information to determine their eligibility to participate in this bid. This information is required with your Bid to the University

Failure to complete this form in its entirety will result in your bid being disqualified.

Check one of the following on the makeup of your company:

_____ Corporation _____ Individual

_____ Partnership _____ Joint Venture

_____ Other (Explain below):

_____

_____

_____

Diversity Classification: Please indicate the appropriate diversity classification for your company. The University recognizes the following groups as diverse or disadvantaged:

- Majority Owned _____
- Minority Business Enterprises (MBE) _____
- Women Business Enterprises (WBE) _____
- Disabled Veteran Enterprises (DVBE) _____
- Disabled Person Enterprises (DBE) _____
- Veteran Owned Businesses (VBE) _____
- Small Businesses per the US Small Business Administration (SBE) _____
- Other (Please Explain): _____ _____

1. How many years has your organization been in business as a contractor? _____
2. How many years has your organization been in business under its present business name? _____
3. List states in which your organization is legally qualified to do business. _____

   _____
4. Provide the Name and Address of your Liability Insurance Carrier. _____

   _____
5. What is your current EMR Rating? _____
   The minimum requirement is an EMR Rating of 1.0 or less for all projects. Bidders with a rating higher than 1.0 understand that their bid may be disqualified, at the sole discretion of the University.
6. What percentage of work performed on projects are by company employees; excluding any hired subcontracting and outsourced relationships, for the bid submitted? _____ %
7. What percentage of work performed on your company's behalf are by subcontracted business relationships; disallowing 1099 contracting work forces, for the bid submitted? _____ %
8. Have you ever failed to complete any work awarded to you? If so, attach a separate sheet of explanation. Include the name of the Project, the customer, the dates of the work, and the amount of the contract?

   _____
9. Have you withdrawn a bid after a University bid opening and/or refused to enter into a contract with the University upon notification of award within the last 3 years? If so, state the Project Name and Number, and the date of bid submission below.

   _____
10. Has any officer or partner of your organization ever been an officer or partner of another organization that failed to complete a construction contract? If so, attach a separate sheet of explanation.

    _____
11. List the construction experience of the principals and superintendents of your company.

    Name: _____ Title: _____

_____

_____

Name: _____ Title: _____

_____

_____

Name: _____ Title: _____

_____

_____

12. List the construction Projects, and approximate dates, when you performed work similar in Scope to this project.

    Project: _____ Owner: _____

    Contract Amount: _____ Date Completed: _____

    Project: _____ Owner: _____

    Contract Amount: _____ Date Completed: _____

    Project: _____ Owner: _____

    Contract Amount:_____ Date Completed: _____

13. List the construction Projects, and approximate dates, when you performed work similar in Dollar Amount to this project.

    Project:_____ Owner:_____

    Contract Amount: _____ Date Completed: _____

    Project: _____ Owner: _____

    Contract Amount: _____ Date Completed: _____

    Project: _____ Owner: _____

    Contract Amount: _____ Date Completed: _____

14. Is your Company "bondable"? Yes _____ No _____

15. What is your present bonding capacity? $ _____

16. Who is your bonding agent?

    NAME: _____

    ADDRESS: _____

    PHONE: (_____) _____

    CONTACT: _____

17. Does your company agree to provide financial reports to the University upon request? Failure to agree may result in disqualification of your bid? (select one): Yes _____ No _____

18. Does your company agree that all of the Terms and Conditions of this RFP and Vendor's Response Proposal become part of any ensuing agreement? (select one): Yes _____ No _____

19. Does your company agree to execute a contract containing the clauses shown in Section 00500 "Agreement between Contractor and Owner for Construction"? (select one): Yes _____ No _____

    If "No", clearly note any exceptions to any information contained in the contract documents and include with your proposal. Otherwise, a "No" response without documentation will be considered a non-responsive proposal. In addition, any proposed exceptions may or may not be accepted by the University.

20. Does your company agree to comply with the University **Smoke and Tobacco Free Policies**? Yes _____ No_____

Note: Contractors submitting proposals for this project may, at the discretion of the University, be required to submit references including contact information to be used to assist in the post bid evaluation process for the subject project

ACKNOWLEDGEMENT OF MINIMUM QUALIFICATIONS:

The undersigned has read and understands the minimum qualifications for University construction projects, and has completed the Prequalification section completely and accurately. The undersigned understands that a contractor, who fails to meet the minimum qualifications **in the category identified for this project, will be disqualified from consideration for the project**.

ACCEPTANCE OF PROPOSAL:

The undersigned agrees to execute a Contract, being the Wayne State University standard form titled "Agreement Between Contractor and Owner for Construction" (see section 00500 of the bid documents), provided that we are notified of the acceptance of our Proposal within sixty (60) days of the date set for the opening thereof.

The undersigned below understands that the bid will be disqualified if the Prequalification information above is not completed in its entirety.

NAME OF COMPANY: _____

OFFICE ADDRESS: _____

PHONE NUMBER: _____ DATE_____

SIGNED BY: _____
Signature

_____
(Please print or type name here)

TITLE _____

EMAIL ADDRESS: _____@_____

RESPONSIBLE CONTRACTOR POLICY *(revised 12-12-2023)*

1.0 Purpose

1.1 Wayne State University is committed to having responsible and ethical contractors and subcontractors on all of its construction projects, to ensure that work is performed by responsible, qualified firms that maintain the capacity, expertise, highly trained personnel, and other qualifications and resources necessary to successfully perform University projects in a safe, timely, reliable, high quality and cost-effective manner.

1.2 To achieve that goal, the University will require contractors and subcontractors submitting a bid on a construction project to provide information relating to their qualifications. The purpose of this policy is to assist the University in awarding contracts on every construction project to the lowest priced responsible bidder, or in the case of a major construction project using a criteria-based award, the responsible bidder who provides the best value to the University.

2.0 Definitions

2.1 A “major construction project” is a construction or other real property improvement or maintenance project whose planning and implementation require Board of Governors approval under Board Statute 2.81.01.090, “Capital Outlay”.

2.2 The term “contractor” includes general contractors, trade contractors, construction managers, and design builders, as well as any subcontractors.

3.0 Policy

3.1 Contractor Qualifications

The University will obtain information from and about the contractors on its major construction projects. Depending on the extent of the University's prior experience with a contractor, that information may include:

- The contractor's experience on projects of similar size and complexity.
- References from other owners.
- The contractor's creditworthiness/financial condition.
- The contractor's and any subcontractor’s safety records and prior history of OSHA/MIOSHA, environmental, or other regulatory violations, discrimination claims, criminal convictions, liens, compliance with applicable laws, and litigation (including arbitrations) with owners, contractors, subcontractors, unions, or employees.
- Qualifications of management and supervisory personnel to be assigned by the contractor to the project.
- Access to labor necessary for contract performance.

3.2 Contract Specifications

Contracts for the University's major construction projects will include terms requiring:

- Compliance with all applicable health, safety and environmental laws and regulations during performance of the contract, and timely provision to the University of copies of any complaint or allegation of a violation of any such regulation, and of any accident report, relating to work performed under the contract.
- Contractors and subcontractors to maintain and make available to the University, upon request, documentation of compliance with the University’s Wage Rate Requirements

(University Policy 18-2) and/or other applicable wage rate requirements, including certified payroll reports and complete payroll records.

- Training for all workers assigned to perform work under the project, including any required OSHA/MIOSHA training.
- Registration of apprentices in bona fide training programs.
- Contractors and subcontractors to implement and take steps to enforce a requirement that workers on the project be drug and alcohol free on the job site.
- Promotion of work force and contractor diversity to the fullest degree permitted by law, including prohibition of illegal discrimination and violation of any applicable University policy regarding discrimination.
- Promotion of competition through small business development, by encouraging opportunities for qualified new and small businesses, including those owned by women and minorities, to participate in work under the contract, as contractors, subcontractors, and suppliers.
- Contractors and subcontractors to carry appropriate liability insurance in amounts established by the University's Enterprise Risk Management & Insurance Programs office; to comply with Michigan law on worker's compensation; to provide bid, payment, and performance bonds for the completion of the contracted work; and to maintain these coverages through the period specified by the Enterprise Risk Management & Insurance Programs office.
- Compliance with licensing requirements applicable to those assigned to perform work under the contract.

3.3 Work Force Management

On its major construction projects, the University will seek evidence that each successful contractor is able to furnish skilled tradespersons and laborers (a) in numbers sufficient to complete the work under the contract on a timely and cost effective basis, and (b) who are able to work in harmony with the employees of other contractors or subcontractors performing work on that project in order to achieve its completion on a timely and cost effective basis.

In that regard, the University will not discourage a contractor from entering into a project labor agreement (PLA) for a construction project at the University when the contractor determines that a PLA is allowable under applicable laws and will enhance its ability to perform the work on the project. Further, the Senior Vice President, Chief Financial Officer and Treasurer is authorized to require the successful contractor to enter into a PLA when doing so would advance the University's project-specific interests in cost savings, efficiency, timeliness, or quality and would promote the University's goals set forth in this policy. The Senior Vice President, Chief Financial Officer and Treasurer should not require a contractor to enter into a PLA on any project or part of a project when doing so would violate applicable laws or would unreasonably restrict competition in the contracting or subcontracting process..

WAYNE STATE UNIVERSITY RATE SCHEDULE *(revised 11-01-2018)*

POLICY

Wayne State University requires all project contractors, including subcontractors, who provide labor on University projects to compensate at a rate no less than WSU wage rates.

The rates of wages and fringe benefits to be paid to each class of laborers and mechanics by each VENDOR and subcontractor(s) (if any) shall be not less than the wage and fringe benefit rates prevailing in Wayne County, Michigan, as determined by the United States Secretary of Labor. Individually contracted labor commonly referred to as "1099 Workers" and subcontractors using 1099 workers are not acceptable for work on any of Wayne State's properties. Rates for all counties are available at https://wdolhome.sam.gov/, and Procurement will post the schedules quarterly that pertain to Wayne County on its website at http://procurement.wayne.edu/vendors/wage-rates.php.

Certified Payroll must be provided for each of the contractor's or subcontractor's payroll periods for work performed on any University project. Certified Payroll must accompany Pay Applications, and be fully reconciled with the final Pay Application. Failure to provide certified payroll will constitute a material breach of contract, and pay applications will be returned unpaid, and remain unpaid until satisfactory supporting documents are provided.

Additional information can be found on the University Procurement & Strategic Sourcing's web site at the following URL address: http://procurement.wayne.edu/vendors/wage-rates.php

PROCEDURE

Construction Bids and other Bids or Proposals for work that includes construction shall contain a WSU Wage Rate clause outlining a contractor's responsibilities under University policy. Each bid solicitation shall include reference to the most current wage determination schedule that contractors can use when preparing their bids.

When compensation will be paid under WSU Wage Rate requirements, the University shall require the following:

- The contractor shall obtain and keep an accurate record showing the name and occupation of and the actual wages and benefits paid to each laborer and mechanic employed in connection with this contract.

- The contractor shall submit a completed certified payroll document [U.S. Department of Labor Form WH 347] verifying and confirming the WSU Wage and benefits rates for all employees and subcontractors for each payroll period for work performed on this project. The certified payroll form can be downloaded from the Department of Labor website at http://www.dol.gov/whd/forms/wh347.pdf.

- A properly executed sworn statement is required from all tiers of contractors, sub-contractors and suppliers which provide services or product of $10,000.00 or greater. Sworn statements must accompany applications for payment. All listed parties on a sworn statement as a subcontractor must submit Partial or Full Conditional Waivers for the amounts invoiced on the payment application. A copy of the acceptable WSU Sworn Statement and Waiver will be provided to the awarded contractor.

If the VENDOR or subcontractor fails to pay the WSU rates of wages and fringe benefits and does not cure such failure within 10 days after notice to do so by the UNIVERSITY, the UNIVERSITY shall have the right, at its option, to do any or all of the following:

- Withhold a portion of payments due the VENDOR as may be considered necessary by the UNIVERSITY to pay laborers and mechanics the difference between the rates of wages and fringe benefits required by this contract and the actual wages and fringe benefits paid.

- Terminate the contract and proceed to complete the contract by separate agreement with another vendor or otherwise, in which case the VENDOR and its sureties shall be liable to the UNIVERSITY for any excess costs incurred by the UNIVERSITY.

- Propose to the Associate Vice President for Business Services / Procurement that the Vendor be considered for Debarment in accordance with the University's Debarment Policy, found on our website at https://policies.wayne.edu/appm/2-8-debarment-policy-on-non-responsible-vendor-in-procurement-transactions

Terms identical or substantially similar to this section of this RFP shall be included in any contract or subcontract pertaining to this project.

Prior to award of the project, the apparent low bidder will be required to produce a schedule of values which will include the proposed subcontractors for each division of work and whether the subcontractor is signatory or non-signatory. A letter of intent or contract will not be issued to the apparent low bidder until this document is provided. The apparent low bidder will have one week to produce this document. If the required document is not received within this time, the bidder will be disqualified, and the next low bidder will be required to provide this schedule of values.

APPENDIX A FOR THE
WSU WAGE SCHEDULE FOR THIS PROJECT

See web site:

http://go.wayne.edu/bids

Key Performance Indicator Tracking
Sworn Statement Requirements

The University tracks it's level of spend along a number of socio-economic categories. This includes it's spend with Diverse organizations, it's spend with Detroit based organizations, and it's spend with Michigan based organizations. To assist with this, The University has the following requirements for submission of your bid and for Pay Applications submitted by the successful contractor**.**

Submission of Bid

1. **Diverse or disadvantaged prime contractor:** Please specify in your bid whether ownership of your company is a certified diverse or disadvantaged business, according to the categories listed previously in section 00300. In accordance with guidelines from the MMSDC and GL-WBC, the University considers a business to be diverse when it is at least 51% owned, operated, and controlled by one or more members of a diverse classification. Section 00300 has a place for this information on page 00300-3.

2. **Detroit based and Michigan Based contractor:** It is presumed that the contractor is headquartered at the location we submit our Purchase Orders to, and that it should be the same address as listed in Section 00300 at the signature line. If a supplier is headquartered elsewhere, please make note of this information, so we do not inaccurately include or exclude spend.

Pay Applications and Sworn Statements

1. **Applicability:** The University requires Sworn Statements with Pay Applications for all construction projects that use
   - Subcontractors greater than $10,000.00
   - Significant suppliers (those with a purchase value of $10,000 or more).

2. **Sworn Statements:** The Supplier must submit applicable monthly sworn statements to the Project Manager and the Buyer of Record, in the format shown on page 2 of Section 00420. Sworn Statements are "always required" for this project, and are to be submitted to ***(Project_Manager),*** the project manager, and to **Valerie Kreher**, **Senior Buyer**

3. **Inclusion**: Sworn Statements are to detail the inclusion of recognized diverse and disadvantaged groups in the following 2 categories; Subcontracts or Suppliers. The University recognizes the following groups as diverse or disadvantaged:

   - Minority Business Enterprises (MBE)
   - Women Business Enterprises (WBE)
   - Disabled Veteran Enterprises (DVBE)
   - Disabled Person Enterprises (DBE)
   - Veteran Owned Businesses (VBE)
   - Small Businesses per the US Small Business Administration (SBE)

   1.

4. A complete set of the University's Supplier Diversity Program, which includes complete definitions of each of the above, can be downloaded from our web site at **http://policies.wayne.edu/administrative/04-02-supplier-diversity.php**.

STATE OF MICHIGAN

Sworn Statement

COUNTY OF _____ } §

_____ , being duly sworn, deposes and says that (s)he makes the Sworn Statement on behalf of _____, who is the Contractor for an improvement to the following described real property situated in _____ County, Michigan, and described as follows:

That the following is a statement of each subcontractor and supplier and laborer, for which laborer the payment of wages or fringe benefits and withholdings is due but unpaid, with whom _____ has subcontracted for performance under the contract with the Owner or lessee thereof, and that the amounts due to the persons as of the date thereof are correctly and fully set forth opposite their names, as follows. (Subcontracts or suppliers of values of less than $1,000 are omitted.)

NO.	SUBCONTRACTOR (Name, Address, Telephone Number) SUPPLIER OR LABORER	S=Supplier C=Contractor	Type of Entity *see below	TYPE OF IMPROVEMENT FURNISHED	TOTAL CONTRACT PRICE	CONTRACT CHANGE +/-	ADJUSTED CONTRACT AMOUNT	AMOUNT PAID TO DATE	AMOUNT CURRENTLY OWING	BALANCE TO COMPLETE
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12	_____ _____									
				TOTALS						

* Type of Entity: MBE=Minority Business Enterprises; WBE=Women Business Enterprises; DVBE=Disabled Veteran Enterprises; DBE=Disabled Person Enterprises; VBE=Veteran Owned Businesses; SBE=Small Businesses per the US Small Business Administration

Please attach additional sheets if the number of items exceeds the page limit.

That has not procured material from, or subcontracted with, any person other than those set forth above and owes no money for the improvement.

Deponent further says that _____ makes the foregoing statement as a representative of _____, for the purpose of representing to the owner or lessee of the above-described premises and his or her agents that the above-described property is free from claims of construction liens, or the possibility of construction liens, except as specifically set forth above and except for claims of construction liens by laborers which may be provided pursuant to section 109 of the construction lien act, Act No. 497 of the Public Acts of 1980, as amended, being section 570.1109 of the Michigan Compiled Laws.

_____
Deponent Signature

WARNING TO OWNER: AN OWNER OR LESSEE OF THE ABOVE-DESCRIBED PROPERTY MAY NOT RELY ON THIS SWORN STATEMENT TO AVOID THE CLAIM OF A SUBCONTRACTOR, SUPPLIER, OR LABORER WHO HAS PROVIDED A NOTICE OF FURNISHING OR A LABORER WHO MAY PROVIDE A NOTICE OF FURNISHING PURSUANT TO SECTION 109 OF THE CONSTRUCTION LIEN ACT TO THE DESIGNEE IS NOT NAMED OR HAS DIED.

ON RECEIPT OF THIS SWORN STATEMENT, THE OWNER OF LESSEE, OR THE OWNER'S OR LESSEE'S DESIGNEE, MUST GIVE NOTICE OF ITS RECEIPT, EITHER IN WRITING, BY TELEPHONE, OR PERSONALLY, TO EACH SUBCONTRACTOR, SUPPLIER AND LABORER WHO HAS PROVIDED A NOTICE OF FURNISHING UNDER SECTION 109 OR, IF A NOTICE OF FURNISHING IS EXCUSED UNDER SECTION 108 OR 108A, TO EACH SUBCONTRACTOR, SUPPLIER OR LABORER WHO HAS PROVIDED A NOTICE OF FURNISHING OR WHO IS NAMED IN THE SWORN STATEMENT MAKES A REQUEST, THE OWNER, LESSEE, OR DESIGNEE SHALL PROVIDE THE REQUESTER A COPY OF THE SWORN STATEMENT WITHIN 10 BUSINESS DAYS AFTER RECEIVING THE REQUEST.

WARNING TO DEPONENT: A PERSON, WHO WITH INTENT TO DEFRAUD, GIVES A FALSE STATEMENT IS SUBJECT TO CRIMINAL PENALTIES AS PROVIDED IN SECTION 110 OF THE CONSTRUCTION LIEN, ACT, ACT NO. 497 OF THE PUBLIC ACTS OF 1980, AS AMENDED, BEING SECTION 570.2220 IF THE MICHIGAN COMPILED LAWS.

(NOTARY STAMP BELOW)

Subscribed and sworn to before me this _____ day of _____

Notary Public _____

_____ County, Michigan - My commission expires: _____

Rev.4 06.05.15

WAYNE STATE UNIVERSITY
PAYMENT PACKAGE DOCUMENT REQUIREMENTS *(Revised 7-23-2015)*:

Review and comply with Section 410 of Bid Front End Documents.
Review and comply with Article 15 of the Supplemental General Conditions.

PAYMENT APPLICATION - AIA document G702 & G703 (or equivalent) –Checklist:

- Correct Project Name – Found on your contract.
- Correct Project Number – Found on your contract.
- Purchase Order Number – Required prior to beginning work.
- Correct Application Number.
- Correct Period Reporting Dates – Applications support docs must be sequential and within application range.
- Approved & Executed Change Orders Listed. (Cannot invoice for unapproved Change Orders)
- Schedule of Values percentages and amounts match the approved Pencil Copy Review – Signed by the Architect, Contractor, and University Project Manager.
- Correct Dates – Back dating not accepted.
- Signed and Notarized.

SWORN STATEMENT – Checklist:

- List all contractors, sub-contractors, suppliers… ≥ $10,000.00
- A sworn statement is required from every Sub Contractor on the job with a material purchase or sub-contract of $10,000 or more. (All tiers.)
- Purchase Order Number
- Dates – Back dating not accepted.
- Signed and Notarized.

CERTIFIED PAYROLL - Dept. of Labor Form WH-347 – Checklist: (Union and Non-Union)

- For every contractor & sub-contractors work, for each week within the application reporting period.
- Correct Project Number
- List ALL workers on-site.
- Make sure their addresses are listed.
- Social Security Numbers MUST be blackened out or listed in XXX-XX-1234 format.
- Work classifications based on the job specific WSU Wage Schedule descriptions.
- For any workers paid at the Apprenticeship rates - proof of enrolled program and current completion required.
- Rate of Pay verified against the WSU Wage Schedule with an hourly cost breakdown of fringes paid.
- Authorized signatures on affidavit.
- Dates – must represent the weeks within the application period.

APPLICATION PACKAGE SUPPORTING DOCUMENTATION –

- ***Proof of Ownership*** for any 'Owner Operator' contractors not wishing to claim their time on WSU Wage. – (Must list their hours and dates worked on the WH-347 Form and enter EXEMPT on the income brackets.) The Owner must provide copies of "DBA" registration form confirming status as exempt from WSU Wage requirements.

- ***Proof of Stored Materials*** – Bill of Lading, Delivery Receipts, Pictures, Certificate of Insurance or endorsement pate specifically insuring stored material at location, and pictures with materials clearly

separated and labeled for WSU. The University reserves the right to on site verification of stored materials.

- ***Partial Conditional Waivers*** – The contractor shall provide covering the entire amount of the application. For non-bonded projects all sub-contractors must provide for all applications which they have a draw.

- ***Partial Unconditional Waivers*** – Must release amount paid for work and be delivered starting with application #2 and in no case after payment application #3, through all sequential applications for contractors, sub-contractors, and suppliers listed on the Sworn Statements.

- ***Full Unconditional Waivers*** – Must be delivered with final payment application, releasing all contractors, sub-contractors, suppliers listed on the sworn statements and any legitimate notice of furnishings reconciled.

FINAL PAYMENT APPLICATION – Checklist:

- Clear and concise As-Built drawings.
- Operation and Maintenance Manuals
- Process and training directions (if applicable).
- Warranty of work in accordance with project documents.
- Submittals log and samples installed on the job.
- Certificate of Substantial Completion
- Full Unconditional Waiver
-

The Project Manager may provide additional requirements as may apply to individual jobs

Revised 11-01-2018

Contractor Performance Evaluation

In an effort to provide continuous process improvement regarding the construction of various university projects, Wayne State University is embarking upon a process of evaluating the contractor's overall performance following the completion of work. At the conclusion of the construction project a subjective evaluation of the Contractor's performance will be prepared by the Project Manager and the supervising Director of Construction. The evaluation instrument that will be used in this process is presented below:

Contractor Evaluation Sheet

Contractor Name : _____ Project Name: _____

Contractor's PM:_____ PM Name:_____

Superintendent:_____ Project Number:_____ PO#:_____

Designer:_____

EVALUATION SCORING: 1 = Unacceptable, 2 = Less than Satisfactory, 3 = Satisfactory or Neutral, 4 = Good, 5 = Excellent

Note: Comments are REQUIRED if any score is less than 3. Write comments on the back of the evaluation.

		Score					Weight	Total
Field Management								
1)	Work Planning / Schedule:	1	2	3	4	5	8	
2)	Compliance with Construction Documents:	1	2	3	4	5	8	
3)	Safety Plan & Compliance:	1	2	3	4	5	5	
4)	Compliance with WSU procedures:	1	2	3	4	5	7	
5)	Effectiveness of Project Supervision:	1	2	3	4	5	8	
6)	Project Cleanliness:	1	2	3	4	5	3	
7)	Punch List Performance:	1	2	3	4	5	5	
8)	Contractor Coordination with WSU Vendors:	1	2	3	4	5	3	
9)	Construction Quality:	1	2	3	4	5	8	
Administrative Management								
10)	Responsiveness:	1	2	3	4	5	4	
11)	Contractor communication:	1	2	3	4	5	4	
12)	Contractor Professionalism:	1	2	3	4	5	3	
13)	Subcontractor Professionalism:	1	2	3	4	5	3	
14)	Compliance with Contract Requirements:	1	2	3	4	5	3	
15)	Submittal\RFI Process:	1	2	3	4	5	4	
16)	Close-out - Accuracy of Documents	1	2	3	4	5	7	
Invoice and Change Management								
17)	Change Management	1	2	3	4	5	7	
18)	Applications for Payment	1	2	3	4	5	6	
19)	Timely payment of Subs/Suppliers:	1	2	3	4	5	4	
							Total 100	**Total**
20)	Level of Self-Performance:	Low		Med		High		
21)	Would you work with this Contractor again?			Yes		No		
22)	Would you work with this team again?			Yes		No		
One year follow up								
23)	Warranty Support:	1	2	3	4	5		

Evaluator

Signature_____ Date: _____

Title:

Name:

Please Print

Rev. 2-17-2015 RGP

We are providing the evaluation instrument at this time to allow the bidder's to review and understand the criterion that the University's project management team will use to evaluate the successful bidder's performance at the conclusion of the project. It is the intent of the university to utilize the results of this evaluation to determine if it will continue to conduct business with the Contractor in future bidding opportunities.

The scoring range is between 100 to 500 points, with 100 being low and 500 being high. Each question has an associated 'weight' factor, and the higher the weight; the greater the importance of satisfactory performance on the final score. At the conclusion of the project, and after the Project Manager and the supervising Director has prepared their independent evaluation, the University's project representative will meet with the Contractor to review the results. Acceptable contractor performance is essential to avoid having the University decline future work with the Contractor. An appeals process is available for Contractor disagreement with evaluation scores.

Contractors engaged in work are encouraged to maintain an open and regular dialog with the Design and Construction Department over the course of the construction project to ensure that the final evaluation is an accurate representation of the Contractor's performance.

CONSOLIDATED AGREEMENT FOR CONSTRUCTION GENERAL CONTRACTING

BOARD OF GOVERNORS OF WAYNE STATE UNIVERSITY
DETROIT, MICHIGAN

With

[GENERAL CONTRACTOR'S NAME]

For

[NAME PROJECT]

Wayne State University Contract Number _____

This Agreement is entered into on _____, 20__, by and between the Board of Governors of Wayne State University, called "University" in this Agreement, and [CONTRACTOR NAME], called "Contractor" in this Agreement, to provide construction labor and materials as outlined in the Bid accepted [ENTER DATE HERE], attached to this Agreement as Exhibit A, for the Project described in this Agreement.

[ENTER A BRIEF DESCRIPTION OF THE PROJECT]

1.00 CONTRACT DOCUMENTS

The Contract Documents shall consist of this Agreement, the Contractor's Bid or Proposal attached to this Agreement as Exhibit A only insofar as consistent with the other Contract Documents, the General Conditions of Construction, the Supplementary General Conditions, the approved plans and specifications, and other documents listed in Article 11, Inclusion by Reference. In the case of conflicts between the Contractor's Bid and this Agreement or other Contract Documents, the language of this Agreement and the other Contract Documents shall prevail over the Contractor's Bid or Proposal.

2.00 DESIGN PROFESSIONAL

The Design Professional for this Project is:

[NAME]
[ADDRESS]

The University intends that the relationship between the Contractor, Design Professional and University will be one of mutual cooperation and respect in order to promote efficiency and quality in the Project work.

3.00 CONTRACTOR'S RESPONSIBILITIES

3.01 Scope of Work

The Contractor shall furnish all labor, materials, equipment, project management and construction superintendent services necessary to construct the Work in accordance with the approved Contract Documents and executed Change Orders, including requirements reasonably inferable therefrom.

3.02 Skill and Judgment

The Contractor covenants with the University to furnish its best skill and judgment in furthering the interests of the University as defined in the Contract Documents. The Contractor shall perform all obligations under the Contract Documents using efficient business administration, superintendence and best efforts to facilitate the expeditious and timely completion of the Project consistent with the interests of the University as expressed in the Contract Documents. The Contractor acknowledges that significant effort will be invested in complying with the Contractor's Construction Schedule, and in maintaining construction quality. Accordingly, the Contractor further acknowledges that the greatest degree of professionalism is expected from the Contractor and the Design Professional in accomplishing their respective contractual obligations and that when potential conflicts exists, each shall demonstrate appropriate respect, professionalism and cooperation with each other in resolving such conflicts.

3.03 Scheduling

The Contractor shall develop a Contractor's Construction Schedule that clearly indicates the interrelationship of activities and defines the critical path of the entire Project. The Contractor shall submit a preliminary Contractor's Construction Schedule, by the earlier of fifteen (15) days from either the Notice to Proceed or the execution of this Agreement. The Contractor shall provide iterative updates to the Contractor's Construction Schedule with each Application for Payment, but no less than monthly. Upon request by the University, the Contractor shall prepare and submit a resource-loaded Contractor's Construction Schedule to the University and Design Professional for approval.

3.04 Construction

3.04.1 Subcontracts and Purchase Agreements

The Subcontracts shall be solely between the Contractor and the Subcontractors. Nothing in any Subcontract shall establish any contractual relationship between the University and any Subcontractor. However, the University is an intended third-party beneficiary of all Subcontracts, purchase orders and other agreements; the Contractor shall incorporate the obligations of the Contract Documents into its respective Subcontracts, supply agreements and purchase orders.

The Contractor will screen and pre-qualify, utilizing appropriate industry standards, potential Subcontractors for the Work keeping in mind the requirement to recruit and encourage Minority/Women Business Enterprise participation. The University shall have the right to review and approve all Subcontractors qualified or rejected for qualification by the Contractor. The Contractor shall notify the University of all Subcontractors to be used, and the Contractor shall remove any Subcontractor to which the University has an objection.

The Contractor shall obtain appropriate guarantees and warranties acceptable to the University from the Subcontractors, which shall be for the direct benefit of the University.

3.04.2 Construction Supervision

a) The Contractor shall establish sufficient on-site organization, staffing and support as well as clear lines of authority in order to expeditiously complete the Project in accordance with the Contract Documents, in every aspect, on a totally coordinated basis.

b) The Contractor shall maintain a competent full-time staff available at the site while Work is being performed to supervise, schedule and coordinate the performance of the Work of all Subcontractors in accordance with the University's objectives including cost, time for completion and quality of the Work. Contractor's Staffing Plan is attached as Exhibit D to this Agreement. The Staffing Plan shall not be changed, except with the written consent of the University's Representative unless members of the Project Staff cease to be in the employ of the Contractor.

c) The Contractor shall notify the University of the dates, times and locations of conferences with Subcontractors and schedule and conduct regular progress meetings to be attended by all parties in interest including the University to discuss such matters as procedures, progress, job problems, scheduling, coordination, changes, and related matters.

d) The Contractor shall take, transcribe and promptly distribute to all parties, including the University, minutes of such progress meetings with the Subcontractors, weekly job meetings and monthly management meetings.

e) The Contractor shall maintain an on-site daily log of construction progress, problems and items of special interest. The Contractor shall provide digital photographic files and digital recording showing Project status or progress. Such logs, records, photographs and videos shall be immediately available to the University upon request.

f) The Contractor shall furnish monthly written progress reports on the Subcontractors' work in a form acceptable to the University and assist the Design Professional and the University with periodic and final inspections of the Work. At all inspections preceding the final inspection, the Contractor shall furnish a detailed report to the University of observed discrepancies, deficiencies, and omissions in the Work performed by any Subcontractor.

g) The Contractor shall provide and maintain a correct layout of the structures and monitor the Work to verify that all lines and levels are adhered to by the Subcontractors. The Contractor shall immediately report in writing all discrepancies with respect to design details for prompt resolution by the Design Professional.

h) The Contractor shall submit any Request for Information (RFI) to the Design Professional and University only after attempting to determine if the requested clarification is contained in the Contract Documents; any RFI shall contain sufficient detail to allow a response within seven (7) calendar days of when the RFI is submitted. In no event shall the response to an RFI be considered delayed unless more than fourteen days have passed since the RFI was submitted.

i) The Contractor shall supervise and direct the Work using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract Documents or that which is reasonably inferable for the completion of the Project.

j) The Contractor shall be responsible to the University for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons performing any portion of the Work related to a contract with the Contractor.

k) The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities of the University, Design Professional, or by tests, inspections or approvals required or performed by persons other than the Contractor, except where such relief is authorized by the University in writing in accordance with this Agreement.

l) The Contractor shall inspect portions of Work performed or portions of existing facilities being renovated in this Project to determine that such portions are in proper condition to receive subsequent Work. Further, the Contractor shall plan for and call for the review of the Work by the University's commissioning agents as required. The Contractor's Construction Schedule shall include activities that recognize this coordination responsibility.

3.04.2.1 Safety

The Contractor shall protect adjoining property and nearby buildings, roads, and other facilities and improvements from dust, dirt, debris and other nuisances arising out of Contractor's operations or storing practices. Dust shall be controlled by sprinkling, negative pressure exhausting or other effective methods acceptable to University. Fugitive dust from interior demolition shall be controlled by negative pressure exhausting. An erosion and sedimentation control program shall be initiated, which includes measures addressing erosion caused by wind and water and sediment in runoff from site. A regular watering program shall be initiated to adequately control the amount of fugitive dust.

The Contractor is knowledgeable of and understands that the University may intend to maintain occupancy of certain portions of the existing facility. The Contractor shall exercise precaution at all times for the protection of persons and their property. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (1) employees on the Work and other persons who may be affected thereby; (2) the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody or control of the Contractor or the Contractor's subcontractors or sub-subcontractors; and (3) other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall install adequate safety guards and protective devices for all equipment and machinery, whether used in the Work or permanently installed as part of the Project.

The Contractor shall also provide and adequately maintain all required means of egress, including but not limited to, proper temporary walks, roads, guards, railings, lights, and warning signs. The Contractor shall comply with all applicable laws relating to safety precautions. The Contractor shall establish, maintain and update a Project Specific Safety Program.

The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the University and Design Professional.

The Contractor shall require each and every one of its subcontractors and Trade subcontractors to comply with all of the provisions of this section.

The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in the Contract.

3.04.2.2 Hazardous Condition

The University and/or the Design Professional may bring to the attention of the Contractor a possible hazardous situation in the field regarding the safety of personnel on the site. The Contractor shall be responsible for verifying that all local, state, and federal workplace safety guidelines are being observed. In no case shall this right to notify the Contractor absolve the Contractor of its responsibility for monitoring safety conditions. Such notification shall not imply that anyone other than the Contractor has assumed any responsibility for field safety operations.

Explosives shall not be used without first obtaining written permission from the University and then shall be used only with the utmost care and within the limitations set in the written permission and in accordance with prudence and safety standards required by law. Storage of explosives on the Project site or University is prohibited. Powder activated tools are not explosive for purposes of this Article; however, such tools shall only be used in conformance with State safety regulations.

The Contractor shall immediately make a report to the University's Police Department and report in writing to the University's Representative, within eight (8) hours, all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether on or off the Site but on University property, which caused death, personal injury or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall report promptly the facts in writing to the University's Representative, giving full details of the claim.

3.04.2.3 University's Right to Stop the Work

If the Contractor fails to correct work which is not in accordance with the requirements of the Contract Documents as required, or persistently fails to carry out work in accordance with the Contract Documents, the University Representative, by written order may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the University to stop the Work shall not give rise to a duty on the part of the University to exercise this right for the benefit of the Contractor or any other person or entity.

It is understood that while the Contractor is fully responsible for the safety of the Work, and for the methods of its execution, if the University deems that the Contractor is failing to provide safe conditions, the University may stop the Work under such conditions. However, this ability shall not create such duty on the University. Under no circumstance shall the Contractor be granted a time extension or Contract Sum increase for conditions resulting by a stop work order.

3.04.2.4 University's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a three (3) day period after receipt of written notice from the University to commence and continue correction of such default or neglect with diligence and promptness, the University may after such three (3) day period, without prejudice to other remedies the University may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Design Professional's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the University.

3.04.3 Document Management

The Contractor shall maintain at the job site, on a current basis, all Project documents including plans, specifications, shop drawings, samples, submittal, purchase orders, Subcontracts, material specifications, and any other related documents, and revisions thereto, which arise out of or relate to the Project, this Agreement or the Work. Prior to final payment, copies of all such records shall be provided to the University.

The Contractor shall be responsible for reviewing, processing and paying applications by Subcontractors for progress and final payment. The University will compensate the Contractor monthly based on the requirements of Article 4.04, Application For Payment.

The Contractor shall prepare and submit to the University every three months a report of the total M/WBE participation in the Project to demonstrate compliance with Paragraph 3.04.6 together with a projection of M/WBE participation through Final Completion.

3.04.3.1 Review of Contract Documents and Field Conditions by Contractor

Execution of the Contract by the Contractor is a representation that the Contractor shall have thoroughly and carefully examined the site of the of Work, investigated any and all conditions which can affect the Work or its cost, including but not limited to, availability of labor, materials, supplies, water, electrical power, roads, access to the site, University episodic and scheduled closures, uncertainties of weather, water tables, the character of equipment and facilities needed to perform the Work, and local conditions under which the Work is to be performed; and further, that the Contractor shall insure that the documents issued for bidding by Trade Contractors reflect the results of this investigation and are adequate to complete the Work. It is the responsibility of the Contractor to be familiar with the materials, equipment, or procedures to be used in the Work, or which in any other way could affect the completion of the Work. Any failure to properly familiarize themselves with the proposed Work shall not relieve the Contractor from the responsibility for completing the Work in accordance with the Contract Documents.

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Project. Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to be consistent with the Contract Documents and the highest standard of care. In the case of an inconsistency between, or perceived omission or error in the Drawings, Specifications, or other Contract Documents which is not clarified by addendum or RFI, or should the Contractor be in doubt as to their exact meaning, the Contractor shall notify

the Design Professional and the University prior to performing any related Work. The University shall not be responsible for the Contractor's misinterpretations of Drawings and Specifications and/or other Contract Documents.

The Contractor shall have a continuing duty to read, carefully study and compare the Contract Documents and product data with each other and with information furnished by the University, and shall at once report to the Design Professional and the University errors, inconsistencies, ambiguities and omissions before proceeding with the affected Work. The Contractor shall be liable to the University for damage resulting from errors, inconsistencies or omissions in the Contract Documents, relating to constructability if the Contractor recognized or should have recognized such error, inconsistency, ambiguity or omission and failed to report it to the Design Professional and the University. If the Contractor performs any construction activity which involves such error, inconsistency, ambiguity or omission in the Contract Documents relating to constructability, without such notice to the Design Professional and the University, the Contractor shall assume responsibility for such performance and shall bear all costs attributable for correction. If the Contractor submits authorized substitutes that cost in excess of the Contract Sum which cause coordination conflicts, the Contractor shall bear all costs attributable to correction.

The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Design Professional prior to performing any affected Work.

The Contractor shall perform the Work in accordance with the Contract Documents.

3.04.4 Cash Flow Estimates and Cost Control

At the University's request, the Contractor shall prepare a Cash Flow Estimate indicating the anticipated schedule of payment application amounts within fifteen (15) days after the Contractor's Bid has been accepted. The Cash Flow Estimate shall be revised periodically, at least every three months, unless significant deviations are expected or otherwise more frequently as requested by the University.

The Contractor shall review requests for changes with the University, and with the University's approval, obtain quotations from affected Subcontractors. Bulletins to Subcontractors shall define the scope of the change and require pricing using either lump sum, time and materials or cost of Work for all items of Work, including overhead and profit as may be defined in the Bid and this Agreement and shall include costs related to schedule delays, if applicable. Where both additions and deductions are involved, each should be calculated separately. Contractor shall be responsible for reviewing the pricing submitted by Subcontractors for accuracy, completeness, and reasonableness.

3.04.5 Minority/Women Business Enterprise Participation

The University makes a continuous effort to strongly encourage Minority Business Enterprise (MBE) and Women Business Enterprise (WBE) contractors and supplier to bid on and participate in University contracts. To the fullest extent permitted under federal and Michigan law, you are strongly encouraged to retain the services of WBE and MBE Subcontractors and suppliers of goods and services in connection with performance of this Contract. For purposes of this Contract, MBE is defined as a business entity in which 51% or minority individuals hold more of the voting shares and interest in the enterprise. The minority ownership of the enterprise shall have management and investment control of the company. WBE is defined as a business entity in which 51% or a woman or women hold more of the voting shares and interest in the enterprise. The female ownership of the enterprise shall have management and investment control of the company.

3.04.7 Time of Completion

The Contractor acknowledges that time is of the essence in performing and completing the Work on the Project. Accordingly, the Contractor shall comply with the activity and milestone completion dates as defined in the Contractor's Construction Schedule as mutually agreed by the Contractor, the University and the Design Professional. The Contractor shall provide, prepare and/or participate in developing schedules, submittals, shop drawings, construction schedules, close out documents, or other activities consistent with the conditions of the Contract Documents and as set forth below:

A. Substantial Completion: [ENTER COMPLETION DATE]

B. Punchlist Completion: [ENTER COMPLETION DATE]

C. Final Completion: [ENTER COMPLETION DATE]

3.04.8 Timely Completion

Contractor acknowledges that the University has scheduled use of the Project immediately following the Dates of Substantial Completion. In scheduling that use, the University may have signed contracts and otherwise made financial commitments relating to the use of the Project no later than the date of Substantial Completion. In the event that the Contractor fails to complete on or before the date for Substantial Completion, the Contractor shall be responsible to reimburse the University for all direct, indirect and administrative costs and expenses incurred in locating, coordinating and securing alternate sites, refunding deposits, and taking any other reasonable action as a consequence of the Contractor's failure to achieve Substantial Completion by the date stated in this Agreement.

The University shall be entitled to retain from the Contractor those damages incurred upon the Contractor's default of Substantial Completion, as provided above.

The Contractor further agrees to complete 100% of all punchlist items, documented on the Substantial Completion certificate, within forty-five (45) days of the date of Substantial Completion. Nothing in this Article 3.04.08 shall be construed as a limitation or waiver on such other rights as the University may have.

3.04.8.1 Substantial Completion

"Substantial Completion" shall mean the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the University can occupy or utilize the Work for its intended use. Substantial Completion shall only be determined as described in the Contract Documents.

3.04.8.2 Final Completion

"Final Completion" means the completion of all the Work in accordance with the Contract Documents and the acceptance thereof by the University. Completion of the Work includes (1) full performance of all Contract terms; (2) acceptance of the Work by University; (3) resolution of all outstanding Changes of Contract; (4) completion of all "punch-list" items; and (5) delivery of all Close-out Documents.

3.05 Contractor's Insurance

The Contractor shall not commence Work under this Contract until it has obtained all the insurance required by the Contract Documents and such insurance has been approved by the University; likewise, no subcontractor or subconsultant shall be allowed to commence Work until the insurance required has been

obtained. The Contractor shall, at its expense, purchase and maintain in full force and effect such insurance as will protect itself and the University from claims, such as for bodily injury, death, and property damage, which may arise out of or result from the Work required by the Contract Documents, whether such Work is done by the Contractor, by any subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The types of such insurance and any additional insurance requirements are specified herein with the amounts and limits set forth in the Supplementary General Conditions.

3.05.1 Policies and Coverage

The following policies and coverages shall be furnished by the Contractor promptly upon request by the University:

(1) Comprehensive or Commercial Form General Liability Insurance covering all Work done by or on behalf of the Contractor and providing insurance for bodily injury, personal injury, property damage, and Contractual liability. Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limit shall apply separately to work required of the Contractor by these Contract Documents. This insurance shall include the contractual obligations assumed under the Contract Documents and specifically section 4.06.

(2) Business Automobile Liability Insurance on an "Occurrence" form covering owned, hired, leased, and non-owned automobiles used by or on behalf of the Contractor and providing insurance for bodily injury, property damage, and Contractual liability.

(3) Worker's Compensation and Employer's Liability Insurance as required by Federal and Michigan law. The Contractor shall also require all of its Subcontractors to maintain this insurance coverage.

(4) The Umbrella Excess Liability insurance must be consistent with and follow the form of the primary policies, except that Umbrella Excess Liability insurance shall not be required for the Medical Expense Limit.

(5) Builder's Risk Insurance.

(6) Professional Liability Insurance (Errors and Omissions).

3.05.2 Proof of Coverage

Certificates of Insurance, or other evidence of the insurance required by these Contract Documents or requested by the University, shall be submitted by the Contractor to the University. The Certificates of Insurance shall state the scope of coverage and deductible, identify any endorsements to the policies and list the University as an additional named insured. Any deductible shall be the Contractor's liability. The Certificates of Insurance shall provide for no cancellation or modification of coverage without thirty (30) days prior written notice to the University. Acceptance of Certificates of Insurance by the University shall not in any way limit the Contractor's liabilities under the Contract Documents. In the event the Contractor does not comply with these insurance requirements, the University may, at its option, provide insurance coverage to protect the University; the cost of such insurance shall be deducted from the Contract Sum or otherwise paid by the Contractor. Renewal certifications shall be filed in a timely manner for all coverage until the Project is accepted as complete. Upon the University's request, the Contractor shall provide copies of the policies obtained from the insurers.

3.05.3 Subcontractor's Insurance

The Contractor shall either require subcontractors to carry the insurance or the Contractor shall insure the activities of the subcontractors in the amount, types and form of insurance required by the Contract

Documents. If the Contractor elects to have its subcontractors purchase individual insurance policies, the Contractor's subcontracts shall include a clause requiring that copies of any insurance policies which provide coverage to the Work shall be furnished to the University. The Contractor shall supply the University with a list of all subcontractors showing whether or not they have individual insurance policies and certifying that those subcontractors without individual insurance policies are insured by the Contractor.

3.05.4 Scope of Insurance Coverage

The Contractor's insurance as required by the Contract Documents (including subcontractors' insurance), by endorsement to the policies and the Certificates of Insurance, shall include the following and may be presented in the form of a rider attached to the Certificates of Insurance:

(1) The Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents including the Design Professional, shall be included as additional named insureds for and relating to the Work to be performed by the Contractor and subcontractors. This shall apply to all claims, costs, injuries, or damages.

(2) A Severability of Interest Clause stating that, "The term 'insured' is hereby used severally and not collectively, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurer's or insurers' liability."

(3) A Cross Liability Clause stating that, "In the event of claims being made under any of the coverages of the policy or policies referred to herein by one or more insured hereunder for which another or other insured hereunder may be liable, then the policy or policies shall cover such insured or insured against whom a claim is made or may be made in the same manner as if separate policies had been issued to each insured hereunder. Nothing contained herein, however, shall operate to increase the insurer's limits of liability as set forth in the insuring agreements."

(4) The Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents, shall not by reason of their inclusion as insured incur liability to the insurance carriers for payment of premiums for such insurance. However, the Board of Governors of Wayne State University may, in their sole discretion after receiving a notice of cancellation for nonpayment, elect to pay the premium due and deduct such payment from any sums due to the Contractor or recover the amount paid from the Contractor if the sums remaining are insufficient.

(5) Coverage provided is primary and is not in excess of or contributing with any insurance or self-insurance maintained by the Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents.

3.05.5 Miscellaneous Insurance Provisions

The form and substance of all insurance policies required to be obtained by the Contractor shall be subject to approval by the University. All such policies shall be issued by companies lawfully authorized to do business in Michigan and be acceptable to the University. All property insurance policies to be obtained by the Contractor shall name the University as loss payee as its interest, from time to time, may appear.

The Contractor shall, by mutual agreement with the University and at the University's cost, furnish any additional insurance as may be required by the University. The Contractor shall provide appropriate endorsements evidencing such additional insurance.

In the event that the scope of Work includes asbestos abatement, the Contractor or subcontractor, as appropriate, shall provide $1,000,000 asbestos liability insurance.

The University is not required to provide or purchase any additional insurance with respect to this Project or the Work required of the Contractor for the Project.

3.05.6 Loss Adjustment

Any insured loss is to be adjusted with the University and made payable jointly to the University and the Contractor. The Contractor shall cooperate with the University in a determination of the actual cash value or replacement value of any insured loss. Any deductible amount shall be the responsibility of the Contractor to resolve.

3.05.7 Compensation Distribution

The University upon the occurrence of an insured loss shall account for any money so received and shall distribute it in accordance with such agreement as the interested parties may reach. Claim payments received shall be distributed proportionately according to the actual percentages of losses to both. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate contract change order. Any dispute shall be resolved by the University.

3.05.8 No Waiver of Subrogation

The University does not waive any rights of Subrogation that it may possess on this Project.

3.06 Indemnification

3.06.1

To the fullest extent permitted by law, the Contractor shall hold harmless, defend, and indemnify the Board of Governors of Wayne State University, the University, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or are alleged to be resulting from, or relating to (1) the failure of the Contractor to perform its obligations under the Contract or the performance of its obligation in a willful or negligent manner; (2) the inaccuracy of any representation or warranty by the Contractor given in accordance with or contained in the Contract Documents; and (3) any claim of damage or loss by any subcontractor, or supplier, or laborer against the University arising out of any alleged act or omission of the Contractor or any other subcontractor, or anyone directly or indirectly employed by the Contractor or any subcontractor.

3.06.2

To the fullest extent permitted by law, the Contractor shall be liable for and hereby agrees to defend, discharge, fully indemnify and hold the University harmless from and against any and all claims, demands, damages, liability, actions, causes of action, losses, judgments, costs and expenses of every nature (including investigation costs and/or expenses, settlement costs, and attorney fees and expenses incident thereto) sustained by or asserted against the University arising out of, resulting from, or attributable to the performance or nonperformance of any Work and/or obligation covered by the Contract or to be undertaken in connection with the construction of the Project contemplated by the Contract (collectively, "Claim"), including, but not limited to, any Claim for: (a) any personal or bodily injury, illness or disease, including death at any time resulting therefrom of any person, (including, but not limited to, employees of the University, the Contractor, any subcontractor, and any materialman and the general public); (b) any loss, damage or destruction of any property; (c) any loss or damage to the University's operations, arising out of, resulting from, or attributable in whole or in part to (i) any negligence or other act or omission of the Contractor, and any subcontractor, any materialman and/or any other person or any of the directors, officers, employees or agents of any of them or (ii) any defects in material or equipment furnished hereunder; (d) any payments allegedly owed to subcontractors, sub-subcontractors or materialmen; (e) any acts or omissions relative to

conditions of safety and protection of persons on the Project site; and/or (f) any act or omission relative to the Contractor's breach of obligations and regarding non-discrimination as set forth in these General Conditions. The Contractor shall not be liable hereunder to indemnify the University against liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence or willful misconduct of the University, its agents or employees. The Contractor, at its own cost and expense, shall take out and maintain at all times during the effective period of the Contract, contractual liability insurance insuring the performance by the Contractor of its contractual duties and obligations under this Article, which insurance shall name the University as additional insured and shall be in form and amount and from an insurance company satisfactory to the University. The Contractor's duty to fully indemnify the University shall not be limited in any way by the existence of this insurance coverage.

3.06.3

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University harmless from and against all costs and expenses of every nature (including attorney fees and expenses incident thereto) incurred by the University in collecting the amounts due from the Contractor, or otherwise enforcing its rights, under the indemnifications described in this Article.

3.06.4

In claims against any person or entity indemnified under this Article made by an employee of the Contractor or a Subcontractor, supplier or indirectly employed by any of them, or anyone for whose acts is made liable, the indemnification obligation under this Article shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor, Subcontractor or supplier under workers compensation laws, disability benefit laws, or other laws providing employee benefits.

3.06.5

The indemnification obligations under this Article shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

3.06.6

The Contractor shall hold harmless, defend, and indemnify the University from and against losses resulting from any claim of damage made by any separate contractor of the University against the University arising out of any alleged acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by either the Contractor or subcontractor, or anyone for whose acts either the Contractor or subcontractor may be liable.

3.06.7

The Contractor shall hold harmless, defend, and indemnify the separate Contractors of the University from and against losses arising out of the negligent acts or omissions or willful misconduct of the Contractor, a subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor, or anyone for whose acts the Contractor or subcontractor may be liable.

3.07 Guarantee

The Contractor unconditionally guarantees the Work under this Contract to be in conformance with the Contract Documents and to be and remain free of defects in workmanship and materials not inherent in the quality required or permitted. Contractor shall repair or replace any Work, together with any adjacent Work which may be displaced in so doing, which is not in accordance with the requirements of the Contract or which is defective in its workmanship or material, all without any expense whatsoever to the University for a

period of one (1) year / two (2) years from the date of Substantial Completion, unless a longer guarantee period is stipulated in the Contract Documents or otherwise available from the manufacturer ("Repair Period").to.

Special guarantees that are required by the Contract Documents shall be signed by the Contractor who is responsible for the entire work and countersigned by the subcontractor who performs the work.

The Contractor further agrees that within five calendar days after being notified in writing by the University of any Work not in accordance with the requirements of the Contract Documents or of any defects in the Work, it shall commence and prosecute with due diligence all Work necessary to fulfill the terms of this guarantee and to complete the Work in accordance with the requirements of the Contract with sufficient manpower and material to complete the repairs as expeditiously as possible. The Contractor, in the event of failure to so comply, does hereby authorize the University to proceed to have the Work done at the Contractor's expense, and it agrees to pay the cost thereof upon demand. The University shall be entitled to all costs necessarily incurred upon the Contractor's refusal to pay the above cost.

Notwithstanding the foregoing paragraph, in the event of an emergency constituting an immediate hazard to health, safety or damage of the University's employees, property, or licenses, the University may undertake at the Contractor's expense, without prior notice, all Work necessary to correct such hazardous conditions caused by the Work of the Contractor not being in accordance with the requirements of this Contract.

The Contractor shall require a similar guarantee in all subcontracts, including the requirement that the University be reimbursed for any damage or loss to the Work or to other Work resulting from such defects.

If required by the Contract Documents, the Maintenance and Guarantee Bond shall be in full force and effect during the entire Repair Period, unless a longer bond period is stipulated in the Contract Documents.

4.00 CONTRACTOR'S COMPENSATION

4.01 Basis of Compensation

In consideration of the full performance of this Agreement by the Contractor, the University shall compensate the Contractor as stated in Exhibit B.

4.02 Change Orders and Construction Change Directives

4.02.1 Generally

The University reserves the right to issue written orders whether through a formal Change Order or Construction Change Directive, directing changes in the Contract at any time prior to the acceptance of the Project without voiding the Contract, and Contractor shall promptly comply with such order. A Construction Change Directive may be issued in writing by the University directing the Contractor to perform changed Work in the absence of a final agreement on a Change Order and the costs will be calculated as provided in 6.01.4. The Contractor may request changes in the Work, but shall not act on the changes until approved in writing by the University. Any change made without authority in writing from the University shall be the responsibility of the Contractor.

Any such changes in the Work that have a cost impact shall only be authorized by Change Orders approved by the University. No action, conduct, omission, prior failure or course of dealing by the University shall act to waive, modify, change or alter the requirement that Change Orders must be in writing and signed by the University and Contractor and that such written Change Orders are the exclusive method for changing or altering the Contract Sum or Contract Time. The University and Contractor understand and agree that the Contract Sum and Contract Time cannot be changed by implication, oral agreements, actions, inaction, course of conduct or Construction Change Directive.

On the basis set forth herein, the Contract Sum may be adjusted for any Change Order requiring a different quantity or quality of labor, materials or equipment from that originally required, and the partial payments to the Contractor, set forth in section 8.01, may be adjusted to reflect the change. Whenever the necessity for a change arises, the Contractor shall take all necessary steps to mitigate the effect of the ultimate change on the other Work in the area of the change. Changed Work shall be performed in accordance with the original Contract requirements except as modified by the Change Order. Except as herein provided, the Contractor shall have no claim for any other compensation including lost productivity or increased overhead expenses due to changes in the Work. The amounts set forth in the Change Order constitute full compensation for both direct and indirect costs of the Work described in the Change Order. Payment by the University pursuant to the Change Order shall constitute full satisfaction of any and all claims for compensation and extension of time by the Contractor for the performance of the Work by the Contractor and all subcontractors.

4.02.2 Proposed Change Orders

The Design Professional, with approval of the University, shall issue to the Contractor a cost request Bulletin for a proposed change order describing the intended change and shall require the Contractor to indicate thereon a proposed amount to be added to or subtracted from the Contract Sum due to the change supported by a detailed estimate of cost. Upon request by the University, the Contractor shall permit inspection of the original Contract estimate, subcontract agreements, or purchase orders relating to the change. Any request for adjustment in Contract Time which is directly attributable to the changed Work shall be included with substantiating detailed explanation by the Contractor in its response to the cost request bulletin. Failure by Contractor to request adjustment of Contract Time in the response to the cost request Bulletin shall waive any right to subsequently claim an adjustment of the Contract Time based on the changed Work. The Contractor shall submit the response to the cost request Bulletin with detailed estimates and any time extension request thereon to the Design Professional and the University's Representative within ten (10) calendar days after issuance of the cost request bulletin. Upon its submission the Design Professional will review it and advise the University who will make the decision. If the Contractor fails to submit the response within the required ten (10) calendar days, and the Contractor has not obtained the Design Professional's and the University's permission for a delay in submission, the University may order the Contractor in writing to begin the Work immediately, and the Contract Sum shall be adjusted in accordance with the University's estimate of cost. In that event, the Contractor, within fifteen days following completion of the changed Work, may present information to the University that the University's estimate was in error; the University, in its sole discretion, may adjust the Contract Sum. The Contractor must keep and submit to the University time and materials records verified by the University to substantiate its costs. The University may require the Contractor to proceed immediately with the changed Work in accordance with section 4.02.4, "Failure to Agree as to Cost" or section 4.02.6 "Emergency Changes."

When the University and the Contractor agree on the amount to be added to or deducted from the Contract Sum and the time to be added to or deducted from the Contract Time and an Impact Report or a Contract Change Order is signed by the University and the Contractor, the Contractor shall proceed with the changed Work. If agreement is reached as to the adjustment in compensation for the performance of changed Work but agreement is not reached as to the time adjustment for such Work, the Contractor shall proceed with the Work at the agreed price, reserving the right to further pursue its Claim for a time adjustment. Any costs incurred to acquire information relative to a proposed Change Order shall not be borne by the University.

4.02.3 Allowable Costs Upon Change Orders

The only estimated or actual costs that will be allowed because of changed Work and the manner in which those costs shall be computed is described by this section.

4.02.3.1 Labor

Costs are allowed for the actual payroll cost to the Contractor for direct labor, engineering or technical services directly required for the performance of the changed Work, (but not site management such as field office estimating, clerical, project engineering, management or supervision) including payments, assessments, or benefits required by lawful labor union collective bargaining agreements, compensation insurance payments, contributions made to the State pursuant to the Unemployment Insurance Code, and for taxes paid to the federal government required by the Social Security Act of August 14, 1935, as amended, unless the time of completion adjustments affect the general condition inclusion of the Contract Sum.

No labor cost will be recognized at a rate in excess of the appropriate wage rates established for that portion of the Work, nor will the use of a classification which would increase the labor cost be permitted unless the Contractor established to the satisfaction of the University the necessity for payment at a higher rate.

4.02.3.2 Materials

Costs are allowed for the actual cost to the Contractor for the materials directly required for the performance of the changed Work. Such cost of materials may include the costs of transportation, sales tax, and delivery if necessarily incurred. However, overhead costs shall not be included. If a trade discount by the actual supplier is available to the Contractor, it shall be credited to the University. If the materials are obtained from a supply or source owned wholly or in part by the Contractor, payment therefor will not exceed the current wholesale price for such materials.

If, in the opinion of the University, the cost of materials is excessive, or if the Contractor fails to furnish satisfactory evidence of the cost from the actual suppliers thereof, then in either case the cost of the materials shall be deemed to be the lowest wholesale price at which similar materials are available in the quantities required at the time they were needed.

4.02.3.3 Equipment

Costs are allowed for the actual cost to the Contractor for the use of equipment directly required in the performance of the changed Work except that no payment will be made for time while equipment is inoperative due to breakdowns or for non-working days. The rental time shall include the time required to move the equipment to the Project site from the nearest available source for rental of such equipment, and to return it to the source. If such equipment is not moved by its own power, then loading and transportation costs will be paid. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the Project in any other way than upon the changed Work. Individual pieces of equipment having a replacement value of $500.00 or less shall be considered to be tools or small equipment, and no payment therefor will be made.

For equipment owned or furnished by the Contractor, no cost therefor shall be recognized in excess of the rental rates established by distributors or equipment rental agencies in the locality where the Work is performed. Blue Book rates shall not be used for any purpose.

The amount to be paid to the Contractor for the use of equipment as set forth above shall constitute full compensation to the Contractor for the cost of fuel, power, oil, lubrication, supplies, small tools, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators who shall be paid for as provided in Article 4.02.3.1) and any and all costs to the Contractor incidental to the use of such equipment.

4.02.3.4 Work by Subcontractors and Vendors

For any portion of the changed Work which is to be performed by a subcontractor, the Contractor shall furnish to the University a detailed estimate prepared and signed by subcontractor of the cost to subcontractor for performing the changed Work. At the sole discretion of the University, a lump sum estimate of such cost to

subcontractor may be accepted in lieu of the detailed estimate. The combined costs for subcontractor's overhead, profit, taxes, indirect supervision, insurance, bonds shall not exceed ten percent (10%). Estimates of the amount to be deleted from subcontractor's portion of the Work shall be gross cost of the deducted Work plus eight percent (8%). For changed Work to be furnished by a supplier, the Contractor shall furnish upon demand of the University, a lump sum estimate of the cost of the items including taxes and cartage to the Contractor prepared by the supplier. No supplier mark-up for overhead, profit, layout, supervision or bonds will be allowed for changed Work furnished by a supplier.

4.02.3.5 Contractor Mark-up for Added Work

Where changed Work is performed, the Contractor may add to the total estimated actual cost for such Work no more than ten (10%) for subcontractor mark-up and seven and one-half percent (7.5%) for self-performed trade work for profit, overhead, insurance, taxes, indirect supervision, bonds, and any other costs not allowed by section 4.02.01.

4.02.3.6 Credit for Deleted Work

The amount to be deducted from the Contract Sum shall be the total estimated actual cost of the deducted Work plus eight percent (8%).

Where an entire item or section of Work is deleted from the Contract, the entire subcontract cost or bid cost shall be considered the appropriate deduction less the value of Work performed. If the subcontract cost or bid cost is not identifiable, then estimates of the amount to be deducted from the Contract Sum shall be the gross cost of the deducted work plus six percent (6%) for saved overhead, bonds, insurance, and taxes.

For proposed change orders which involve both added and deleted Work, the Contractor shall separately estimate the cost of the added Work before mark-ups, and separately estimate the cost of the deleted Work before allowance of a credit. If the difference between the costs results in an increase to the Contract Sum, the mark-up for added Work shall be applied to the difference, and if the difference in the costs results in a decrease, then the mark-up for deleted Work shall be applied to the difference.

4.02.3.7 Market Values

Cost for added Work shall be no more than market values prevailing at the time of the change, unless the Contractor can establish to the satisfaction of the University that it investigated all possible means of obtaining Work at prevailing market values and that the excess cost could not be avoided.

When a change order deletes Work from the Contract, the computation of the cost thereof shall be the values which prevailed at the time bids for the Work were opened or the Contract Sum established.

4.02.4 Failure to Agree as to Cost

4.02.4.1 For Added Work

Notwithstanding the failure of the University and the Contractor to agree as to the cost of the proposed Change Order, the Contractor, upon written order from the University, shall proceed immediately with the changed Work. A Construction Change Directive or letter signed by the University shall be used for this written order. At the start of each day's Work on the change, the Contractor shall notify the University in writing as to the size of the labor force to be used for the changed Work and its location. Failure to so notify may result in the non-acceptance of the costs for that day. At the completion of each day's Work, the Contractor shall furnish to the University a detailed summary of all labor, materials, and equipment employed in the changed Work. The University will compare his/her records with Contractor's daily summary and may make any necessary adjustments to the summary. After the University and the Contractor agree upon and

sign the daily summary, the summary shall become the basis for determining costs for the additional Work. The sum of these costs when added to an appropriate mark-up will constitute the payment for the changed Work. Subsequent adjustments, however, may be made based on later audits by the University. When changed Work is performed at locations away from the job site, the Contractor shall furnish in lieu of the daily summary, a summary submitted at the completion of the Work containing a detailed statement of labor, material, and equipment used in the Work. This latter summary shall be signed by the Contractor who shall certify thereon that the information is true.

The Contractor shall maintain and furnish on demand of the University itemized statements of cost from all vendors and subcontractors who perform changed Work or furnish materials and equipment for such Work. All statements must be signed by the vendors and the subcontractors.

4.02.4.2 For Deleted Work

When a proposed Change Order contains a deletion of any Work, and the University and the Contractor are unable to agree upon the cost thereof, the University's estimate shall be deducted from the Contract Sum and may be withheld from any payment due the Contractor until the Contractor presents adequate substantial information to the University that the University's estimate was in error. The amount to be deducted shall be the actual costs to the Contractor for labor, materials, and equipment which would have been used on the deleted Work together with an amount for mark-up as defined in the Contract Documents.

4.02.5 Allowable Time Extensions

For any change in the Work, the Contractor shall only be entitled to such adjustments in Contract Time due solely to performance of the changed Work. The procedure for obtaining an extension of time is set forth in Section 4.08 of these General Conditions. No extension of time shall be granted for a change in the Work unless the Contractor demonstrates to the satisfaction of the University that the Work is on the critical path and submits an updated CPM schedule showing that an extension of time is required and that the Contractor is making, or has made, every reasonable effort to guarantee completion of the additional Work called for by the change within the time originally allotted for the Contract. Failure by the Contractor to make the required submission or showing constitutes a waiver of any possible adjustment in Contract Time.

Any adjustment in Contract time shall specify the exact calendar day.

4.02.6 Emergency Changes

Changes in the Work made necessary due to unforeseen site conditions, discovery of errors in plans or specifications requiring immediate clarification in order to avoid a serious Work stoppage, changes of a kind where the extent cannot be determined until completed, or under any circumstances whatsoever when deemed necessary by the University are kinds of emergency changes which may be authorized by the University in writing to the Contractor. The Contractor shall commence performance of the emergency change immediately upon receipt of written direction from the University.

If agreement is reached as to compensation adjustment for the purpose of any emergency change, then compensation will be as provided in this section relating to ordinary changes. If agreement is not reached as to compensation at the time of commencing the emergency change, then compensation will be as provided in section 4.02.4, that is, time and materials records and summaries shall be witnessed and maintained until either a lump sum payment is agreed upon, or the changed Work is completed.

4.03 Records and Audit

4.03.1

Contractor's records, which shall include but not be limited to accounting records (hard copy, as well as computer readable data if it can be made available), written policies and procedures; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, etc.); original estimates; estimating work sheets, correspondence; change order files (including documentation covering negotiated settlements); backcharge logs and supporting documentation; general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; and any other supporting evidence deemed necessary by the University to substantiate changes related to the Agreement (collectively referred to as "Records") shall be maintained in accordance with Generally Accepted Accounting Principles and open to inspection and subject to audit and/or reproduction by University's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of Cost of the Work, and any invoices, change order, payments or claims submitted by the Contractor or any of his payees pursuant to the execution of the contract.

4.03.2

Such audits may require inspection and copying from time to time and at reasonable times and places of any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase order, leases, contracts, commitments, arrangements, notes, daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in University's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Documents. Such records subject to audit shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs, (including overhead allocations) as they may apply to costs associated with this Agreement.

4.03.3

The University or its designee shall be afforded access to all of the Contractor's Records, and shall be allowed to interview any of the Contractor's employees, pursuant to the provisions of this article throughout the term of this contract and for a period of six (6) years after Final Payment or longer if required by law. To the extent University deems is allowed by law, the Contractor's records shall remain confidential. Contractor recognizes and agrees that University will disclose documents it deems is required or appropriate pursuant to law, defense against lawsuits or other claims, or other reason deemed necessary by University.

4.03.4

Contractor shall require all Subcontractors, insurance agents, and material suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in a written contract agreement between Contractor and payee. Such requirements will also apply to Subcontractors and all lower tier Subcontractors. Contractor will cooperate fully and will cause all of Contractor's Subcontractors (including those entering into lump sum contracts, payees or lower tier Subcontractors) to cooperate fully by furnishing or making available to University from time to time whenever requested in an expeditious manner any and all such information, materials and data.

4.03.5

University's agent or its authorized representative shall have access to the Contractor's facilities, shall have access to all records deemed necessary by University; and shall be provided adequate and appropriate work space, in order to conduct review or audits in compliance with this article.

4.03.6

Contractor agrees that University's designee shall have the right to examine the Contractor's records (during the contract period and up to six(6) years after Final Payment is made on the contract) to verify the accuracy and appropriateness of the pricing data used to price change proposals or claims. Contractor agrees that if the University determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current or not in compliance with the terms of the contract regarding pricing of change orders, an appropriate contract price reduction shall be made. Such post-approval contract price adjustments will apply to all levels of Contractors and/or Subcontractors and to all types of change order proposals specifically including lump sum change orders, unit price change orders and cost-plus change orders.

4.03.7

If an audit, inspection or examination in accordance with this article, discloses overcharges (of any nature) by the Contractor to the University in excess of one percent (1%) of the total contract billings, the actual cost of the University's audit shall be reimbursed to the University by the Contractor. Any adjustments and/or payments which must be made as a result of any such audit or inspection of the Contractor's invoices and/or records shall be made within a reasonable amount of time (not to exceed 90 days) from presentation of University's findings to Contractor.

4.03.8

If this Agreement is determined to be subject to Section 1861(v)(1)(I) of the Social Security Act, as amended from time to time, the Contractor agrees that for a period of four (4) years following the expiration or earlier termination of this Agreement, the Contractor shall retain and make available to the Secretary of Health and Human Services, the Comptroller General of the United States, or any of their duly authorized representatives, this Agreement, and any books, documents, and records of the Contractor which are necessary to certify the nature and extent of amounts paid by the University pursuant to this Agreement. In the event access to books, documents, and records is requested by the Secretary, the Comptroller General, or any of their duly authorized representatives, the Contractor shall immediately notify the University and make such books, documents and records available to the University unless prohibited by law.

4.04 Applications for Payment

The Contractor shall prepare and deliver to the University monthly an itemized Application for Payment. The University shall pay the Contractor within thirty (30) days of receipt of a properly submitted, complete and correct Application for Payment. The Applications for Payment shall include a Schedule of Values describing the services included and Work completed in the Application for Payment. No interest shall accrue on any unpaid portion of the Applications for Payment or any other sums that the Contractor or any Subcontractor or supplier claim are or may be due under this Agreement.

The Application for Payment shall constitute a representation by the Contractor to the University that the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment. No progress payment, partial use or entire use of the Project by the University shall constitute acceptance of work not in strict conformity with the Contract Documents.

The Contractor shall keep records of cost and expense to support the Contractor's Applications for Payment, including without limitation records of staff time, material costs, and reimbursable expense items in connection with the Work. Financial records shall be kept on a generally recognized accounting basis, as approved by the University. Contractor shall make them readily available to the University or its representatives for inspection and audit for a period of six (6) years after the Project Close-out and Final Payment to the Contractor.

The Application for Payment shall be accompanied by a Sworn Statement completed by the Contractor, together with Certified Payrolls prepared in accordance with Section 5.02, as well as other documentation that may be required by the University, stating that all Subcontractors and suppliers have been paid in full for Work performed through the last or most recent progress payment.

4.05 Retainage

Payments to the Contractor shall be subject to retainage of ten percent (10%) of the Cost of Work for each Application for Payment until the Work is fifty percent (50%) complete; at that time, no further retainage will be deducted from the Applications for Payment. Draws on retainage may only be submitted after Substantial Completion and in the following quantities: (1) at the completion of all Punchlist items, the retainage may be reduced to two percent (2%); and (2) at delivery of all Closeout Documents and warranties, the remainder of the retainage may be paid to the Contractor. Any release of retainage shall be at the sole discretion of the University.

4.06 Final Payment

Issuance of Final Payment shall be expressly conditioned on certification of Substantial Completion, certification of Punchlist completion and written acceptance of closeout documents by the Design Professional and University.

5.00 WSU WAGES

5.01 Applicable Wage Rates

The Contractor acknowledges and shall abide by the University's prohibition on use of 1099 independent contractors and owner / operator business entities wherein such individuals or entities are not able to secure and maintain workers compensation insurance. The Contractor shall ensure that all classifications of laborers and construction mechanics performing Work on the Project job site are employees of the Contractor or any subcontractor for any tier thereof, and that each worker is covered by workers compensation insurance.
For this project, it is a University requirement that the Contractor and all Subcontractors and sub-subcontractors who provide labor on this project shall compensate each worker, regardless of their employment status, not less than the wage and fringe benefit rates prevailing in the locality in which the work is to be performed. At the time of advertising for bids on the project, the University shall provide the prevailing rates of wages and fringe benefits for all classes of construction mechanics called for in the Contract. A schedule of these rates shall be made a part of the specifications for the work to be performed and shall be printed on the bidding forms where the work is to be done by contract. Contractor shall also post on site, in a conspicuous place, a copy of all applicable wage and benefit rates, and shall provide the University with a copy of the applicable wage and benefit rates posted.

5.02 Certified Payroll Records and Supporting Documents

The Contractor and each Subcontractor shall keep an accurate record showing the name and occupation of and the actual benefits and wages paid to each laborer and mechanic working in connection with this contract and shall be submitted with each pay application in accordance with Section 4.04. Contractor shall be required to 1) collect all certified payroll records from Contractor and Subcontractors and sub-subcontractors; 2) provide and require Subcontractors and sub-subcontractors to provide the University access to supporting documentation, and 3) shall provide this information, records, and/or access to documentation to the University or its agent(s) or auditors for review or audit promptly on request. Contractor shall, and shall also require all subcontractors and sub-subcontractors to, promptly provide

information relating to payroll and job classification and work duties to University upon request. The University reserves the right to audit Contractor, Subcontractors, and sub-subcontractors for compliance with wage and hour requirements, WSU Wage, employee classifications and other applicable requirements.

5.02.1 Audit

In connection with the WSU Wage rate audit conducted by the University, the Contractor is required to maintain and/or promptly obtain the following information, records and documentation from Contractor, all Subcontractors, and all sub-subcontractors and to promptly provide them to the University upon request:

1. Canceled payroll checks
2. Pay stubs
3. Weekly time cards on time sheets
4. Payroll registers
5. Employee handbook
6. Fringe benefit plan documents
7. Minutes of Board of Directors meetings
8. Worksheets for calculation of non-cash fringe benefit amounts included in compensation
9. Apprentice certificates and other documents to verify registration of all apprentices in recognized apprentice program certified by the Bureau of Apprenticeship and Training (B.A.T.) of the U.S. Dept. of Labor or an acceptable equivalent
10. Other related documents as requested by the University.

5.02.2 Failure to Comply with Audit

If the requested information and/or records are not promptly provided pursuant to University's request, in addition to all other rights and remedies it has pursuant to law, equity and contract, the University, by written notice to Contractor and the sureties of the contractor known to the University may, but has no obligation or duty to, 1) terminate the contract with Contractor and University owe Contractor and be liable only for that prorated portion of satisfactorily completed work up to the date of termination; 2) withhold further payments owed until Contractor supplies the requested information and records and/or otherwise complies with the request for records and/or access to documentation; and 3) inform the Vice-President for Finance and Business Operations of what has been requested and what has not been provided by Contractor and/or subcontractor or sub-subcontractor. Contractor is hereby given express notice that failure to comply with University's requests for information and records may disqualify Contractor and/or non-complying Subcontractors/sub-subcontractors from bidding and/or receiving work on future University projects. The University may proceed to complete this contract by separate agreement with another contractor or otherwise and the original Contractor and its sureties shall be liable to the University for any excess cost occasioned thereby.

5.03 Classification of Workers

All apprentices utilized on this University project must be registered in a recognized apprentice program, i.e., one that is certified by the Bureau of Apprenticeship (B.A.T.), U.S. Department of Labor. The workers used on a University project by either Contractor or a Subcontractor must be employees of the Contractor or Subcontractor and not individuals claimed as subcontractors or independent contractors, such as individuals whose compensation is reflected on IRS form 1099. The use of individuals as independent contractors is prohibited without express written permission of the University.

5.04 Failure to Pay

If a Contractor or subcontractor fails to pay the prevailing rates of wages and fringe benefits and does not cure such failure within fourteen (14) days after notice to do so by the University, the University shall have the right, at its option, to do any or all of the following:

5.04.1

Withhold all or any portion of payments due the Contractor as may be considered necessary by the University to pay laborers and mechanics the difference between the rates of wages and fringe benefits required by this Agreement and the actual wage and fringe benefits paid.

5.04.2

Terminate part or all of this Agreement or any subcontract and proceed to complete the Agreement or subcontract by separate agreement with another contractor or otherwise, in which case the Contractor and its sureties shall be liable to the University for any excess costs incurred by the University.

5.04.3 University's Rights Cumulative

It is expressly understood by both parties that the above are in addition to University's other rights and remedies, and University retains all other rights and remedies it has pursuant to this Agreement, or otherwise, to enforce its rights to require that WSU Wages and fringe benefits be paid for the construction work on this Project, but the University shall have no duty or contractual obligation to enforce these provisions. Contractor agrees that it shall be solely responsible for ensuring that these requirements are met and shall handle and defend all complaints or claims regarding wage payments to construction mechanics without assistance or involvement of the University. Contractor shall permit its employees and workers, and its Subcontractors and sub-subcontractors and their employees and workers, to discuss payment and work duty information with University staff, but otherwise Contractor shall continually prohibit its employees and workers, and all subcontractors and sub-subcontractors and their employees and workers, from directing or making any claims or complaints regarding the payment of wages to any employee or official of the University, and shall indemnify and reimburse University for all expenses and fees, including attorney fees, which it incurs for defending or representing itself against such claims or complaints. The University shall not be asked to nor be responsible to address or resolve any disputes with or between Subcontractors on the Project.

5.05 Application to Subcontractors

The Contractor shall include terms identical or substantially similar to this section in all Subcontracts, Purchase Orders and other agreements pertaining to the Project.

6.00 OWNERSHIP OF ELECTRONIC OR HARD-COPY DOCUMENTS

All drawings and specifications and other data and materials prepared and furnished whether in electronic or hard-copy format by the University, the Design Professional and/or the Contractor shall become the property of the University. The Contractor shall have no claim for further employment or additional compensation as a result of exercise by the University of its full rights to ownership of such documents, information, data and materials. The Contractor shall not use or copy such documents, information, data or materials in any format for any purpose other than for the Project.

7.00 SUCCESSORS AND ASSIGNS

This Agreement shall be binding upon and inure to the benefit of the parties to this Agreement and their respective successors and assigns; provided, however, that none of the parties hereto shall assign this Agreement without the prior written consent of the other.

8.00 CLAIMS, DISPUTES AND GOVERNING LAW

8.00 CLAIMS AND DISPUTES

8.01 Claims Definition

A Claim is a demand or assertion by one of the parties seeking adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the parties arising out of or relating to the Contract. Claims must be made by written notice within a specified time period. The responsibility to substantiate Claims shall rest with the party making the Claim.

8.01.1 Policy of Cooperation

The parties shall endeavor to resolve all of their claims and disputes amicably and informally through open communication and discussion of all issues relating to the Project. To the greatest extent possible, the parties shall avoid invoking the formal dispute resolution procedures contained in the Contract Documents.

8.02 Recommendation of Design Professional

Claims must be referred initially to the Design Professional for action as provided in paragraph 8.10 as an express condition precedent to proceeding further in resolving any claim.

8.03 Time Limits on Claims

Claims must be made within 5 business days after occurrence of the event giving rise to such Claim or within 5 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been resolved by Change Order will not be valid.

8.04 Continuing Contact Performance

Pending final resolution of a Claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the University shall continue to make payments in accordance with the Contract Documents subject to the University's rights relative to payments, withholding of payments, termination, or all other rights afforded it in the Contract Documents.

8.05 Claims for Concealed or Unknown Conditions

If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then written notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 24 hours after first observance of the conditions. The Design Professional will promptly investigate such conditions and, if the conditions differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, the Design Professional will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Professional determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall so notify the University and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 5 days after the Design Professional has issued such determination. If the University and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the

adjustment shall be referred to the Design Professional for initial determination, subject to further proceedings pursuant to Paragraph 8.09.

8.06 Claims for Additional Cost

Any Claim by the Contractor for an increase in the Contract Sum shall be submitted in writing as required by the Contract Documents before proceeding to execute the Work. If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Design Professional, (2) an order by the University to stop the Work where the Contractor was not at fault, (3) a written order for a minor change in the Work issued by the Design Professional, (4) failure of payment by the University, (5) termination of the Contract by the University, (6) University's suspension or (7) changes in the scope of Work, the Contractor's claim shall be filed in strict accordance with the procedure established herein.

8.07 Claims for Additional Time

Any Claim by Contractor for an increase in the Contract Time shall be submitted in writing as required by this provision and the Contract Documents. The Contractor's Claim shall include an estimate of the probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

As a precondition for the Claim to be considered by the University, Contractor must identify the precise activities affected as located on the approved network Project Schedule. Contractor must also describe the efforts that it has made to mitigate the effects of any negative schedule impact.

If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and location and could not have been reasonably anticipated, and that the abnormal weather conditions had an adverse effect on the scheduled construction.

8.08 Injury or Damage to Person or Property

If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 5 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to this Claim is to be asserted, it shall be filed as provided in the Contract Documents.

8.09 Verification of Claims Submitted

With respect to any Claim asserted by Contractor for itself or on behalf of a Subcontractor for additional time or cost, the Contractor shall evaluate the claim and verify that any amounts claimed are valid, compiled in accordance with generally accepted accounting principles and are consistent with the terms of the existing contractual agreements regarding entitlement before presentation of the Claim to the Owner. Any Claim not verified in accordance with this requirement shall be denied without further recourse by the Contractor or Subcontractor.

8.10 Resolution of Claims and Disputes

8.10.1 Review by Design Professional

Design Professional will review all Claims and take one or more of the following preliminary actions within 10 days of receipt of a Claim: (1) request additional supporting data from the claimant, (2) submit a schedule to the parties indicating when the Design Professional expects to take action, (3) reject the Claim in whole or in

part, stating reasons for rejection, (4) recommend approval of the Claim by the other party or (5) suggest a compromise. The Design Professional may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

If a Claim has been resolved, the Design Professional will prepare or obtain appropriate documentation. If a Claim has not been resolved, the party making the Claim shall, within 10 days after the Design Professional's preliminary response, take one or more of the following actions: (1) submit additional supporting data requested by the Design Professional, (2) modify the initial Claim or (3) notify the Design Professional that the initial Claim stands.

If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Design Professional, the Design Professional will notify the parties in writing that the Design Professional's opinion will be rendered within 5 days. Upon expiration of such time period, the Design Professional will render to the parties the Design Professional's written opinion relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Design Professional may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy. The opinion of the Design Professional shall be subject to the review of the Vice-President for Finance and Business Operations Wayne State University (VPFBO).

8.10.2 Review by Vice-President for Finance and Business Operations

The Vice-President for Finance and Business Operations (VPFBO) shall review the Design Professional's opinion and the supporting information submitted by the parties for the purpose of upholding the Design Professional's opinion, modifying the Design Professional's opinion, or rejecting the Design Professional's opinion. The VPFBO shall render a decision within forty-five days of the completion of any submissions by the parties. The decision of the VPFBO is final unless it is challenged by either party by filing a lawsuit in the Court of Claims of the State of Michigan within one year of the issuance of the decision.

8.10.3 Jurisdiction

Jurisdiction over all claims, disputes, and other matters in question arising out of or relating to this Contract or the breach thereof, shall rest in the Court of Claims of the State of Michigan. No provision of this agreement may be construed as the University's consent to submit any claim, dispute or other matter in question for dispute resolution pursuant to any arbitration or mediation process, whether or not provisions for dispute resolution are included in a document which has been incorporated by reference into this agreement.

8.10.4 Condition Precedent

The process and procedures described in Section 8.10 are an express condition precedent to filing or pursuing any legal remedy including litigation. Pursuing litigation prior to exhaustion of the Dispute Resolution process set forth herein shall be premature and a material breach of this Agreement.

8.10.5 Governing Law

This Agreement shall be governed by and construed in accordance with the laws of the State of Michigan.

9.00 NON-DISCRIMINATION

9.01 General

The Contractor shall not discriminate against any job applicant, contractor, or employee because of race, color, religion, national origin, age, sex (including gender identity) height, weight, or familial, disability, or

veteran status, and shall include terms identical or substantially similar to this section in all Subcontracts, Purchase Orders and other agreements pertaining to the Project.

9.02 Solicitation/Advertisements

The Contractor shall in all solicitation or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, age, sex (including gender identity), height, weight, or familial, disability or veteran status.

9.03 Rules/Laws

The Contractor shall comply with all applicable federal and state laws, and current published rules, regulations, directives, and orders of the Michigan Civil Rights Commission and other governmental agencies/departments.

9.04 Reports

The Contractor shall furnish and file compliance reports within such time and upon such forms as provided by the Michigan Civil Rights Commission; these forms may also elicit information as to the practices, policies, program, and employment statistics of the Contractor and of each Subcontractor. The Contractor shall permit access to all books, records, and accounts by the Michigan Civil Rights Commission and/or its agents, for purposes of investigation to ascertain compliance with this contract and with rules, regulations, and orders of the Michigan Civil Rights commission.

9.05 Persons with Disabilities

The Contractor shall comply with the provisions of the Michigan Persons with Disabilities Civil Rights Act (M.C.L. 37.1101, et seq.).

9.06 Contract Provisions

The Contractor shall include, or incorporate by reference, the provisions of this Article in every Subcontract, Subcontract and purchase order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission, and shall provide in every Subcontract, subcontract or purchase order that said provisions shall be binding upon each Subcontractor, subcontractor or seller.

10.00 ADDITIONAL PROVISIONS

10.01 Prohibited Contracts or Subcontracts due to Unfair Labor Practices

Public Act No. 278 of 1980 prohibits State of Michigan from awarding Contract or Subcontract to employer who has been found in contempt of court by a Federal court of appeals, on not less than three (3) occasions involving different violations during preceding seven (7) years, for failure to correct unfair labor practice as prohibited by Section 8 of Chapter 372 of National Labor Relations Act, 29 U.S.C. 158. Contractor may not in relation to that Contract subcontract with such employer. The University may rescind, or require Contractor to rescind a contract if the employer or Subcontractor, manufacturer, or supplier of employer subsequently appears in register of such employers which will be compiled by Michigan's Department of Licensing and Regulatory Affairs, pursuant to Section 2 of Public Act No. 278 of 1980.

10.02 Buy-American

University endeavors to buy products made in the United States of America whenever an American-made product is available that meets or exceeds the specifications requested and the price is equal to or lower than foreign-made product. Vendors and Contractors are instructed to bid American-made products and/or services whenever available. Vendors and Contractors may bid foreign-made products or services when:

1. those products or services are specified, or
2. as an alternate as long as the products or services are technically acceptable to the University and American-made goods or services that are competitively price and of comparable quality are not available.

A product or service shall be considered "American-made" if more than 50% of the product is manufactured or assembled in the United States or more than 50% of the services are performed in the United States.

10.03 Michigan Products

Contractor and its Subcontractors and suppliers shall utilize Michigan-made products whenever possible where price, quality and performance are equal to or better than non-Michigan products.

10.04 Drug and Alcohol Testing

The University is a "DRUG FREE WORKPLACE", and the University requires Contractors, Subcontractors and sub-subcontractors with access to the work site to abide by the University's policies on drugs, alcohol and tobacco, which can be found at http://bog.wayne.edu/code/2_20_04.php and http://policies.wayne.edu/administrative/00-03-smoke-free-campus.php. All costs for initial and periodic testing shall be borne by the Contractor.

1. The Contractor and University shall reserve the right to administer drug and alcohol tests to any and/or all site personnel at random periods and without notice.

   a. The Contractor shall be responsible for all costs including wages for those individuals testing drug or alcohol-free at the Contractor's direction.

   b. Subcontractors shall be responsible for all costs including wages for those individuals not testing drug or alcohol-free at the direction of the Contractor, and the Subcontractor shall immediately remove those individuals from the site.

4. Any individual not testing drug or alcohol-free shall not be allowed to return to the site under any circumstances.

10.05 Other University Policies

The University's policies related to Duty to Report Criminal Acts and Weapons on Campus shall apply to this Project and Contractor shall include this requirement in all Subcontracts, purchase orders and supply agreements.

10.06 University Representative

The University's Representative shall be the Associate Vice President of Facilities Planning and Management, the Senior Director of Design and Construction Services, the Director of Design and Construction Services and the Project Manager . Any project decision on behalf of the University may only be in accordance with the Authorization Matrix that is attached as Exhibit C and incorporated by reference.

11.00 INCLUSION BY REFERENCE

This Contract and Contract Documents hereby include and incorporate by reference the General Conditions of Construction and Supplementary General Conditions, the Request for Proposal by University, the approved plans and specifications, Contractor's Bid or Proposal insofar as it is not inconsistent with the other Contract Documents and other Project documents attached as Exhibits.
Exhibit A – Contractor's Bid or Proposal
Exhibit B – Basis of Compensation
Exhibit C - Authorization Matrix
Exhibit D – Staffing Plan

12.00 TERMINATION

12.01 Termination by the University for Cause

12.01.1

The University may terminate the Contract if the Contractor: (a) becomes insolvent; (b) files or has filed against it any Petition in Bankruptcy or makes a general assignment for the benefit of its creditors; (c) fails to pay, when due, for materials, supplies, labor, or other items purchased or used in connection with the Work; (d) refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will ensure the completion of the Work in accordance with the Master Project Schedule; (e) in the University's opinion, persistently fails, refuses or neglects to supply sufficient labor, material or supervision in the prosecution of the Work; (f) interferes with or disrupts, or threatens to interfere with or disrupt the operations of the University, or any other Contractor, supplier, subcontractor, or other person working on the Project, whether by reason of any labor dispute, picketing, boycotting or by any other reason; or (g) commits any other breach of this Contract.

When any of the above reasons exist, the University may, without prejudice to any other rights or remedies of the University and after giving the Contractor and the Contractor's surety, if any, three days written notice, terminate employment of the Contractor and may, subject to any prior rights of the surety: (1) take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor; (2) accept assignment of subcontracts; and (3) finish the Work by whatever reasonable method the University may deem expedient.

When the University terminates the Contract for one of the stated reasons, the Contractor shall not be entitled to receive further payment until the Work is finished.

12.01.2

If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Design Professional's services and expenses made necessary thereby, the remaining balance shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the University. The amount to be paid to the Contractor or University, as the case may be, shall be certified by the Design Professional, upon application, and this obligation for payment shall survive termination of the Contract.

12.02 Suspension by the University for Convenience

12.02.1

The University may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the University may determine.

12.02.2

An adjustment shall be made for increases in the cost and/or time of performance of the Contract, including profit on the increased cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent: (1) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or (2) that an equitable adjustment is made or denied under another provision of this Contract.

Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

12.03 Termination By The University For Convenience

12.03.1

The University, with or without cause, may terminate all or any portion of the services by the Contractor under this Agreement, upon giving the Contractor 30 days written notice of such termination. In the event of termination, the Contractor shall deliver to the University all reports, estimates, schedules, subcontracts, Contract assignments, purchase order assignments, and other documents and data prepared by it, or for it, pursuant to this Agreement.

12.03.2

Unless the termination is for cause, the Contractor shall be entitled to receive only the payments provided for in Article 4, pro-rated to the date of termination (including payment for the period of the 30-day notice) plus reimbursement for approved and actual costs and expenses incurred by the Contractor to the date of termination. Prior to payment, the Contractor shall furnish the University with a release of all claims against the University.

12.04 Termination By The Contractor

12.04.1

The Contractor may terminate the Contract if the Work is stopped for a period of 60 days through no act or fault of the Contractor or a subcontractor, sub-subcontractor or their agents or employees or any other persons performing portions of the Work under Contract with the Contractor, for any of the following reasons: (1) issuance of an order of a court or other public authority having jurisdiction; (2) an act of government, such as a declaration of national emergency, making material unavailable; (3) because the Design Professional has not approved a Certificate for Payment and has not notified the Contractor of the reason for withholding approval, or because the University has not made payment of undisputed amounts on an approved Certificate for Payment within the time stated in the Contract Documents; (4) if repeated suspensions, delays or interruptions by the University constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

If one of the above reasons exists, the Contractor may, upon seven additional days' written notice to the University and Design Professional, terminate the Contract and recover from the University payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit.

12.04.2

If the Work is stopped for a period of 60 days through no act or fault of the Contractor or a subcontractor or their agents or employees or any other persons performing portions of the Work under Contract with the Contractor because the University has persistently failed to fulfill the University's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' written notice to the University and the Design Professional, terminate the Contract and recover from the University as provided in Subparagraph 12.03.2

13.00 COMPLETE AGREEMENT

The Contract Documents constitute the entire agreement between the parties and supersede any prior discussions or negotiations. Any modification of these Contract Documents must be in writing and signed by the duly authorized representatives of the parties.

IN WITNESS WHEREOF, each of the parties has caused this Agreement to be executed by its duly authorized representative on the dates shown beside their respective signatures, with the contract to be effective upon the date set forth above.

CONTRACTOR		Wayne State University	
By:	_____	By:	_____
Name:	_____	Name:	William R. Decatur
Title:	_____	Title:	VP Finance & Business Operations
Date:	_____	Date:	_____

Exhibit A – Contractor's Bid or Proposal

[GENERAL CONTRACTOR'S NAME] bid/proposal dated _____.

Exhibit B – Basis of Compensation

a. The University shall pay the Contractor a not to exceed amount of $$$$$$ ("Amount in words 00" /100 dollars) based on unit pricing in the proposal which will be adjusted to reflect actual units used for the performance of all work associated with the Contractor's Base Bid "and Alternates (List)" .

b. List of Alternates. The University may, at its sole discretion, during the life of the contract, award the following alternates at the amounts indicated: (If this section is not used, delete all text and enter_ Deleted)

	Description	Amount
Alternate 1		
Alternate 2		
Alternate 3		

c. List of unit prices. In the event additional work becomes necessary, the following unit prices will apply:
"(If section 3.3 is not used, delete all text and enter_Deleted"

Work Item	Unit Price
1.	
2.	

d. Liquidated Damages. It is understood and agreed that, if the project is not completed within the time specified in the Agreement plus any extension of time allowed pursuant thereto, the actual damages sustained by the University because of any such delay will be uncertain and difficult to to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by the University would be the sum of $_____ (_____ Hundred 00/100 dollars) per day. Therefore, the Contractor shall pay as liquidated damages to the University the sum of $_____ (_____ Hundred 00/100 dollars) per day for each day's delay in substantially completing said project beyond the time specified in this Agreement and any extensions of time allowed thereunder.

WAYNE STATE UNIVERSITY
GENERAL CONDITIONS OF CONSTRUCTION

GENERAL CONDITIONS (Revised 7-2018)

GENERAL CONDITIONS OF CONSTRUCTION

1.00 DEFINITIONS

Bulletin - A bulletin is defined as a compilation of changes to the scope of the work issued by the Design Professional or University which requests the Contractor to submit a quote for the changes.

Change Order - A written agreement entered into after the award of the Contract which alters or amends the executed Contract.

Claim - A Claim is a demand or assertion by one of the parties seeking adjustment or interpretation of Contract terms, payment of money, extension of time or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the parties arising out of or relating to the Contract. Claims must be made by written notice. The responsibility to substantiate Claims shall rest with the party making the Claim.

Close-out Documents - Close-out Documents shall include as-built record drawings and specifications, Operations and Maintenance Manuals, Requests for Information (RFIs), submittals, shop drawings, coordination drawings, warranties, unconditional lien waivers and governing approvals.

Cost of Work - The term Cost of Work, as used herein, is that portion of the Project Cost, that is the estimated or actual labor and material costs of that Work performed (or to be performed) on the Project by the Contractor and all subcontractors, and is inclusive of the cost of construction as described by divisions of the Construction Specifications Institute or other standard format, which constitutes the Direct Cost of Work. However, Cost of Work shall not include the Indirect Cost of Work as herein defined.

Contract - The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a duly executed written Change Order.

Contract Documents - The Contract Documents consist of the bonds, insurance certificates, plans, specifications, drawings, bulletins, addenda, Agreement, General Conditions of Construction, Supplementary General Conditions, Change Orders, Contractor's Bid, and to the extent not otherwise inconsistent with any other Contract Document.

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Project. Contract Documents are complementary, and what is required by one shall be as binding as if required by all. Performance by the Contractor shall be required to be consistent with the Contract Documents and the highest standard of care. In the case of an inconsistency between, or perceived omission or error in the Drawings, Specifications, or other Contract Documents which is not clarified by addendum or Requests for Information (RFI), or should the Contractor be in doubt as to their exact meaning, the Contractor shall notify the Design Professional and the University at once. The University shall not be responsible for the Contractors misinterpretations of Drawings and Specifications and/or other Contract Documents.

Nothing contained in the Contract Documents shall create a contractual relationship between University and any third party; however, the University is an intended third-party beneficiary of all contracts for design and engineering services, all subcontracts, purchase orders and other agreements between Contractor or Design

Professional and third parties. The Contractor and Design Professional shall incorporate the obligations of the Contract Documents into its respective subcontracts, agreements and purchase orders.

Contractor: The term “Contractor” as used in the General Conditions shall include the term “Construction Manager” as used in the Contract for Construction Management Services.

Contractor's Construction Schedule- The construction schedules required by the Contract Documents shall be a logic network prepared in the critical path method or other sequential network in use within the construction industry and shall depict: (1) a sequence of operations mutually agreeable to the University, Design Professional and Contractor; (2) the dates of commencement and completion of each task of the Work (including lead time activities, drawing and sample submissions, bidding, awarding Trade Contracts, manufacturing and shipping); (3) delivery dates for materials and equipment; and (4) at the University’s request shall include all Finish Work to be performed by separate Contractors. The construction schedule includes a complete itemized breakdown of the Work.

Contract Sum- The Contract Sum shall be the total dollar value of the Agreement between the University and Contractor.

Delay – A delay shall be recognized as a time of completion impact on the performance of the Work by the Contractor that extends the overall duration of the Project beyond the substantial completion and final completion dates specified in the Agreement. A delay shall not be recognized if the time of completion impact on the performance of the Work occurs on a non-critical path activity, and does not extend the overall duration of the Project.

Day - “Days” means calendar days unless specifically provided to the contrary herein or in the Construction Agreement; provided, however, if any day falls on a weekend or a holiday, same shall refer to the next business day thereafter.

Design Professional - The Design Professional is the person lawfully licensed to practice architecture or engineering or an entity lawfully practicing architecture or engineering identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term “Design Professional” means the Design Professional or the Design Professional’s authorized representative.

Final Completion - “Final Completion” means the completion of all the Work in accordance with the Contract Documents and the acceptance thereof by the University. Completion of the Work includes (1) full performance of all Contract terms; (2) acceptance of the Work by University; (3) resolution of all outstanding Changes of Contract; (4) completion of all “punch-list” items; and (5) delivery of all Close-out Documents.

Incomplete Construction List – The Incomplete Construction List is prepared by the Contractor for review by Design Professional and University identifying Work remaining to be completed at the time of Substantial Completion and the date by which Contractor shall complete the Work on the Incomplete Construction List.

Knowledge - The terms "knowledge," "recognize" or "discover," their respective derivatives and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows or should know, recognizes or should reasonably recognize and discovers or should reasonably discover in exercising the care, skill and diligence required by the Contract Documents.

Master Project Schedule - The Master Project Schedule shall show the sequence, duration in calendar days, interdependence for the complete performance of all Work. The Master Project Schedule shall begin with the date of issuance of the Notice to Proceed and conclude with the date of final completion.

Notice to Proceed - A "Notice to Proceed" means written notice given by the University to the Contractor fixing the date on which the Contract Time will commence to run and/or on which Contractor shall start to

perform Contractor's obligations under the Contract Documents. A Notice to Proceed by the University shall authorize all or a portion of the Work for the Costs so defined.

Persistently fails - The phrase "persistently fails" and other similar expressions, as used in reference to the Contractor, shall be interpreted to mean any combination of acts and omissions, which cause the University to reasonably conclude that the Contractor will not complete the Work within the Contract Time, or for the Contract Sum or in substantial compliance with the requirements of the Contract Documents.

Plans - The drawings prepared by the Design Professional and accepted by the University which include elevations, sections, details, schedules, diagrams, information, notes, or reproductions or any of these, and which show the location, character, dimension, or details of the Work. These include the graphic and pictorial portions of the Contract Documents as listed in the Agreement.

Preliminary Project Cost and Schedule Impact Report – The direction from the University to perform changed Work in the absence of agreement between the University and Contractor, which may result in a Change Order upon agreement of the cost or schedule impact.

Project - The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the University or by separate Contractors.

Punchlist - Punchlist items shall include all Work remaining on the Contractor's Incomplete Construction List and additional items documented by the Design Professional, Contractor and University and issued to the Contractor and may be issued with a Certificate of Substantial Completion. It is understood and accepted that the Punchlist included with the Certificate of Substantial Completion may not represent all remaining Work for which the Contractor is obligated and that Punchlist may be expanded prior to Final Completion.

Reasonably inferable - The phrase "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a Contractor familiar with the Project and exercising the care, skill and diligence required by Contract Documents.

Site - The area specified in the Contract Documents and the area made available for the Contractor's operation.

Soft Costs - "Soft Costs" are those costs derived by the University and shall include, but not be limited to, items such as Environmental services, State administration fees, Design Professional fees, moving furniture, fixtures and equipment, and telecommunications, unless otherwise agreed to by the Parties.

Specifications - The term Specifications shall mean the written instructions and requirements prepared by the Design Professional which complement the plans and which describe the manner of executing the Work or the qualities and types of materials to be furnished.

Statement of Probable Cost - The Statement of Probable Cost, as developed by the Contractor, is essential to the budgetary and management processes of the University. The Statement of Probable Cost, once established and accepted by the University, is relied upon by the University for its subsequent budgetary planning and financial needs for the Project.

The Statement of Probable Cost, applicable to either an estimated or actual cost, is the sum of all costs for a completely constructed, functionally ready-for-use project, in accordance with the scope, scheme, concept, and statement, as developed, documented and accepted by the University, and as constructed by the accepted contracting method or methods. The Contractor shall provide Statements of Probable Cost as needed during the Project to aid the University and Design Professional in making scope of work selection decisions, especially during design phase and minimally at the end of each design phase of the Project and shall include all costs included in the Contract Sum. The University shall be responsible for the derivation and provision of all Soft Costs that comprise the Project scope and budget.

Subcontractor - The term "subcontractor" shall mean any business entity under contract to the Contractor for services on or regarding the Project. The term “Subcontractor” as used in the General Conditions shall be synonymous with the term “Trade Contractor” as used in the Contract for Construction Management Services. Nothing contained in this contract shall create any contractual relationship between the University and any subcontractor. However, the University is the intended third-party beneficiary of all contracts for design, engineering or consulting services, all Trade Contracts, subcontracts, purchase orders and other agreements between the Contractor and third parties. The Contractor shall incorporate the obligations of this Agreement into its respective Trade Contracts, subcontracts, supply agreements and purchase orders.

Substantial Completion - "Substantial Completion" shall mean the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the University can occupy or utilize the Work for its intended use. Substantial Completion shall only be determined as described in the Contract Documents.

Unsafe Persons – Unsafe persons shall be those individuals that present a safety hazard to themselves or others.

University - The University is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The term “University” means the University or the University’s authorized representative. Any reference to “Board of Governors” shall be considered to mean “University.”

University's Representative - The University's Representative shall include the Associate Vice President for Facilities Planning and Management, the Senior Director of Design and Construction Services, the Director of Design and Construction Services and the Project Manager. Any project decision on behalf of the University may only be in accordance with the Authorization Matrix.

Vice President of Finance and Business Operations - The Vice President of Finance and Business Operations shall be the level of review over the Associate Vice President of Facilities Planning & Management.

Work - The term “Work” means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, licenses, permits, insurance and services provided or to be provided by the Contractor to fulfill the Contractor’s obligations. The Work may constitute the whole or a part of the Project.

2.00 BIDDING

2.01 Duty to Carefully Examine These Instructions

Prospective bidders for this project shall carefully examine the instructions contained herein and be cognizant of and satisfied with the conditions which must be satisfied prior to submitting a proposal and to the conditions which affect the award of the Contract.

2.02 Disclosure of Bidders

The Contractor shall only accept proposals from Subcontractors who are acceptable to the University.

2.03 Clarification During Bidding

The Contractor shall examine the plans and specifications in preparing the bid and shall immediately report to the Design Professional any omissions, discrepancies, or apparent errors found in the plans and specifications. Prior to the date of bid opening, bidders shall submit a written request for clarification in accordance with the instruction contained in the request for bids. If time permits, such clarification shall be issued in the form of addenda to all bidders.

2.04 Bidding Documents

2.04.1 Bid Proposal Package

Each bidder will receive a bid proposal package containing a standard proposal form which shall be used for bidder's proposal. Each proposal shall give the prices proposed in the manner required by the proposal and shall be signed by the bidder or the bidder's duly authorized representative, with its address and telephone number. If the proposal is made by an individual, the individual's name, postal address, and telephone number must be shown. If made by a partnership, the proposal shall have the signature of all partners or an affidavit signed by all partners empowering one partner as an agent to act in their behalf and the address and telephone number of the partnership. A proposal submitted by a corporation shall show the name of the state in which the corporation is chartered, the name of the corporation, its address and telephone number, and the title of the person who signs on behalf of the corporation.

2.04.2 Listing of Proposed Subcontractors Acceptable to the University

The Contractor will require every subcontractor to provide the name and location of the place of business of each Subcontractor and subordinate Subcontractor which will perform work or labor or render services for the Project.

2.04.3 Bidder's Security

All bids shall be presented under sealed cover and have enclosed an amount as directed in the instructions to bidders as bid security. The bid security may be a cashier's check made payable to Wayne State University or as otherwise directed in the instructions to bidders.

2.05 Bid Proposals

2.05.1 Submission of Proposals

Proposals shall be submitted to the office indicated on the bid proposal. It is the responsibility of the bidder to see that its bid is received in the proper time. Delays in timely receipt of the bid caused by the United States or the University mail system, independent carriers, acts of God, or any other cause shall not excuse late

receipt of a bid. Any bid received after the scheduled closing time for receipt of bids shall not be considered and will be rejected by the University, opened, retained by the University or returned to the bidder unopened.

2.05.2 Withdrawal of Proposals

Any bid may be withdrawn at any time prior to the time fixed for receiving bids but only by a written request from the bidder or its authorized representative filed with the University. An oral, faxed, or telephonic request to withdraw a bid proposal is not acceptable. The withdrawal of a bid shall not prejudice the right of a bidder to file a new bid. This paragraph does not authorize the withdrawal of any bid after the time fixed for receiving bids.

2.05.3 Public Opening of Proposals – SECTION DELETED

2.05.4 Rejection of Irregular Proposals

Proposals may be rejected if they show any alterations of forms, additions not called for, conditional bids, incomplete bids, erasures, or irregularities of any kind. If the bid amount is changed after the amount has been once inserted, the change shall be initialed.

2.05.5 Power of Attorney or Agent

When proposals are signed by an agent, a power of attorney shall either be on file with the University prior to the opening of bids or be submitted with the proposal. Failure to submit a power of attorney may result in the rejection of the proposal as irregular and unauthorized. A power of attorney is not necessary in the case of a general partner of a partnership.

2.05.6 Waiver of Irregularities/University's Right to Reject Bids

The University reserves the right to waive any or all irregularities in proposals submitted. The University reserves the right to reject any or all of the bids submitted.

2.05.7 Exclusion from Contract Documents

Nothing in any of the bidding documents, including but not limited to Request for Proposal form, Notice to Contractors, Proposal by Contractor and Design Professional and bids including any attachments or exhibits by Contractor, shall be considered part of the Contract Documents unless specifically incorporated.

2.06 Mistake in Bid

A bidder shall not be relieved of a bid nor shall any change be made in a bid because of mistakes without consent of the University. Failure by the Contractor to honor its proposal following the opening of bids for any reason shall result in the forfeiture of the Bid Security and possible suspension from future work consideration by and with the University.

2.07 Non-Discrimination

Wayne State University is an affirmative action/equal opportunity employer. The University has a strong commitment to the principle of diversity in all areas.

The Contractor and all Subcontractors shall not discriminate against any employee or applicant for employment because of race, color, religion, national origin, age, sex (including gender identity), height, weight or familial, disability or veteran status. The Contractor will ensure that applicants are employed and that employees are treated during employment, without regard to their race, color, religion, national origin, age, sex (including gender identity), height, weight or familial, disability, or veteran status. Such action shall

include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor shall, in all solicitation or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, age, (including gender identity), height, weight or familial, disability or veteran status.

The Contractor shall comply with all requirements of the Elliott-Larsen Civil Rights Act being 1976 PA 453, as amended.

The Contractor shall also comply with the Persons with Disabilities Civil Rights Act being 1976 PA 220, as amended.

The Contractor shall include, or incorporate by reference, the provisions of this Article 2.07 in each and every subcontract or purchase order and shall provide in each and every subcontract or purchase order that said provisions will be binding upon each and every subcontractor and Supplier and Vendor.

Any breach of the requirements and covenants of this Article 2.07 shall constitute a material breach of the Contract Documents.

3.00 AWARD AND EXECUTION OF CONTRACT

3.01 Contract Bonds and Insurance

3.01.1 Payment and Performance

The Contractor shall forward to the University fully executed Payment & Performance Bonds in the amount of 100 percent of the Contract value on the AIA Form 312 or an equivalent form that is acceptable to the University and in compliance with MCL 129.201 et seq. within five (5) days after execution of the Agreement.

In the same five (5) day period the Contractor shall present to the University, in an acceptable form, evidence of the insurance as required by the Contract Documents. Actual Work shall not commence until the bond and insurance is received by the University. Failure to provide the bond and insurance in the time-frame allowed shall not be cause for an extension of Contract Time.

All alterations, extensions of time, extra and additional work, and other changes authorized by any part of the Contract, including determinations made under Article 7.00, Claims and Disputes, shall be made without securing the consent of the surety or sureties on the Contract bonds.

Whenever the University has cause to believe that the surety has become insufficient, the University may demand in writing that the Contractor provide such further bonds or additional surety, not exceeding that originally required, as in the University's opinion is necessary, considering the extent of the work remaining to be done. Thereafter no payment shall be made to the Contractor or any assignee of the Contractor until the further bonds or additional surety have been furnished.

Contract bonds shall remain in full force and effect during the repair and guarantee period required by the Contract Documents.

3.02 Execution of Contract

The Contract shall be signed by the Contractor in three (3) duplicate counterparts and returned to the University within five days of receipt from the University, not including Saturdays, Sundays, or legal holidays. No Contract shall be binding upon the University until it has been executed by the Contractor and a University official in accordance with the Authorization Matrix.

3.03 Failure or Refusal to Execute Contract

Failure or refusal by the Contractor to execute the Contract within the time set in Section 3.02 shall be just cause for the rescission of the award and the forfeiture of bidder's security. Failure or refusal to file acceptable bonds within the time set in Section 3.01 constitutes a failure or refusal to execute the Contract. If the Contractor fails or refuses to execute the Contract, the University may award the Contract to another contractor and the Contractor shall forfeit his Cashier's Check.

4.00 RESPONSIBILITIES OF THE PARTIES

4.01 University

4.01.1 Information and Services Required of the University

The University shall make available existing surveys describing physical characteristics, legal limitations and utility locations for the site of the Project. The University does not warrant or guarantee the accuracy of the information provided.

Unless otherwise agreed to, the University shall be responsible for the abatement of asbestos containing materials and/or site related environmental hazards. The University will provide documentation regarding the presence of asbestos containing materials or other possible environmental hazards to the Contractor. Second opinions on previously documented clean conditions shall be provided at the Contractor's expense. Positive results regarding environmental hazards shall become the University's obligation. If, during the execution of the Work, previously unknown environmental hazards are encountered, the University shall be allowed a reasonable amount of time to abate environmental hazards.

The University shall provide available information regarding requirements for the Project including plans and specifications for the buildings and a survey of the site where required. The Contractor shall review the plans and specifications and survey, if provided, for errors, inconsistencies, ambiguities or omissions as required by Article 4.02.2, Review of Contract Documents and Field Conditions by Contractor. In the event errors, inconsistencies, ambiguities or omissions in the plans, drawings, and specifications were not reasonably identifiable in the Contractor's review as specified in Article 4.02.2, Review of Contract Documents and Field Conditions by Contractor, and such errors, inconsistencies, ambiguities or omissions result in changes in time and cost, the University may make reasonable adjustment in the Contract Sum in accordance with Article 6.00, CHANGES IN THE WORK of the General Conditions.

Except for permits and fees, which are the responsibility of the Contractor under the Contract Documents, the University shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

Information or services under the University's control shall be furnished by the University with reasonable promptness to avoid delay in orderly progress of the Work.

All reproduction required for construction is the obligation of the Contractor.

4.01.2 University's Right to Stop the Work

If, in the University's determination, the Contractor fails to correct work which is not in accordance with the requirements of the Contract Documents as required, or persistently fails to carry out work in accordance with the Contract Documents, the University Representative, by written order may order the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the University to stop the Work shall not give rise to a duty on the part of the University to exercise this right for the benefit of the Contractor or any other person or entity.

It is understood that while the Contractor is fully responsible for the safety of the jobsite, and for the methods of its execution, if the University deems that the Contractor is failing to provide safe conditions, the University may stop or restrict the Work under such conditions. However, this right shall not create such duty on the University. Under no circumstance shall the Contractor be granted a time extension or Contract Sum increase for conditions resulting by a stop work order occurring as a consequence of the Contractor's failure to maintain safe working conditions.

4.01.3 University's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a three (3) day period after receipt of written notice from the University to commence and continue correction of such default or neglect with diligence and promptness, the University may after such three (3) day period, without prejudice to other remedies the University may have, correct such deficiencies. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Design Professional's additional services and expenses made necessary by such default, neglect or failure. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the University.

4.01.4 University's Right to Audit

4.01.4.1

Contractor's records, which shall include but not be limited to accounting records (hard copy, as well as computer readable data if it can be made available), written policies and procedures; subcontract files (including proposals of successful and unsuccessful bidders, bid recaps, etc.); original estimates; estimating work sheets, correspondence; change order files (including documentation covering negotiated settlements); backcharge logs and supporting documentation; general ledger entries detailing cash and trade discounts earned, insurance rebates and dividends; and any other supporting evidence deemed necessary by the University to substantiate changes related to the Agreement (collectively referred to as "Records") shall be maintained in accordance with Generally Accepted Accounting Principles and open to inspection and subject to audit and/or reproduction by University's agent or its authorized representative to the extent necessary to adequately permit evaluation and verification of Cost of the Work, and any invoices, change order, payments or claims submitted by the Contractor or any of his payees pursuant to the execution of the contract that are or have been charged on a basis other than a lump sum approved in writing by the University.

4.01.4.2

Such audits may require inspection and copying from time to time and at reasonable times and places of any and all information, materials and data of every kind and character, including without limitation, records, books, papers, documents, subscriptions, recordings, agreements, purchase order, leases, contracts, commitments, arrangements, notes, daily diaries, superintendent reports, drawings, receipts, vouchers and memoranda, and any and all other agreements, sources of information and matters that may in University's judgment have any bearing on or pertain to any matters, rights, duties or obligations under or covered by any Contract Documents. Such records subject to audit shall also include, but not be limited to, those records necessary to evaluate and verify direct and indirect costs, (including overhead allocations) as they may apply to costs associated with this Agreement.

4.01.4.3

The University or its designee shall be afforded access to all of the Contractor's Records, and shall be allowed to interview any of the Contractor's employees, pursuant to the provisions of this article throughout the term of this contract and for a period of five (5) years after Final Payment or longer if required by law. To the extent feasible, the Construction Manager's records shall remain confidential, and the University's third party auditors will enter into a confidentiality agreement between and among the University, the third-party auditor and the Contractor prior to any audits being conducted.

4.01.4.4

Contractor shall require all Subcontractors and material suppliers (payees) to comply with the provisions of this article by insertion of the requirements hereof in a written agreement between Contractor and payee so as to allow the University to verify any amounts charged to the Project by a payee on a basis other than a lump sum approved in writing by the University. Such requirements will also apply to Subcontractors and all lower tier Subcontractors. Contractor shall cooperate fully and shall cause all of Contractor's Subcontractors to cooperate fully by furnishing or making available to University from time to time whenever requested in an expeditious manner any and all such information, materials and data.

4.01.4.5

University's agent or its authorized representative shall have access to the Contractor's facilities, shall have access to all necessary records; and shall be provided adequate and appropriate work space, in order to conduct audits in compliance with this article.

4.01.4.6

Contractor agrees that University's designee shall have the right to examine the Contractor's records (during the contract period and up to five (5) years after Final Payment is made on the contract) to verify the accuracy and appropriateness of the pricing data used to price change proposals or claims. Contractor agrees that if the University determines the cost and pricing data submitted (whether approved or not) was inaccurate, incomplete, not current or not in compliance with the terms of the contract regarding pricing of change orders, an appropriate contract price reduction will be made. Such post-approval contract price adjustments will apply to all levels of contractors and/or subcontractors and to all types of change order proposals specifically including lump sum change orders, unit price change orders and cost-plus change orders.

4.01.4.7

If an audit, inspection or examination in accordance with this article, discloses overcharges (of any nature) by the Contractor to the University in excess of five percent (5%) of the total contract billings, the actual cost of the University's audit shall be reimbursed to the University by the Contractor. Any adjustments and/or payments which must be made as a result of any such audit or inspection of the Contractor's invoices and/or records shall be made within a reasonable amount of time (not to exceed 90 days) from presentation of University's findings to Contractor.

4.02 Contractor

The Contractor recognizes the relationship of trust and confidence established between the University and the Contractor by this Contract. The Contractor shall furnish the University with its best skill and judgment and fully cooperate with the University in furthering its best interests. All the Work is to be done in the best manner by persons skilled in the type of Work to be performed.

4.02.1 Contractor's Responsibility for the Work

The Contractor shall be responsible to the University for all Work performed under this Contract. For purposes of assessing responsibility to the Contractor by the University, all persons engaged in the Work shall be considered employees of the Contractor. The Contractor shall give its personal attention to the fulfillment of the Contract and keep all phases of the Work under its control.

4.02.2 Review of Contract Documents and Field Conditions by Contractor

The Contractor shall have a continuing duty to read, carefully study and compare the Contract Documents as defined in Article 1.00, DEFINITIONS, and product data with each other and with information furnished by the University. The Contractor shall perform construction coordination and constructability review of the Contract Documents and shall at once report to the Design Professional and the University, any errors, inconsistencies, ambiguities and omissions before proceeding with the affected Work. The Contractor shall be liable to the University for damage resulting from the Contractor's failure to properly perform such reviews or failure to promptly report any errors, inconsistencies, ambiguities or omissions identified in the Contract Documents to the Design Professional and the University. If the Contractor performs any construction activity that involves such error, inconsistency, ambiguity or omission in the Contract Documents without such notice to the Design Professional and the University, the Contractor shall assume responsibility for such performance and shall bear all costs attributable for correction. If the Contractor submits authorized substitutes that cost in excess of the Contract Sum or which cause coordination conflicts, the Contractor shall bear all costs attributable to correction.

The Contractor shall perform the Work in accordance with the Contract Documents.

The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Design Professional and University at once.

4.02.3 Supervision and Construction Procedures

The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible to the University for and have control over construction means, methods, techniques, sequences and procedures and for coordinating all portions of the Work under the Contract, unless Contract Documents give other specific instructions concerning these matters.

The Contractor shall be responsible to the University for acts and omissions of the Contractor's employees, subcontractors and their agents and employees, and other persons performing portions of the Work under a Contract with the Contractor.

The Contractor agrees to furnish efficient business administration, coordination, supervision and superintendence of the Work and to furnish at all times a competent and adequate administrative and supervisory staff and an adequate supply of workmen and materials to perform the Work in the best and most sound way in the most expeditious and economical manner consistent with the interests of the University. The Contractor agrees from time to time at the University's request to furnish estimates and technical advice as to construction methods and equipment to the University and Design Professional.

The Contractor agrees to cooperate with the Design Professional, University's Representative, commissioning agents, and all persons or entities retained by the University to provide consultation and advice, and to coordinate the Work with the Work of such parties so that the Project shall be completed in the most efficient and expeditious manner. In the event that Contractor's failure to efficiently sequence or coordinate the Work results in additional costs to the University, the Contractor shall promptly reimburse the University for the actual costs incurred. Contractor shall remain responsible for any delays resulting from its failure to efficiently coordinate and schedule the Work; any delays or extensions shall be addressed as provided in Sections 4.08, 4.09 and 4.10 of these General Conditions.

4.02.4 Quality Control

The Contractor shall be fully responsible for the quality of materials and workers' skill in the Project. The Contractor shall not rely upon the inspection and testing provided by the University or Design Professional other than those special inspections and tests performed at the University's direction for which there are written reports. Reports issued by the University's commissioning agent are to be considered complementary in nature and in no way relieve the Contractor of its responsibility to deliver Work in compliance with the Contract Documents.

The Contractor shall inspect the Work of the subcontractors on the Project, while the Work is being performed through final completion and acceptance of the Project by the University to assure that the Work performed and the materials furnished are in strict accordance with the drawings and specifications; the Contractor shall also inspect the Work to verify that Work on the Project is progressing on schedule.

The Contractor shall be responsible for inspection of portions of Work performed under this Contract to determine that such portions are in proper condition to receive subsequent Work. In the event that it becomes necessary to interpret the meaning and intent of the plans and specifications during construction and the meaning is not reasonably inferable, the Contractor shall submit as a Request for Information (RFI) to the Design Professional to make the interpretation in writing and transmit same to appropriate Subcontractors and the University in accordance with the procedures established in section 5.02 of these General Conditions.

The Contractor shall not be relieved of obligations to performing the Work in accordance with the Contract Documents either by activities or duties of the Design Professional in the Design Professional's administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor.

4.02.5 Labor and Materials

The Contractor shall provide an analysis of the types and quantity of labor required for the Project and review the availability of the appropriate categories of labor required for all Work, and the Contractor shall be responsible to provide the necessary and adequate labor needed to complete the Project by the Contract Time. During the course of the Project, the Contractor shall endeavor to maintain harmonious labor relations on the Project.

Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, , transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

Unless otherwise noted in the Information to Bidders, the Contractor shall provide and pay for water, heat, electric and other utilities.

The Contractor shall enforce strict discipline and good order among the Contractor's employees and Subcontractors and others carrying out the Work of the Contract. The Contractor shall not permit employment of unsafe persons or persons not skilled in tasks assigned to them.

4.02.6 Disputes with Subcontractors

Wherever any provision of any section of the Plans and Specifications conflicts with any agreement or regulation of any kind at any time in force among members of any Trade Associations, Unions or Councils which regulate or distinguish what Work shall or shall not be included in the Work of any particular trade, the Contractor shall make all necessary arrangements to reconcile any such conflict without delay, damage, increase to the Contract Sum or recourse to the University. The University will not arbitrate disputes among subcontractors nor between the Contractor and one or more subcontractors concerning responsibility for performing any part of the Project.

In case the progress of the Work is affected by any undue delay in furnishing or installing any items of material or equipment required under the Contract Documents because of conflict involving any agreement or regulation of the type described above, the University's Representative may require that other material or equipment of equal kind and quality be provided at no additional cost to the University.

4.02.7 Project Manager and Superintendent

The Contractor shall have at the Project site, during the full term of the Contract, an approved, competent project staff, which may include a Project Manager and Superintendent, and any necessary assistants, all satisfactory to the University's Representative and in accordance with the Contract Documents and the Contractor's Staffing Plan. The Project Manager or the Superintendent shall not be changed, except with the written consent of the University's Representative unless the Project Manager or the Superintendent ceases to be in the employ of the Contractor. The Project Manager or the Superintendent shall represent the Contractor and all directions given to either of them by the University or the University's Representative shall be as binding as if given to the Contractor. All directions and communications shall be confirmed in writing.

If a Project Manager or a Superintendent approved by the University's Representative ceases to be in the Contractor's employ, the Contractor shall immediately replace him with a person acceptable to the University's Representative. The University in its sole discretion shall have the right to require the removal of any agent or employee of the Contractor or any subcontractor without cause at any time.

4.02.8 Taxes

The Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor which are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect and such taxes are included in the Contract Sum.

4.02.9 Permits and Notices

The Contractor shall comply with and give notices required by laws, ordinances, rules, regulations, policies and lawful orders of public authorities and the University bearing on performance of the Work.

4.02.10 Allowances

The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such stated amounts including identified unit cost, but the Contractor shall not be required to employ persons or entities against which the Contractor makes reasonable objection. Unless otherwise provided in the Contract Documents:

1. materials and equipment under an allowance shall be selected promptly by the University to avoid delay in the Work;

2. allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

3. the Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the allowances;

4. if allowance assumptions prove inappropriate, the Contract Sum may be adjusted accordingly by Change Order. The amount of the Change Order shall reflect the difference between actual costs and the allowances.

4.02.11 Use of Site

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. The site shall be safely maintained and kept clean, orderly and neat.

4.02.12 Safety

The Contractor shall protect adjoining property and nearby buildings, roads, and other facilities and improvements from dust, dirt, debris and other nuisances arising out of Contractor's operations or storing practices. Dust shall be controlled by sprinkling, misting or other effective methods acceptable to University and in accordance with legal requirements. An erosion and sedimentation control program shall be initiated, which includes measures addressing erosion caused by wind and water and sediment in runoff from site. A regular watering program shall be initiated to adequately control the amount of fugitive dust.

The Contractor is knowledgeable of and understands that the University may intend to maintain occupancy of certain portions of the existing facility. The Contractor shall exercise caution at all times for the protection of persons and their property. The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury or loss to: (1) employees on the Work site together with Subcontractors and other persons who may be affected thereby; (2) the Work and materials and equipment to be incorporated therein, whether in storage on or offsite, under care, custody or control of the Contractor or the Contractor's Subcontractors or sub-subcontractors; and (3) other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures and utilities not designated for removal, relocation or replacement in the course of construction. The Contractor shall install adequate safety guards and protective devices for all equipment and machinery, whether used in the Work or permanently installed as part of the Project.

The Contractor shall also provide and adequately maintain all proper temporary walks, roads, guards, railings, lights, and warning signs. The Contractor shall comply with all applicable laws relating to safety precautions. The Contractor shall establish and maintain and update as required a Project Specific Safety Program.

The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the University and Design Professional.

The Contractor shall require each and every one of its subcontractors and Trade Contractors to comply with all of the provisions of this section.

The Contractor shall not load or permit any part of the construction or site to be loaded so as to endanger its safety.

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in the Contract.

4.02.13 Hazardous Condition

The University and/or the Design Professional may bring to the attention of the Contractor a possible hazardous situation in the field regarding the safety of personnel on the site. The Contractor shall be responsible for verifying that all local, state, and federal workplace safety guidelines are being observed. In no case shall this right to notify the Contractor absolve the Contractor of its responsibility for monitoring safety conditions. Such notification shall not imply that anyone other than the Contractor has assumed any responsibility for field safety operations.

Explosives shall not be used without first obtaining written permission from the University and then shall be used only with the utmost care and within the limitations set in the written permission and in accordance with prudence and safety standards required by law. Storage of explosives on the Project site or University is prohibited. Powder activated tools are not explosive for purposes of this Article; however, such tools shall only be used in conformance with State safety regulations.

The Contractor shall report in writing to the University's Representative, within eight (8) hours, all accidents whatsoever arising out of, or in connection with, the performance of the Work, whether occurring on or off the Site, which caused death, personal injury or property damage, giving full details and statements of witnesses. In addition, if death or serious injuries or serious damages are caused, the accident shall be reported immediately by telephone or messenger to the University Representative and the University Police at (313) 577-2222. If any claim is made by anyone against the Contractor or any subcontractor on account of any accident, the Contractor shall report promptly the facts in writing to the University's Representative, giving full details of the claim.

4.02.14 Cutting, Patching and Sequencing

The Contractor shall be responsible for all cutting, fitting or patching required to complete the Work and to ensure the complete and effective coordination of the Work.

The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the University or separate Contractors by cutting, patching or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter such construction by the University or a separate Contractor except with written consent of the University and of such separate Contractor; such consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold from the University or a separate Contractor the Contractor's consent to cutting or otherwise altering the Work.

4.02.15 Access to Site

The Contractor shall at all times permit the University and the Design Professional to visit and observe the Work, and the shops where Work is in preparation, and shall maintain proper facilities and provide safe access for such observation. Work requiring testing, observation or verification shall not be covered up without such test, observation, or approval. Appropriate advance coordination of such testing, observation or verification is expected. University must provide prior written approval for any work to be performed on a Saturday, Sunday, or holiday. In the event that Contractor desires to perform Work on a weekend or holiday, Contractor shall provide a minimum of 48 hours written notice to the University of such desire prior to performing such Work. However, if the Work involves an actual or potential interruption to a utility or service, the Contactor shall provide no less than seven (7) days' written notice to the University.

The Contractor acknowledges that during the performance of the Work, the affected building and surrounding campus buildings will remain occupied and will require access by the public. The Contractor further acknowledges that other Contractors will be working on or near the Project site to accomplish the University's purposes and projects. To the greatest extent possible, the Contractor shall cooperate fully with the University and its guests, students, employees, invitees, and other Contractors in performing the Work required under the Contract. The Contract Sum includes any and all reasonably necessary costs expended to minimize interference with the University's activities as well as to coordinate schedules with other contractors' projects as required by the University.

4.02.16 Burden for Damage

From the issuance of the official Notice to Proceed until the formal acceptance of the Project by the University, the Contractor shall have the charge and care of and shall bear all risk of damage to the Project

and materials and equipment for the Project other than damage directly caused by the University or the University's other contractors.

4.02.17 Payments by Contractor

The Contractor agrees to promptly pay all subcontractors upon receipt of each progress payment, unless otherwise agreed in writing by the parties, the respective amounts allowed Contractor on account of the Work performed by its subcontractors to the extent of each such subcontractor's interest therein.

In the event the University becomes informed that the Contractor has not paid a subcontractor as herein provided, the University shall have the right, but not the duty, to issue future checks in payment to the Contractor of amounts otherwise due hereunder naming the Contractor and such subcontractor as joint payees. Such joint check procedure, if employed by the University, shall create no rights in favor of any person or entity beyond the right of the named payees to payment of the check and shall not be deemed to commit or obligate the University to repeat the procedure in the future. This provision shall not supersede the procedures set forth in Article 8.00 of these General Conditions.

4.02.18 Responsibility to Secure and Pay for Permits, Licenses, Utility Connections, Etc.

The Contractor shall secure all permits and licenses required for any operations required under this Contract and shall pay all costs relating thereto as well as all other fees and charges that are required by the United States, the State, the county, the city, a public utility, telephone company, special district, or quasi-governmental entity. It is the responsibility of the Contractor to ascertain the necessity of such permits and licenses in preparing its bid, Contract Sum and include in its bid, Contract Sum the cost thereof, as well as any time requirements for securing such permits and licenses.

4.02.19 Patented or Copyrighted Materials

The Contractor shall pay all royalties and license fees for the use of patented or copyrighted processes or materials. The Contractor shall defend suits or claims for infringement of patent rights and shall hold the University and Design Professional harmless from loss on account thereof, but shall not be responsible for such defense or loss when a particular design, process or product of a particular manufacturer or manufacturers is required by the Contract Documents. However, if the Contractor has reason to believe that the required design, process or product is an infringement of a patent, the Contractor shall be responsible for such loss unless such information is promptly furnished to the Design Professional and University in writing.

4.02.20 Property Rights in Materials and Equipment

Nothing in the Contract shall be construed as vesting in the Contractor any property right in the materials or equipment after the materials or equipment have been attached to or permanently placed in or upon the Work or the soil or after payment has been made for fifty percent or more of the value of the materials or equipment delivered to the site of the Work whether or not they have been so attached or placed. All such materials or equipment shall become the property of University upon being so attached or placed, or upon payment of fifty percent or more of the value of the materials or equipment delivered on the site but not yet installed and the Contractor warrants that all such property shall pass to the University free and clear of all liens, claims, security interests, or encumbrances.

4.02.21 Utilities

The Contractor shall refer to and abide by the policies included in the Supplementary General Conditions and shall provide the notices as required by University's Utility Disturbance and Interruption Request form.

The Contractor shall provide as-built drawings of all utilities encountered and constructed for the University, indicating the size, horizontal location, and vertical location based on the Project bench mark or a stable datum.

Unless otherwise specifically stated, the Contractor shall provide or otherwise make all arrangements for utilities required to deliver the Work. .

4.02.22 Asbestos and Hazardous Materials

The Contractor is prohibited from installing any asbestos containing materials or products, and other prohibited and hazardous materials in the Work. The Contractor shall be responsible for removal and replacement costs should it be determined this provision has been violated, regardless of whether the job has been completed.

4.02.23 Photographic Site Survey

Contractor shall perform a photographic survey of construction site and adjoining structures prior to commencing Work. The survey shall be provided to the University and shall include photographs of pathways, flat concrete paving, foundations, walls, landscaping.

4.02.24 Compliance with University Policies on Drugs, Alcohol and Tobacco.

The University requires Contractors, Subcontractors and sub-subcontractors with access to the work site to abide by the University's policies on drugs, alcohol and tobacco, which can be found at: http://bog.wayne.edu/2_20_04.php and http://policies.wayne.edu/administrative/00-03-smoke-free-campus.php. All costs for initial and period testing shall be borne by the Contractor

1. The Contractor and University shall reserve the right to test any and/or all site personnel at random periods and without notice.

    a. The Contractor shall be responsible for all costs including wages for those individuals testing drug or alcohol-free at the Contractor's direction.

    b. Subcontractors shall be responsible for all costs including wages for those individuals not testing drug or alcohol-free at the direction of the Contractor, and the Subcontractor shall immediately remove those individuals from the site.

2. Any individual not testing drug or alcohol-free shall not be allowed to return to the site under any circumstances.

4.03 Design Professional

4.03.1 Design Professional's Administration of Contract

The Design Professional will provide one or more Project Representatives to assist in the administration of the Contract as described in the Contract Documents, and to assist the University's Representative (1) during the construction, (2) until final payment is due and (3) with the University's concurrence, from time to time during the correction and warranty period. The Design Professional will advise and consult with the University on issues relating to contract performance and interpretation. The Design Professional will have no authority to act on behalf of the University except as provided in the Contract Documents, unless otherwise modified by written instrument in accordance with other provisions of the Contract.

The Design Professional will visit the site at intervals defined in the Design Professional's Proposal to become familiar with the progress and quality of the completed Work and to determine if the Work is being performed in a manner indicating that the Work, when completed, will be in accordance with the Contract Documents. On the basis of on-site observations, the Design Professional will keep the University and Contractor informed of progress of the Work by written field reports, and will endeavor to guard the University against defects and deficiencies in the Work.

The Design Professional will not have control over or charge of and will not be responsible for construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. The Design Professional will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents. The Design Professional will not have control over or charge of and will not be responsible for acts or omissions of the Contractor, subcontractors, or their agents or employees, or of any other persons performing portions of the Work.

4.03.2 Communications Facilitating Contract Administration

The Design Professional and Contractor shall communicate directly concerning the Project and shall keep the University advised of their communications. Communications by and with the Design Professional's consultants shall be through the Design Professional. Communications by and with subcontractors and material suppliers shall be through the Contractor. Communications by and with separate Contractors shall be through the University.

4.03.3 Evaluation of Applications for Payment

Based on the Design Professional's observations and evaluations of the Contractor's Applications for Payment, the Design Professional must approve and sign any Contractor Applications for Payment as an express condition precedent to release of any progress or final payment. In the absence of Design Professional, the University will review and authorize applications for payment.

The Design Professional will have authority to reject Work which does not conform to the Contract Documents. Whenever the Design Professional considers it necessary or advisable for implementation of the intent of the Contract Documents, the Design Professional will have authority to require additional observation or testing of the Work in accordance with section 5.06, whether or not such Work is fabricated, installed or completed. However, neither this authority of the Design Professional nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Design Professional to the Contractor, subcontractors, material and equipment suppliers, their agents or employees, or other persons performing portions of the Work.

4.03.4 Review of Shop Drawings, Product Data and Samples

The Design Professional shall review and approve or take other appropriate action upon the Contractor's submittal of Shop Drawings, Product Data and Samples. The Design Professional's action will be taken within 10 days from receipt so as not to cause delay in the Work or in the activities of the University, Contractor or separate Contractors, while allowing sufficient time in the Design Professional's professional judgment to permit adequate review. Review of such submittal is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Design Professional's review of the Contractor's submittal shall not relieve the Contractor of the obligations under Article 5.04. The Design Professional's review shall not constitute approval of safety precautions or, unless otherwise specifically stated by the Design Professional, of any construction means, methods, techniques, sequences or procedures. The Design Professional's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

4.03.5 Site Observations to Determine Substantial and Final Completion

The Design Professional will conduct observations to determine the date or dates of Substantial Completion and the date of Final Completion, will receive and forward to the University for the University's review and retention all written warranties and related documents required by the Contract and assembled by the Contractor, and will issue an approval of final payment upon compliance with the requirements of the Contract Documents.

4.04 Delegation of Performance and Assignment of Money Earned

The performance of all or any part of this Contract may not be delegated by the Contractor or Design Professional without the written consent of the University. Consent will not be given to any proposed delegation which would relieve the Design Professional, the Contractor or its surety of their responsibilities under the Contract.

The Contractor may assign moneys due or to become due under the Contract, only upon written consent of the University. Assignments of moneys earned by the Contractor shall be subject to proper retention in favor of the University and to all deductions provided for in the Contract and such moneys shall be subject to being used by the University for the completion of the Work in the event the Contractor is in default. Any assignment attempted without the written consent of the University shall be void.

4.05 Contractor's Insurance

The Contractor shall not commence Work under this Contract until it has obtained all the insurance required by the Contract Documents and such insurance has been approved by the University; likewise, no subcontractor or subconsultant shall be allowed to commence Work until the insurance required has been obtained. The Contractor shall, at its expense, purchase and maintain in full force and effect such insurance as will protect itself and the University from claims, such as for bodily injury, death, and property damage, which may arise out of or result from the Work required by the Contract Documents, whether such Work is done by the Contractor, by any subcontractor, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable. The types of such insurance and any additional insurance requirements are specified herein with the amounts and limits set forth in the Supplementary General Conditions.

4.05.1 Policies and Coverage

The following policies and coverages shall be furnished by the Contractor:

(1) Comprehensive or Commercial Form General Liability Insurance on an "Occurrence" form covering all Work done by or on behalf of the Contractor and providing insurance for bodily injury, personal injury, property damage, and Contractual liability. Except with respect to bodily injury and property damage included within the products and completed operations hazards, the aggregate limit shall apply separately to work required of the Contractor by these Contract Documents. This insurance shall include the contractual obligations assumed under the Contract Documents and specifically section 4.06.

(2) Business Automobile Liability Insurance on an "Occurrence" form covering owned, hired, leased, and non-owned automobiles used by or on behalf of the Contractor and providing insurance for bodily injury, property damage, and Contractual liability.

(3) Worker's Compensation and Employer's Liability Insurance as required by Federal and Michigan law. The Contractor shall also require all of its Subcontractors to maintain this insurance coverage. The Contractor acknowledges and shall abide by the University's prohibition on the use of 1099 independent contractors and owner/operator business entities wherein such individuals are not able

to secure and maintain such insurance. The Contractor shall ensure that all classifications of laborers and construction mechanics performing Work on the Project job site are traditional employees of the Contractor or any Trade Contractor for any tier thereof, and that each is covered by such insurance.

(4) The Umbrella Excess Liability insurance must be consistent with and follow the form of the primary policies, except that Umbrella Excess Liability insurance shall not be required for the Medical Expense Limit.

(5) Builder's Risk Insurance: The Contractor, at his sole expense, shall purchase and maintain property insurance upon the entire Project for the full replacement cost at the time of any loss. This insurance shall include “All Risk” coverage against physical loss or damage including the perils of Fire and Extended Coverage, Theft, Vandalism, and Malicious Mischief, Transit and Collapse. The Contractor will be responsible for any co-insurance penalties and/or deductibles.

(6) Professional Liability (Errors and Omissions) including tail-coverage for claims made after final completion.

4.05.2 Proof of Coverage

Certificates of Insurance or Declarations pages as may be requested by the University, as evidence of the insurance required by these Contract Documents, shall be submitted by the Contractor to the University. The Certificates of Insurance and Declarations shall state the scope of coverage and deductible, and list the University as an additional insured as required by Section 4.05.04 below. Any deductible shall be the Contractor's liability. The Declarations shall provide for no cancellation or modification of coverage without thirty (30) days prior written notice to the University. Acceptance of Certificates of Insurance or Declarations pages by the University shall not in any way limit the Contractor’s liabilities under the Contract Documents. The Contractor shall maintain required insurance for the entire duration of the Contract. In the event the Contractor does not comply with these insurance requirements, the University may, at its option, provide insurance coverage to protect the University; the cost of such insurance shall be deducted from the Contract Sum or otherwise paid by the Contractor. Renewal certifications shall be filed in a timely manner for all coverage until the Project is accepted as complete as requested by the University. Upon the University's request, the Contractor shall provide copies of the policies obtained from the insurers.

4.05.3 Subcontractor's Insurance

The Contractor shall either require Subcontractors to carry insurance as set forth in the CCIP Insurance Manual and the Subcontract, or the Contractor shall insure the activities of the Subcontractors in the amount, types and form of insurance required under by the Contract Documents. If the Contractor elects to have its Subcontractors purchase individual insurance policies, the Contractor shall cause its trade contracts and subcontracts to include a clause requiring that copies of any insurance policies which provide coverage to the Work shall be furnished to the University upon request. The Contractor shall supply the University with a list of all Subcontractors, including those enrolled in the CCIP coverage, and copies of the enrolled Subcontractors’ certificates of insurance evidencing coverage, showing whether or not they have individual insurance policies and certifying that those subcontractors without individual insurance policies are insured by the Contractor.

4.05.4 Scope of Insurance Coverage

The Contractor’s insurance as required by the Contract Documents (including subcontractors’ insurance), by endorsement to the policies and the Certificates of Insurance, shall include the following and may be presented in the form of a rider attached to the Certificates of Insurance:

(1) The Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents including the Design Professional, shall be included as additional insured under the general liability, builder's risk and automobile liability policies for and relating to the Work to be performed by the Contractor and subcontractors. This shall apply to all claims, costs, injuries, or damages.

(2) A Severability of Interest Clause stating that, "The term 'insured' is hereby used severally and not collectively, but the inclusion herein of more than one insured shall not operate to increase the limits of the insurer's or insurers' liability."

(3) A Cross Liability Clause stating that, "In the event of claims being made under any of the coverages of the policy or policies referred to herein by one or more insured hereunder for which another or other insured hereunder may be liable, then the policy or policies shall cover such insured or insured against whom a claim is made or may be made in the same manner as if separate policies had been issued to each insured hereunder. Nothing contained herein, however, shall operate to increase the insurer's limits of liability as set forth in the insuring agreements."

(4) The Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents, shall not by reason of their inclusion as insured incur liability to the insurance carriers for payment of premiums for such insurance. However, the Board of Governors of Wayne State University may, in their sole discretion after receiving a notice of cancellation for nonpayment, elect to pay the premium due and deduct such payment from any sums due to the Contractor or recover the amount paid from the Contractor if the sums remaining are insufficient.

(5) Coverage provided is primary and is not in excess of or contributing with any insurance or self-insurance maintained by the Board of Governors of Wayne State University, the University, their officers, employees, representatives and agents.

4.05.5 Miscellaneous Insurance Provisions

The form and substance of all insurance policies required to be obtained by the Contractor shall be subject to approval by the University. All such policies shall be issued by companies lawfully authorized to do business in Michigan and be acceptable to the University. All property insurance policies to be obtained by the Contractor shall name the University as loss payee as its interest, from time to time, may appear.

The Contractor shall, by mutual agreement with the University and at the University's cost, furnish any additional insurance as may be required by the University. The Contractor shall provide Certificates of Insurance evidencing such additional insurance.

Should the Project involve asbestos abatement, the Contractor or subcontractor, as appropriate, shall provide asbestos liability insurance.

The Contractor acknowledges that the University is self-insured and participates in the Michigan Universities Self-Insurance Corporation program and the Contractor agrees that the University is not required to provide or purchase any additional insurance with respect to this Project or the Work required by the Contractor for the Project.

4.05.6 Loss Adjustment

Any insured loss is to be adjusted with the Contractor and made payable jointly to the University and the Contractor. The Contractor shall cooperate with the University in a determination of the actual cash value or replacement value of any insured loss. Any deductible amount shall be the responsibility of the Contractor.

4.05.7 Compensation Distribution

The University upon the occurrence of an insured loss shall account for any money so received and shall distribute it in accordance with such agreement as the interested parties may reach. Claim payments received shall be distributed proportionately according to the actual percentages of losses to both. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate contract change order. Any dispute shall be resolved by the University.

4.05.8 Waivers of Subrogation

The University and Contractor waive all rights against (1) each other and any of their subcontractors, subcontractors, agents and employees, each of the other, and (2) the Design Professional, Design Professional's consultants, separate Contractors if any, and any of their subcontractors, sub-subcontractors, agents and employees, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this paragraph or other property insurance applicable to the Work, except such rights as they have to proceeds of such insurance held by the University as fiduciary. The University or Contractor, as appropriate, shall require of the Design Professional, Design Professional's consultants, separate Contractors, if any, and the subcontractors, sub-subcontractors, agents and employees of any of them, by appropriate agreements, written where legally required for validity, similar waivers each in favor of other parties enumerated herein. The policies shall provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity had an insurable interest in the property damaged.

4.06 Indemnification

4.06.1

To the fullest extent permitted by law, the Contractor shall hold harmless, defend, and indemnify the Board of Governors of Wayne State University, the University, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or are alleged to be resulting from, or relating to (1) the failure of the Contractor to perform its obligations under the Contract or the performance of its obligation in a willful or negligent manner; (2) the inaccuracy of any representation or warranty by the Contractor given in accordance with or contained in the Contract Documents; and (3) any claim of damage or loss by any subcontractor, or supplier, or laborer against the University arising out of any alleged act or omission of the Contractor or any other subcontractor, or anyone directly or indirectly employed by the Contractor or any subcontractor.

4.06.2

To the fullest extent permitted by law, the Contractor shall be liable for and hereby agrees to defend, discharge, fully indemnify and hold the University harmless from and against any and all claims, demands, damages, liability, actions, causes of action, losses, judgments, costs and expenses of every nature (including investigation costs and/or expenses, settlement costs, and attorney fees and expenses incident thereto) sustained by or asserted against the University arising out of, resulting from, or attributable to the performance or nonperformance of any Work and/or obligation covered by the Contract or to be undertaken in connection with the construction of the Project contemplated by the Contract (collectively, "Claim"), including, but not limited to, any Claim for: (a) any personal or bodily injury, illness or disease, including death at any time resulting therefrom of any person, (including, but not limited to, employees of the University, the Contractor, any subcontractor, and any materialman and the general public); (b) any loss, damage or destruction of any property; (c) any loss or damage to the University's operations, arising out of, resulting from, or attributable in whole or in part to (i) any negligence or other act or omission of the Contractor, and any subcontractor, any materialman and/or any other person or any of the directors, officers, employees or agents of any of them or (ii) any defects in material or equipment furnished hereunder; (d) any payments

allegedly owed to subcontractors, sub-subcontractors or materialmen; (e) any acts or omissions relative to conditions of safety and protection of persons on the Project site; and/or (f) any act or omission relative to the Contractor's breach of obligations and regarding non-discrimination as set forth in these General Conditions. The Contractor shall not be liable hereunder to indemnify the University against liability for damages arising out of bodily injury to persons or damage to property caused by or resulting from the sole negligence or willful misconduct of the University, its agents or employees. The Contractor, at its own cost and expense, shall take out and maintain at all times during the effective period of the Contract, contractual liability insurance insuring the performance by the Contractor of its contractual duties and obligations under this Article, which insurance shall name the University as additional insured and shall be in form and amount and from an insurance company satisfactory to the University. The Contractor's duty to fully indemnify the University shall not be limited in any way by the existence of this insurance coverage.

4.06.3

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University harmless from and against all costs and expenses of every nature (including attorney fees and expenses incident thereto) incurred by the University in collecting the amounts due from the Contractor, or otherwise enforcing its rights, under the indemnifications described in this Article.

4.06.4

In claims against any person or entity indemnified under this Article made by an employee of the Contractor or a subcontractor, or indirectly employed by either of them, or anyone for whose acts either made by liable, the indemnification obligation under this Article shall not be limited by any limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a subcontractor under workers compensation laws, disability benefit laws, or other laws providing employee benefits.

4.06.5

The indemnification obligations under this Article shall not be limited by any assertion or finding that the person or entity indemnified is liable by reason of a non-delegable duty.

4.06.6

The Contractor shall hold harmless, defend, and indemnify the University from and against losses resulting from any claim of damage made by any separate Contractor of the University against the University arising out of any alleged acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by either the Contractor or subcontractor, or anyone for whose acts either the Contractor or subcontractor may be liable.

4.06.7

The Contractor shall hold harmless, defend and indemnify the Design Professional and the separate Contractors of the University from and against losses to the extent they arise from the negligent acts or omissions or willful misconduct of the Contractor, a subcontractor, anyone directly or indirectly employed by the Contractor or subcontractor, or anyone for whose acts the Contractor or subcontractor may be liable.

4.07 Occupancy by University Prior to Acceptance

The University may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by public authorities having jurisdiction over the Work. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the University and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security,

maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a description of the area substantially complete to the Design Professional. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the University and Contractor or, if no agreement is reached, by decision of the Design Professional.

Immediately prior to such partial occupancy or use, the University together with the Contractor and Design Professional shall jointly observe and/or inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents. Likewise, partial occupancy or use of a portion or portions of the Work shall not alter, change or modify the requirements for Substantial or Final Completion within Contract Time.

4.08 Contract Time

4.08.1 Time of the Essence

All time limits specified in this Contract are of the essence of the Contract.

4.08.2 Starting and Completion Date

The University shall designate in the Notice to Proceed the starting date of the Contract on which the Contractor shall immediately begin and thereafter diligently prosecute the Work to completion. The Contractor agrees to complete the Work on the date specified for completion of the Contractor's performance in the Contract unless such time is adjusted, in writing, by change order issued by the University. The Contractor may complete the Work before the completion date if it will not interfere with the University or their other Contractors engaged in related or adjacent Work. The date of Substantial Completion shall be used as the commencement date of the guarantee.

4.08.3 Delay

Within ten (10) days from the commencement of a delay, Contractor shall submit to the University's Representative a written notice of the delay. Such notice of delay shall describe the nature and cause of the delay, provide a preliminary estimate of the impact of said delay on the construction schedule and provide a recovery plan to mitigate the delay. The Contractor's failure to give such notice to the University shall constitute a waiver by the Contractor of its ability to request an extension of time. In the case of a continuing cause of delay, only one claim shall be necessary. The giving of such notice shall not of itself establish the validity of the cause of delay or of the extension of the time for completion. Submission of reports and/or updates required at regularly scheduled meetings or as a part of a regularly submitted report shall not constitute such required notice.

The Contractor expressly agrees that delays to construction activities which do not affect the overall time of completion of the Work shall not entitle the Contractor to an extension of the Contract Time or provide a basis for additional cost or damages. No delay, obstruction, interference, hindrance, or disruption, from whatever source or cause in the progress of the Contractor's Work shall be a basis for an extension of time unless the delay, obstruction, interference, hindrance, or disruption is without the fault and not the responsibility of the Contractor and directly affects the overall completion of the Work as reflected in the Contractor's updated and accepted Project schedule.

Within fifteen (15) days from the submittal to the University of the notice of delay detailed in the previous paragraphs, Contractor shall submit to the University's Representative a request for an extension of time which shall include all documentation supporting the request. Such submittal shall include a detailed description of all changes in activity duration, logic, sequence, or otherwise in the Project schedule. The filing of such a request for an extension of time shall not of itself establish the validity of the cause of delay or of the extension of time for completion. Submission of construction reports and/or updates required by these General and Supplementary Conditions shall not constitute such a request.

4.08.4 Adjustment of Contract Time and Cost

If the Contractor is delayed, obstructed or hindered at any time in the progress of the Work by any act or neglect of the University or by any contractor employed by the University, or by changes ordered in the scope of the Work, or by fire, adverse weather conditions not reasonably anticipated, or any other causes beyond the control of the Contractor with the exception of labor disputes or strikes of the Contractor's or a Subcontractor's own personnel, then the duration set forth in the Master Project Schedule, and established for Substantial and Final Completion may be extended as agreed to by the University, Contractor and Design Professional. When such delays result in an agreement to adjust the Time of Completion, then the Contractor may also request, and the University may make a reasonable adjustment to the Contract Sum for Project costs directly attributable to the delay pursuant to Article 6.00, CHANGES IN THE WORK. It will be the Contractor's obligation to demonstrate to the complete satisfaction of the University, that the direct Project costs associated with such delays are justified, fair, and reasonable.

The University will not recognize labor disputes, strikes, work stoppages, picketing or boycotting by employees of or under the control or direction of the Contractor or its subcontractors, to be cause for extending the Construction Project Schedule or the Contract Time or adjusting the Contract Sum. The University may recognize labor disputes, strikes, work stoppages, picketing or boycotting that are not within the Contractor's or its subcontractors' control as cause for extending the Construction Project Schedule or Contract Time. Pursuant to section 9.01.1 such labor disputes, strikes, work stoppages, picketing or boycotts may constitute grounds for termination of the Contractor.

4.08.5 Contractor to Fully Prosecute Work

No extension of time will be granted unless the Contractor demonstrates to the satisfaction of the University that the Contractor has made every reasonable effort to complete all Work under the Contract not later than the date prescribed.

4.08.6 University's Adjustment of Contract Time

Even though the Contractor has no right to an extension of time for completion, the University may in the exercise of its sole discretion extend the time at the request of the Contractor if it determines it to be in the best interest of the University. .

4.08.7 Adjustment of Contract Time and Cost Due to Reasons Beyond University Control

Should the University be prevented or enjoined from proceeding with Work either before or after the start of construction by reason of any litigation or other reason beyond its control, the Contractor may request an adjustment in the Time of Completion and/or Contract Sum by reason of said delay. The University may make a reasonable adjustment in the Time of Completion and/or Contract Sum for time and costs directly attributable to the delay. It will be the Contractors obligation to demonstrate to the complete satisfaction of the University, that all Time of Completion and Contract Sum adjustments associated with such delays are justified, fair, and reasonable.

4.09 Progress Schedule

4.09.1

The Contractor shall prepare and submit to the University the Contractor's Construction Schedule utilizing the Critical Path Method within ten (10) days after starting date on the Notice to Proceed. It shall be the Contractor's responsibility to use its best efforts and to act with due diligence to maintain the progress of the Work in accordance with the schedule. The time for completion may be extended only by a written Change Order executed by the University and the Contractor. The work activities making up the schedule shall be of sufficient detail to assure that adequate planning has been done for proper execution of the Work and such that, in the sole judgment of the University, it provides an appropriate basis for monitoring and evaluating the progress of the Work. The Construction Schedule shall include the time periods required for utility and service interruptions, including compliance with the notice periods stated in the Utility Disturbance and Disruption Request. The Contractor shall also submit a separate progress schedule listing all submittals required under the Contract and the date by which each submittal will be submitted allowing 10 days for the Design Professional's review ("submittal schedule").

4.09.4

Float, slack time, or contingency within the schedule at the activity level and total float within the overall schedule, is not for the exclusive use of either the University or the Contractor, but is jointly owned by both and is a resource available to and shared by both parties as needed to meet Contract milestones and the Contract completion date.

4.09.5

The Contractor shall not sequester shared float through such strategies as extending activity duration estimates to consume available float, using preferential logic, or using extensive crew/resource sequencing, etc. Since float time within the construction schedule is jointly owned, it is acknowledged that University caused delays on the Project may be offset by University caused time savings (i.e., critical path submittals returned in less time than allowed by the Contract, approval of substitution requests which result in a savings of time to the Contractor, etc.). In such an event, the Contractor shall not be entitled to receive a time extension until all University caused time savings are exceeded and the Contract completion date is also exceeded.

4.09.6

Regardless of which schedule method the Contractor elects to use in formulating the Contractor's Construction Schedule, an updated construction schedule shall be submitted to the University five (5) days prior to the submittal of the Contractor's monthly payment request. The submission of the updated construction schedule satisfying the requirements of this Article, accurately reflects the status of the Work, and incorporates all changes into the schedule, including actual dates, shall be a condition precedent to the processing of monthly payment applications. Updated schedules shall also be submitted at such other times as the University may direct. Upon approval of a change order or issuance of a direction to proceed with a change, the approved change shall be reflected in the next schedule update submitted by the Contractor.

4.09.7

If completion of any part of the Work, the delivery of equipment or materials, or issuance of the Contractor submittals is behind the updated Construction Schedule and will cause the end date of the Work to be later than the Contract completion date, the Contractor shall submit in writing a plan acceptable to the University for completing the Work on or before the current Contract completion date.

4.09.8

No time extensions shall be granted unless the delay can be clearly demonstrated by the Contractor on the basis of the updated Construction Schedule current as of the month the change is issued or the delay occurred, and the delay cannot be mitigated, offset, or eliminated through such actions as revising the intended sequence of Work or other means.

4.09.9

As a condition precedent to the release of retained funds, the Contractor shall, after completion of the Work has been achieved, submit a final Construction Schedule which accurately reflects the manner in which the Project was constructed and includes actual start and completion dates for all Work activities on the Project schedule together with a full and unconditional waiver and release of claims for payment in a form acceptable to the University.

4.10 Coordination With Other Work

The University reserves the right to do other Work in connection with the Project or adjacent thereto and the Contractor shall at all times conduct the Work so as to impose no hardship on the University or others engaged in the University's Work nor to cause any unreasonable delay or hindrance thereto.

Where two or more Contractors are employed on related or adjacent work, each shall conduct their operation in such a manner as not to cause delay or additional expense to the other.

The Contractor shall be responsible to others engaged in the related or adjacent work for all damage to Work, to persons and to property, and for loss caused by failure to complete the Work within the specified time for completion. The Contractor shall coordinate its Work with the Work of others so that no discrepancies shall result in the Project.

4.11 As-built Drawings Reflecting Actual Construction

During the course of construction, the Contractor shall maintain drawings kept up each day to show the Project as it is actually constructed. Every sheet of the plans and specifications which differs from the actual construction shall be marked and sheets so changed shall be noted on the title sheets of the plans and specifications. All change orders shall be shown by reference to sketch drawings, and any supplementary drawings or change order drawings shall be included. The Contractor shall review the "As-built" drawings with the University at least once a month to demonstrate that all changes that have occurred are being fully and accurately recorded. The altered Contract drawings shall be sufficiently detailed so that future Work on the Project or in adjacent areas may be conducted with a minimum of difficulty. Prior to the completion of the Project, and prior to release of the final retention payments, the "As-built" drawings and specifications shall be transmitted in hard copy and electronic format as directed by the University to the University or the Design Professional for further review. A copy of the transmittal shall be sent to the University and included in the formal Close-out documents.

4.12 Cleanup of Project and Site

The Contractor shall, on a daily basis, keep the premises and surrounding area free from accumulation of waste materials, combustibles, or rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove from and about the Project waste materials, combustibles, rubbish, the Contractor's tools, construction equipment, machinery and surplus materials.

If the Contractor fails to clean up as provided in the Contract Documents, the University may do so and the cost thereof shall be charged to the Contractor. Any additional cleaning requirements are as stated in the Supplementary General Conditions.

Upon completion of the Work, the Contractor shall promptly remove from the premises construction equipment and any waste materials not previously disposed of, leaving the premises thoroughly clean and ready for occupancy.

When two or more Contractors are engaged in work at or near the site, each shall be responsible for cleanup and removal of its own rubbish, equipment, and any waste materials not previously disposed.

In the event the Contractor does not maintain the Project or the site clear of debris and rubbish in a manner acceptable to the Design Professional or University, the University may, at its option, cause the Project or site to be properly cleaned and may withhold the incurred expense from payments due the Contractor or otherwise receive reimbursement from the Contractor.

4.13 [Not used]

4.14 Project Sign, Advertising

If included as a requirement in the project documents, Contractor shall furnish and install a project sign as designed by the Design Professional and accepted by the University as part of the Work under the Contract. As a minimum, the sign shall be four feet by eight feet, made from three-quarter inch plywood. The sign shall identify the Project name, the University including the individual members of the Board of Governors, the Design Professional, and the Contractor. No advertising is permitted on the Project or site without written permission from the University. If the Project is funded by a State of Michigan capital appropriation, the Contractor shall also provide a project sign which satisfies the requirements of the State of Michigan as stipulated in the Department of Technology Management and Budget's Major Project Design Manual, current edition.

5.00 INTERPRETATION OF AND ADHERENCE TO CONTRACT REQUIREMENTS

5.01 Interpretation of Contract Requirements

5.01.1 Conflicts

In the event of conflict in the Contract Documents, the priorities stated below shall govern:

(1) Addenda shall govern over all other Contract Documents and subsequent addenda shall govern over prior addenda only to the extent that they modify prior addenda. Such addenda shall only govern the scope of Work, Contract Sum, and Time of Completion, and shall not be deemed to amend the Contract, General Conditions of Construction, or Supplementary General Conditions of Construction.

(2) In case of conflict between plans and specifications, the specifications take precedence over drawings for the specific type or quality of materials or the quality of installation; the drawings take precedence over the specifications with regard to quantities, locations or detail of installation.

(3) Conflicts within the plans:
   (a) Schedules, when identified as such, shall govern over all other portions of the plans.

   (b) Specific notes shall govern over all other notes and all other portions of the plans except the schedules described in Article 5.01.1, above.

   (c) Larger scale drawings shall govern over smaller scale drawings.

   (d) Figured or numerical dimensions shall govern over dimensions obtained by scaling. Scaling the drawings is prohibited.

(4) Conflicts within the specifications:
   "General Conditions for Construction" shall govern over all sections of the specifications except for specific modifications thereto that may be stated in Supplementary General Conditions or addenda. No other section of the specifications shall modify the General Conditions for Construction.

(5) In the event provisions of codes, safety orders, Contract Documents, referenced manufacturer's specifications or industry standards are in conflict, the more restrictive or higher quality shall govern.

5.01.2 Omissions

If the Contract Documents are not complete as to any minor detail of a required construction system or with regard to the manner of combining or installing of parts, materials, or equipment, but there exists an accepted trade standard for good and skillful construction, such detail shall be deemed to be an implied requirement of the Contract Documents in accordance with such standard. "Minor Detail" shall include the concept of substantially identical components, where the price of each such component is small even though the aggregate cost or importance is substantial, and shall include a single component which is incidental, even though its cost or importance may be substantial.

The quality and quantity of the parts or material so supplied shall conform to trade standards and be compatible with the type, composition, strength, size, and profile of the parts of materials otherwise set forth in the Contract Documents.

5.01.3 Miscellaneous

Portions of the Work which can be best illustrated by the Drawings may not be included in the Specifications and portions best described by the Specifications may not be depicted on the Drawings.

If an item or system is either shown or specified, all material and equipment normally furnished with such items and needed to make a complete operating installation shall be provided whether mentioned or not, even though such materials and equipment are not shown on the drawings or described in the specifications, omitting only such parts as are specifically excepted. Words and abbreviations which have well-known technical or trade meanings are used in the Contract Documents in accordance with such recognized meanings.

The General Conditions and Supplementary General Conditions are a part of each and every section of the Specifications.

All drawings, Project Plans and Specifications, renderings and models or other documentation, and copies thereof, furnished by the University or any agent, employee or consultant of the University, or Design Professional, are and shall remain the property of the University. They are to be used only with respect to this Project and are not to be used on any other project.

5.01.4 Interpreter of Documents

The University's Representative shall be the Interpreter, with the advice of the Design Professional, of the Contract Documents and shall be the judge of the performance of the Contractor and subcontractors. Subject to the provisions Article 7, claims, disputes and other matters of controversy relating to the Contract Documents or the Work shall be decided by the University's Representative. The decision of the University's Representative shall be final.

5.02 Issuance of Interpretations, Clarifications, Additional Instructions (Requests for Information)

Should the Contractor discover any conflicts, omissions, or errors in the Contract or have any question concerning interpretation or clarification of the Contract Documents, the Contractor shall request in writing an interpretation, clarification, or additional detailed instructions before proceeding with the Work affected. The written request shall be given to the Design Professional and University within 5 days of discovery.

The Design Professional, with review as required by the University, shall, within 10 days or other reasonable time, issue in writing the interpretation, clarification, or additional detailed instructions requested. In the event that the Contractor believes that the progress of the Work is being delayed by a Request for Information or a response to a Request for Information, Contractor shall comply with the procedures stated in section 4.08 of these General Conditions for an extension of time.

Should the Contractor proceed with the Work affected before receipt of the interpretation, clarification, or instructions from the Design Professional, the Contractor shall replace or adjust any Work not in conformance therewith and shall be responsible for any resultant damage or added cost.

Should any interpretation, clarification, or additional detailed instructions, in the opinion of the Contractor, constitute Work beyond the scope of the Contract, the Contractor must submit written notice thereof to the Design Professional and University within five (5) calendar days following receipt of such interpretation, clarification, or additional detailed instructions and in any event prior to commencement of Work thereon. The Contractor shall submit an explanation of how the interpretation, clarification, or additional detailed instruction constitutes work beyond the scope of the Contract, along with a detailed cost breakdown and an explanation of any delay impacts. The Design Professional shall consider such notice and make a recommendation to the University. If, in the judgment of the University, the notice is justified, the interpretation, clarification or additional detailed instructions shall either be revised or the extra work authorized by Contract change order or by field instruction with a change order to follow. If the University

decides that the request is not justified and the Contractor does not agree, the Contractor shall nevertheless perform such Work upon receipt from the University of written authorization to do so. In such case, the Contractor shall have the right to have the Claim later determined only pursuant to the requirements of this Contract. However, any such Claim for additional compensation because of such interpretation, clarification, or additional detailed instruction is waived, unless the Contractor gives written notice to the Design Professional and University within five (5) calendar days as specified above.

5.03 Product and Reference Standards

5.03.1 Product Designation

When descriptive catalog designations, including the manufacturer's name, product brand name, or model number are referred to in the Contract Documents, such designations shall be considered as being those found in industry publications of current issue at the date of Contract execution.

5.03.2 Reference Standards

When standards of the federal government, trade societies, or trade associations are referred to in the Contract Documents by specific date of issue, these shall be considered a part of this Contract. When such references do not bear a date of issue, the current and most recently published edition at the date of Contract execution shall be considered a part of this Contract.

5.04 Shop Drawings, Samples, Alternatives or Equals, Substitutions

5.04.1 Submittal Procedure

Shop drawings include drawings, diagrams, illustrations, schedules, performance charts, brochures and catalogs and other data prepared by the Contractor or any subcontractor, manufacturer, supplier or distributor, and which illustrate some portion of the Work. In accordance with the submittal schedule, the Contractor shall promptly review and approve all shop drawings and then submit the shop drawings to the Design Professional together with samples as required by the Contract Documents and shall also submit any offers of alternatives or substitutions. The Design Professional shall have 10 days to respond with an acknowledgement of approval, clearly defined exceptions, or rejections. Rejections shall be cause for re-submission and no contract time adjustments will be granted for such requirements. At least six copies of brochures, one copy of shop drawings and one PDF digital file of shop drawings shall be submitted as well as additional copies as required by Design Professional. All such submittals shall be sent to Design Professional at the address given in the instructions to the Contractor at the job start meeting. A letter shall accompany the submitted items which shall contain a list of all matters submitted and shall identify all deviations shown in the shop drawings and samples from the requirements of the Contract Documents. Failure by the Contractor to identify all deviations may render void any action taken by the Design Professional on the materials submitted. Whether to void such action shall be in the discretion of the Design Professional. The letter and all items accompanying it shall be fully identified as to project name and location, the Contractor's name, and the University's Project number. By submitting the approved shop drawings and samples, the Contractor warrants and represents that the data contained therein have been verified with conditions as they actually exist and that the shop drawings and samples have been checked and coordinated with the Contract Documents.

5.04.2 Samples

Samples are physical examples furnished by the Contractor to illustrate materials, equipment, color, texture, or worker ship, and to establish standards by which the Work will be judged. Unless otherwise approved, at least two samples will be submitted for each item requiring samples to be submitted.

The Work shall be in accordance with the samples and reviewed by Design Professional. Samples shall be removed by the Contractor from the site when directed. Samples not removed by the Contractor, will become the property of the University and will be removed or disposed of by the University at the Contractor's expense.

5.04.2.1 Mock-ups as may be required by the Contract Documents

Mock-ups, models or temporary construction as may be required by the University shall be removed and disposed of by the Contractor at Contractor's sole cost and expense from the site when directed.

5.04.3

5.04.3 Substitutions

For convenience in designation on the plans or in the specifications, certain materials or equipment may be designated by a brand or trade name or the name of the manufacturer together with catalog designation or other identifying information, hereinafter referred to generically as "designated by brand name." Alternative material or equipment which is of equal quality and of the required characteristics for the purpose intended may be proposed for use provided the Contractor complies with the requirements stated in this section. If the Contractor proposes a product that is of lesser or greater quality or performance than the specified material or equipment, Contractor must both comply with the provisions of section 5.04 and submit any cost impact. The Contractor shall submit its proposal to University and the Design Professional for an alternative in writing within the time limit designated in the Contract, or if not so designated, then within a period which will cause no delay in the Work. By submitting a substitute, the Contractor waives any rights to claim a delay due to the processing of this substitution.

The Contractor may offer a substitution of a specified or indicated item if it presents complete information concerning the substitution and the benefits thereof to the University by reason of lower cost or improved performance, or both, over the specified or indicated item. However, such submission of a proposed substitution does not relieve the Contractor from its obligations under the Contract. In proposing a substitution, the Contractor warrants that the substitution is, at a minimum, equivalent in performance to the specified or indicated item. A substitution shall not be effective unless accepted in writing by the University.

Any additional costs and changes to the Work (including, but not limited to the Work of other Contractors and additional design costs which may be affected thereby) which may result from the proposed substitution shall be disclosed at the time the substitution is proposed to the University. Changes to the Work and any additional costs therefrom shall be the sole responsibility of the Contractor and shall not increase the Contract Sum.

The Contractor's substitution proposals shall include written descriptions of the items to be substituted (including drawings and/or specifications) and referenced information of the proposed substitution. The Design Professional and University's Representative's signature on this proposal is required for acceptance. Shop Drawings will not be considered a substitution proposal pursuant to this section. Verbal approvals or approved Shop Drawings will not be considered as acceptance of proposed substitutions.

5.05 Quality of Materials, Articles and Equipment

Materials, articles and equipment furnished by the Contractor for incorporation into the Work shall be new unless otherwise specified in the Contract Documents. When the Contract requires that materials, articles or equipment be furnished, but the quality or kind thereof is not specified, the Contractor shall furnish materials, articles or equipment at least equal to the kind or quality or both of materials, articles or equipment which are specified.

5.06 Testing Materials, Articles, Equipment and Work

Materials, articles, equipment or other Work requiring tests are specified in the Contract Documents. Materials, articles and equipment requiring tests shall be delivered to the site in ample time before intended use to allow for testing and shall not be used prior to testing and receipt of written approval. The Contractor shall be solely responsible for notifying the University where and when materials, articles, equipment and Work are ready for testing. Should any such materials, articles, equipment or Work be covered without testing and approval, if required, they shall be uncovered at the Contractor's expense. The University has the right to order the testing of any other materials, articles, equipment or Work at any time during the progress of the Work. Unless otherwise directed, all samples for testing shall be taken by the University from materials, articles or equipment to be used on the project or from Work performed. All tests will be under the supervision of, and at locations convenient to, the University. The University shall select the laboratories for all tests. Decisions regarding the adequacy of materials, articles, equipment or Work shall be issued to the University in writing. The University may decide to take further samples and tests, and if the results show that the Work was not defective, the University shall bear the costs of such samples and tests. In the event the results of such additional samples and tests show that the Work was defective, the Contractor shall bear the cost of such samples and tests. Samples that are of value after testing shall remain the property of the Contractor. All retesting and reinspection costs may be back charged to the Contractor by the University.

5.07 Rejection

Should any portion of the Work or any materials, articles or equipment delivered to the Project fail to comply with the requirements of the Contract Documents, such Work, materials, articles or equipment shall be rejected in writing and the Contractor shall immediately correct the deficiency to the satisfaction of the Design Professional and the University at no additional expense to the University. Any Work, materials, articles or equipment which is rejected shall immediately be removed from the premises at the expense of the Contractor. The University may retain one and one-fourth times the cost of the rejected materials, articles, equipment, and Work from any payments due the Contractor until such time as the deficiency is made acceptable to the Design Professional and University.

5.08 Responsibility for Quality

The testing and inspection provided by the University shall not relieve the Contractor of its responsibility for the quality of materials and workmanship provided by the Contractor, and the Contractor shall make good all defective Work discovered during or after completion of the Project.

6.00 CHANGES IN THE WORK

6.01 Change Orders

6.01.1 Generally

The University reserves the right to issue written orders whether through a formal Change Order or Preliminary Project Cost and Schedule Impact Report, directing changes in the Contract at any time prior to the acceptance of the Project without voiding the Contract, and Contractor shall promptly comply with such order or direction. The Contractor may request changes in the Work, but shall not act on the changes until approved in writing by the University. Any change made without authority in writing from the University shall be the responsibility of the Contractor.

Any such changes in the Work that have a cost impact shall only be authorized by Change Orders approved by the University. No action, conduct, omission, prior failure or course of dealing by the University shall act to waive, modify, change or alter the requirement that Change Orders must be in writing and signed by the University and Contractor and that such written Change Orders are the exclusive method for changing or altering the Contract Sum or Contract Time. The University and Contractor understand and agree that the Contract Sum and Contract Time cannot be changed by implication, oral agreements, actions, inactions, course of conduct or Preliminary Project Cost and Schedule Impact Report.

On the basis set forth herein, the Contract Sum may be adjusted for any Change Order requiring a different quantity or quality of labor, materials or equipment from that originally required, and the partial payments to the Contractor, set forth in section 8.01, may be adjusted to reflect the change. Whenever the necessity for a change arises, and when so ordered by the University in writing, the Contractor shall take all necessary steps to mitigate the effect of the ultimate change on the other Work in the area of the change. Changed Work shall be performed in accordance with the original Contract requirements except as modified by the Change Order. Except as herein provided, the Contractor shall have no claim for any other compensation including lost productivity or increased overhead expenses due to changes in the Work.

6.01.2 Proposed Change Orders

The Design Professional, with approval of the University, shall issue to the Contractor a cost request Bulletin for a proposed change order describing the intended change and shall require the Contractor to indicate thereon a proposed amount to be added to or subtracted from the Contract Sum due to the change supported by a detailed estimate of cost. Upon request by the University, the Contractor shall permit inspection of the original Contract estimate, Trade Contract agreements, or purchase orders relating to the change. Any request for adjustment in Contract Time which is directly attributable to the changed Work shall be included with substantiating detailed explanation by the Contractor in its response to the cost request bulletin. Failure by Contractor to request adjustment of Contract Time on the response to the cost request Bulletin shall waive any right to subsequently claim an adjustment of the Contract Time based on the changed Work. The Contractor shall submit the response to the cost request Bulletin with detailed estimates and any time extension request thereon to the Design Professional within ten (10) days after issuance of the cost request Bulletin. Upon its submission, the Design Professional will review it and advise the University who will make the decision regarding the request. The University retains sole discretion to accept, reject, or modify the proposed change. If the Contractor fails to submit the response within the required ten (10) days, and the Contractor has not obtained the Design Professional's and the University's permission for a delay in submission, the University may order the Contractor in writing to begin the Work immediately, and the Contract Sum shall be adjusted in accordance with the University's estimate of cost. In that event, the Contractor, within fifteen days following completion of the changed Work, may present information to the University that the University's estimate was in error; the University, in its sole discretion, may adjust the Contract Sum. The Contractor must keep and submit to the University time and materials records verified by the University to substantiate its costs. The University may require the Contractor to proceed immediately

with the changed Work in accordance with section 6.01.4, “Failure to Agree as to Cost” or section 6.02 “Emergency Changes.”

When the University and the Contractor agree on the amount to be added to or deducted from the Contract Sum and the time to be added to or deducted from the Contract Time and a Contract Change Order is signed by the University and the Contractor, the Contractor shall proceed with the changed Work. If agreement is reached as to the adjustment in compensation for the performance of changed Work but agreement is not reached as to the time adjustment for such Work, the Contractor shall proceed with the Work at the agreed price, reserving the right to further pursue its Claim for a time adjustment. Any costs incurred to acquire information relative to a proposed Change Order shall not be borne by the University.

6.01.3 Allowable Costs Upon Change Orders

The identification of and manner in which costs will be allowed because of changed Work shall be computed as described by this section.

6.01.3.1 Labor

Costs are allowed for the actual payroll cost to the Contractor for direct labor, engineering or technical services directly required for the performance of the changed Work, (but not site management such as field office estimating, clerical, project engineering, management or supervision) including payments, assessments, or benefits required by lawful labor union collective bargaining agreements, compensation insurance payments, contributions made to the State pursuant to the Unemployment Insurance Code, and for taxes paid to the federal government required by the Social Security Act of 1935, as amended, unless the time of completion adjustments affect the general condition inclusion of the Contract Sum.

No labor cost will be recognized at a rate that deviates from the WSU Wages in the locality of Wayne County, Michigan as provided by the University at the time the Work is performed, or of wage and benefit rates associated with trade union collective bargaining agreements prevailing at the time of the change, and the the use of a classification which would increase the labor cost may not be permitted unless the Contractor established to the satisfaction of the University the necessity for payment at a higher rate.

6.01.3.2 Materials

Costs are allowed for the actual cost to the Contractor for the materials directly required for the performance of the changed Work. Such cost of materials may include the costs of transportation, sales tax, and delivery if necessarily incurred. However, overhead costs shall not be included. If a trade discount by the actual supplier is available to the Contractor, it shall be credited to the University. If the materials are obtained from a supply or source owned wholly or in part by the Contractor, payment therefor will not exceed the current wholesale price for such materials.

If, in the opinion of the University, the cost of materials is excessive, or if the Contractor fails to furnish satisfactory evidence of the cost from the actual suppliers thereof, then in either case the cost of the materials shall be deemed to be the lowest wholesale price at which similar materials are available in the quantities required at the time they were needed.

6.01.3.3 Equipment

Costs are allowed for the actual cost to the Contractor for the use of equipment directly required in the performance of the changed Work except that no payment will be made for time while equipment is inoperative due to breakdowns or for non-working days. The total rental cost shall not exceed seventy-five percent (75%) of the market value of the rented equipment. The rental time shall include the time required to move the equipment to the Project site from the nearest available source for rental of such equipment, and to return it to the source. If such equipment is not moved by its own power, then loading and transportation

costs will be paid. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the Project in any other way than upon the changed Work. Individual pieces of equipment having a replacement value of $500.00 or less shall be considered to be tools or small equipment, and no payment therefor will be made.

For equipment owned or furnished by the Contractor, no cost therefor shall be recognized in excess of the rental rates established by distributors or equipment rental agencies in the locality where the Work is performed. Blue Book rates shall not be used for any purpose.

The amount to be paid to the Contractor for the use of equipment as set forth above shall constitute full compensation to the Contractor for the cost of fuel, power, oil, lubrication, supplies, small tools, small equipment, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, labor (except for equipment operators who shall be paid for as provided in Article 6.01.3.1) and any and all costs to the Contractor incidental to the use of such equipment.

6.01.3.4 Change Order Mark-up Allowance

For Change Order scope whose cost is derived according to the Cost of Work plus a Fee as defined in 6.01.3.1 through 6.01.3.3, the mark-up allowance shall be as defined in the Contract. Lump-sum conditions shall include the mark-up allowance. When agreement as to cost cannot be reached, the Contractor shall execute the Work according to time and materials with the Contractor and University acknowledging such costs by signature on a daily basis, and as set forth below.

6.01.3.5 Credit for Deleted Work

For proposed change orders which involve both added and deleted Work, the Contractor shall separately estimate the cost of the added Work before mark-ups, and separately estimate the cost of the deleted Work before allowance of a credit. If the difference between the costs results in an increase to the Contract Sum, the mark-up for added Work shall be applied to the difference, and if the difference in the costs results in a decrease, then the mark-up for deleted Work shall be applied to the difference.

6.01.3.6 Market Values

Cost for added Work shall be no more than market values prevailing at the time of the change, unless the Contractor can establish to the satisfaction of the University that it investigated all possible means of obtaining Work at prevailing market values and that the excess cost could not be avoided.

When a change order deletes Work from the Contract, the computation of the cost thereof shall be the values which prevailed at the time bids for the Work were opened or the Contract Sum established.

6.01.4 Failure to Agree as to Cost

6.01.4.1 For Added Work

Notwithstanding the failure of the University and the Contractor to agree as to the cost of the proposed Change Order, the Contractor, upon written order from the University, shall proceed immediately with the changed Work. A Preliminary Project Cost and Schedule Impact Report or letter signed by the University shall be used for this written order. At the start of each day's Work on the change, the Contractor shall notify the University in writing as to the size of the labor force to be used for the changed Work and its location. Failure to so notify may result in the non-acceptance of the costs for that day. At the completion of each day's Work, the Contractor shall furnish to the University a detailed summary of all labor, materials, and equipment employed in the changed Work. The University will compare his/her records with Contractor's daily summary and may make any necessary adjustments to the summary. After the University and the Contractor agree upon and sign the daily summary, the summary shall become the basis for determining

costs for the additional Work. The sum of these costs when added to an appropriate mark-up will constitute the payment for the changed Work. Subsequent adjustments, however, may be made based on later audits by the University. When changed Work is performed at locations away from the job site, the Contractor shall furnish in lieu of the daily summary, a summary submitted at the completion of the Work containing a detailed statement of labor, material, and equipment used in the Work. This latter summary shall be signed by the Contractor who shall certify thereon that the information is true.

The Contractor shall maintain and furnish on demand of the University itemized statements of cost from all vendors and subcontractors who perform changed Work or furnish materials and equipment for such Work. All statements must be signed by the vendors and the subcontractors.

6.01.4.2 For Deleted Work

When a proposed Change Order contains a deletion of any Work, and the University and the Contractor are unable to agree upon the cost thereof, the University's estimate shall be deducted from the Contract Sum and may be withheld from any payment due the Contractor until the Contractor presents adequate substantial information to the University that the University's estimate was in error. The amount to be deducted shall be the actual costs to the Contractor for labor, materials, and equipment which would have been used on the deleted Work together with an amount for mark-up as defined in the Contract Documents.

6.01.5 Allowable Time Extensions

For any change in the Work, the Contractor shall only be entitled to such adjustments in Contract Time due solely to performance of the changed Work. The procedure for obtaining an extension of time is set forth in Section 4.08 of these General Conditions. No extension of time shall be granted for a change in the Work unless the Contractor demonstrates to the satisfaction of the University that the Work is on the critical path and submits an updated Critical Path Method schedule showing that an extension of time is required and that the Contractor is making, or has made, every reasonable effort to guarantee completion of the additional Work called for by the change within the time originally allotted for the Contract. Failure by the Contractor to make the required submission or showing constitutes a waiver of any possible adjustment in Contract Time.

Any adjustment in Contract time shall specify the exact impact on the date of Substantial Completion and Final Completion.

6.02 Emergency Changes

Changes in the Work made necessary due to unforeseen site conditions, discovery of errors in plans or specifications requiring immediate clarification in order to avoid a serious Work stoppage, changes of a kind where the extent cannot be determined until completed, or under any circumstances whatsoever when deemed necessary by the University are kinds of emergency changes which may be authorized by the University in writing to the Contractor. The Contractor shall commence performance of the emergency change immediately upon receipt of Preliminary Project Cost and Schedule Impact Report issued by the University.

If agreement is reached as to compensation adjustment for the purpose of any emergency change, then compensation will be as provided in this section relating to ordinary changes. If agreement is not reached as to compensation at the time of commencing the emergency change, then compensation will be as provided in section 6.01.4, that is, time and materials records and summaries shall be witnessed and maintained until either a lump sum payment is agreed upon, or the changed Work is completed.

6.03 Preliminary Project Cost and Schedule Impact Report

The Contractor shall perform Work as directed by the University through a Preliminary Project Cost and Schedule Impact Report. The cost of the changed Work is to be determined as stated in the Preliminary Project Cost and Schedule Impact Report or pursuant to section 6.01.4.

7.00 CLAIMS AND DISPUTES

7.01 Policy of Cooperation

The parties shall endeavor to resolve all of their claims and disputes amicably and informally through open communication and discussion of all issues relating to the Project. To the greatest extent possible, the parties shall avoid invoking the formal dispute resolution procedures contained in the Contract Documents.

7.02 Recommendation of Design Professional

Claims, including those alleging an error or omission by the Design Professional, must be referred initially to the Design Professional for action as provided in paragraph 7.09 as an express condition precedent to proceeding further in resolving any claim.

7.03 Time Limits on Claims

Claims must be made within 5 days after occurrence of the event giving rise to such Claim or within 5 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later. Claims must be made by written notice. An additional Claim made after the initial Claim has been resolved by Change Order will not be valid.

7.04 Continuing Contract Performance

Pending final resolution of a Claim, unless otherwise agreed in writing, the Contractor shall proceed diligently with performance of the Contract and the University shall continue to make payments in accordance with the Contract Documents subject to the University's rights relative to payments, withholding of payments, termination, or all other rights afforded it in the Contract Documents.

7.05 Claims for Concealed or Unknown Conditions

If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then written notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 48 hours after first observance of the conditions. The Design Professional will promptly investigate such conditions and, if the conditions differ materially and cause an increase or decrease in the Contractor’s cost of, or time required for, performance of any part of the Work, the Design Professional will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Professional determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall so notify the University and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 10 days after the Design Professional has issued such determination. If the University and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Design Professional for initial determination, subject to further proceedings pursuant to Paragraph 7.09.

7.06 Claims for Additional Cost

Any Claim by the Contractor for an increase in the Contract Sum shall be submitted in writing as required by the Contract Documents before proceeding to execute the Work. If the Contractor believes additional cost is involved for reasons including but not limited to (1) a written interpretation from the Design Professional, (2) an order by the University to stop the Work where the Contractor was not at fault, (3) a

written order for a minor change in the Work issued by the Design Professional, (4) failure of payment by the University, (5) termination of the Contract by the University, (6) University's suspension or (7) changes in the scope of Work, the Contractor's claim shall be filed in strict accordance with the procedure established herein.

7.07 Claims for Additional Time

Any Claim by Contractor for an increase in the Contract Time shall be submitted in writing as required by the Contract Documents. The Contractor's Claim shall include an estimate of the probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

7.08 Injury or Damage to Person or Property

If either party to the Contract suffers injury or damage to person or property because of an act or omission of the other party, of any of the other party's employees or agents, or of others for whose acts such party is legally liable, written notice of such injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 5 days after first observance. The notice shall provide sufficient detail to enable the other party to investigate the matter. If a Claim for additional cost or time related to this Claim is to be asserted, it shall be filed as provided in the Contract Documents.

7.09 Resolution of Claims and Disputes

7.09.1 Review by Design Professional

Design Professional will review all Claims and take one or more of the following preliminary actions within 10 days of receipt of a Claim: (1) request additional supporting data from the Claimant, (2) submit a schedule to the parties indicating when the Design Professional expects take action, (3) reject the Claim in whole or in part, stating reasons for rejection, (4) recommend approval of the Claim by the other party or (5) suggest a compromise. The Design Professional may also, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim.

If a Claim has been resolved, the Design Professional will prepare or obtain appropriate documentation. If a Claim has not been resolved, the party making the Claim shall, within 10 days after the Design Professional's preliminary response, take one or more of the following actions: (1) submit additional supporting data requested by the Design Professional, (2) modify the initial Claim or (3) notify the Design Professional that the initial Claim stands.

If a Claim has not been resolved after consideration of the foregoing and of further evidence presented by the parties or requested by the Design Professional, the Design Professional will notify the parties in writing that the Design Professional's opinion will be rendered within 5 days. Upon expiration of such time period, the Design Professional will render to the parties the Design Professional's determination relative to the Claim, including any change in the Contract Sum or Contract Time or both. If there is a surety and there appears to be a possibility of a Contractor's default, the Design Professional may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy. The determination by the Design Professional shall be subject to the review and approval of the Associate Vice President of Facilities Planning and Management at Wayne State University.

7.09.2 Review by Associate Vice President of Facilities Planning and Management

The determination by the Design Professional shall be subject to the review and approval of the Associate Vice President of Facilities Planning and Management at Wayne State University who may request additional information from the Claimant for review and consideration. The Associate Vice President of Facilities Planning and Management may issue a schedule for further discussions, review or decision. Upon decision by the Associate Vice President of Facilities Planning and Management, if the Claimant seeks further review, the matter shall be submitted to the Vice-President of Finance and Business Operations.

7.09.3 Review Vice-President of Finance and Business Operations

If the determination by the Design Professional and the decision of the Associate Vice President does not resolve the Claim, the Claimant may appeal to the Vice President of Finance and Business Operations who shall review such determination and the supporting information submitted by the parties for the purpose of upholding, modifying, or rejecting the determination. The Vice President of Finance and Business Operations shall render a decision within forty-five days of the completion of any submissions by the parties. The decision of the Vice President of Finance and Business Operations is final unless it is challenged by either party by filing a lawsuit in the Court of Claims of the State of Michigan within one year of the issuance of the decision.

7.09.4 Jurisdiction

Sole and exclusive jurisdiction over all claims, disputes, and other matters in question arising out of or relating to this Contract or the breach thereof, shall rest in the Court of Claims of the State of Michigan. No provision of this agreement may be construed as the University's consent to submit any claim, dispute or other matter in question for dispute resolution pursuant to any arbitration or mediation process, whether or not provisions for dispute resolution are included in a document which has been incorporated by reference into this agreement.

7.09.5 Condition Precedent

The process and procedures described in Article 7.09 are an express condition precedent to the Contractor filing or pursuing any legal remedy, including litigation. Pursuing litigation by the Contractor prior to exhaustion of the procedures set forth herein shall be premature and a material breach of this Agreement.

8.00 PAYMENT AND COMPLETION

8.01 Progress Payments

To assist in computing partial payments, the Contractor shall submit to the Design Professional and University a detailed "Schedule of Values" for review and approval by the University. The cost breakdowns shall be in sufficient detail for use in estimating the Work to be completed each month and shall be submitted within 10 days after the date of commencement of Work given in the Notice to Proceed.

Once each month during the progress of the Work, the Contractor shall submit to the Design Professional a partial payment request for review and approval. The partial payment request shall be based on the cost of the Work completed plus the acceptable materials delivered to or stored on the site under the control of the Contractor and not yet installed. The Design Professional and University shall review and certify by signature as to the validity of the request, and approving payment. Partial payments shall not be construed as acceptance of any Work which is not in accordance with the requirements of the Contract. Once the partial payment request has been certified by the Design Professional, it shall be submitted to the University for approval and processing.

The Contractor warrants that title to the Work, materials and equipment covered by an Application for Payment shall pass to the University upon the earlier of either incorporation in construction or receipt of payment by Contractor; that Work, materials and equipment covered by previous Applications for Payment are free and clear of liens, claims, security interests or encumbrances; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by Contractor or by any other person performing Work at the Project or furnishing materials or equipment for the Project subject to an agreement under which an interest or encumbrance is retained by the seller or otherwise imposed on the Contractor or buyer.

All Applications for Payment shall be accompanied by sworn statements and waivers executed by Contractor, Subcontractors and suppliers whose work is included in the Application for Payment, as well as other documentation that may be required by the University, stating that all have been paid in full for Work performed through the last or most recent progress payment: The Contractor and each subcontractor shall also provide properly completed certified payroll form WH-347 to the University's with each application for payment request.

8.02 Format of Application for Payment

In addition to a schedule of values or detailed outline for the Cost of Work that is acceptable to the Contractor and University, other specific requirements for Application for Payment format and calculations include.

- Applications for Payment shall first present the itemized Cost of Work.
    - For any portion of the Work being performed according to unit pricing or time and materials pricing, invoicing and Applications for Payment must be accompanied by acceptable supporting documentation to evidence accurate quantities of actual labor, materials and equipment. Any allowed mark-ups to the actual cost of Work performed will be added to these costs separately and not included in the actual cost.
    - Change Orders executed between the Contractor and University shall be reported as separate line items within the Application for Payment and directly under applicable Subcontractor Cost of Work items. Change Orders affecting multiple Subontractors' Cost of Work items shall be similarly numbered to permit ease of tracking. These requirements shall run through Subcontractor Applications for Payment to the Contractor to permit ease of tracking. Change Orders within a Subcontractor Application for Payment shall be appropriately labeled as being initiated by the Contractor or University to permit ease of tracking.

- The Contractor's General Conditions, Overhead and Profit shall next be calculated as the balance of the Application for Payment.

8.03 Substantial Completion, Incomplete Construction List and Punchlist

When the Contractor considers that the Work, or a portion thereof which the University agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Design Professional a comprehensive Incomplete Construction List of items to be completed or corrected, in a form agreed by the University and the Design Professional. The Contractor shall proceed promptly to complete and correct items on the Incomplete Construction List. Failure to include an item on such Incomplete Construction List does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents. Upon receipt of the Contractor's Incomplete Construction List, the Design Professional, with the University's Representative, will make an observation to determine whether the Work or designated portion thereof is substantially complete and will identify observable items inconsistent with the Contract Documents to be included in the Punchlist. If the Design Professional's or University Representative's observation discloses any item, whether or not included on the Contractor's Incomplete Construction List, which is not in accordance with the requirements of the Contract Documents, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item, upon notification by the Design Professional.

The Contractor shall then submit a request for another observation by the Design Professional to determine Substantial Completion. When the Work or designated portion thereof is substantially complete, the Design Professional will prepare a Certificate of Substantial Completion which shall establish the date of Substantial Completion, shall establish responsibilities of the University and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time, generally 45 days, within which the Contractor shall finish all remaining Incomplete Construction List and Punchlist items accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. The Certificate of Substantial Completion shall be submitted to the University and Contractor for their written acceptance of responsibilities assigned to them in such Certificate.

8.03.1 Partial Completion

From time to time, as portions of the Work are completed by the Contractor, the University shall have the right, upon giving the Contractor prior written notice, to accept any portion of the Work that the University desires to use and occupy. Such partial acceptance shall be made in writing and thereafter the Contractor shall have no further obligation with respect to the Work accepted, except to correct the Work subsequently found to have been improperly done, to replace defective materials or equipment, or as defined by Substantial Completion, Incomplete Construction List and Punchlist requirements.

8.04 Completion and Final Payment

Upon the Final Completion of the Work by the Contractor, the acceptance of the Work by the University, and the release of all claims against the University and the Work by the Contractor and its subcontractors and suppliers (which releases shall be evidenced by final waivers and releases or other documents acceptable to the University), the Contractor shall file a request for Final Payment.

8.04.1 Final Application for Payment

Upon the receipt of the Contractor's Final Application for Payment, including any and all waivers required by the University and the Contractor's provision of all Close-out Documents, and training requirements, the University shall promptly make a final inspection, and if the University finds the Work acceptable and complete in strict accordance with the Contract Documents, the University shall issue Final Payment. Final

Payment shall be made upon Completion of the Work and shall indicate the University's Final Acceptance of the Work and its acknowledgment that the Work (excluding any further warranty and guaranty obligations) has been completed and is accepted under the terms and conditions of the Contract Documents. If prior to the making of Final Payment the University finds deficiencies in the Work, the University shall promptly notify the Contractor thereof in writing, describing such deficiencies in detail. After the Contractor has remedied any deficiencies noted by the University, the Contractor shall request a final inspection and the University shall make such inspection and follow the procedure set forth in this Paragraph.

8.04.2 Final Payment by the University

The making of Final Payment shall constitute a waiver of all claims by the University except those arising from: (1) unsettled liens; (2) faulty or defective work appearing after completion; (3) failure of the work to comply with the requirements of the Contract Documents; (4) terms of any special or extended warranties required by the Contract Documents; or (5) the obligations of the Contractor under the indemnification provisions of Paragraph 4.06 hereof.

The acceptance of Final Payment shall constitute a waiver of all claims by the Contractor.

8.05 Guarantee

The Contractor unconditionally guarantees the Work under this Contract to be in conformance with the Contract Documents and to be and remain free of defects in workmanship and materials not inherent in the quality required or permitted for a period required by the contract documents beginning from the date of Substantial Completion. The Subcontractors unconditionally guaranty the Work under the subcontracts to be in conformance with the Contract Documents and to be and remain free of defects in workmanship and materials for the same period from the date of Substantial Completion, unless a longer guarantee period is stipulated in the Contract Documents. By this guarantee the Contractor and Subcontractors agree, within their respective guarantee periods, to repair or replace any Work, together with any adjacent Work which may be displaced in so doing which is not in accordance with the requirements of the Contract or which is defective in its workmanship or material, all without any expense whatsoever to the University. The Contractor shall be responsible for the coordination of all such guarantee work performance or repairs.

Special guarantees that are required by the Contract Documents shall be signed by the Contractor or Subcontractor who performs the work.

Within their respective guaranty periods, the Contractor and Subcontractors further agree that within five calendar days after being notified in writing by the University of any Work not in accordance with the requirements of the Contract Documents or of any defects in the Work, it shall commence and prosecute with due diligence all Work necessary to fulfill the terms of this guarantee and to complete the Work in accordance with the requirements of the Contract with sufficient manpower and material to complete the repairs as expeditiously as possible. The Contractor, in the event of failure to so comply, does hereby authorize the University to proceed to have the Work done at the Contractor's expense, and it agrees to pay the cost thereof upon demand. The University shall be entitled to reimbursement of all costs necessarily incurred upon the Contractor's or Subcontractor's refusal to pay the above cost.

Notwithstanding the foregoing paragraph, in the event of an emergency constituting an immediate hazard to health, safety or damage of the University's employees, property, or licenses, the University may undertake at the Contractor's or Subcontractor's respective expense, without prior notice, all Work necessary to correct such hazardous conditions caused by the Work of the Contractor not being in accordance with the requirements of this Contract.

The Contractor and Subcontractor shall require a similar guarantee in all subcontracts, including the requirement that the University be reimbursed for any damage or loss to the Work or to other Work resulting from such defects.

9.00 TERMINATION

9.01 Termination by the University for Cause

9.01.1

The University may terminate the Contract if the Contractor: (a) becomes insolvent; (b) files or has filed against it any Petition in Bankruptcy or makes a general assignment for the benefit of its creditors; (c) fails to pay, when due, for materials, supplies, labor, or other items purchased or used in connection with the Work; (d) refuses or fails to prosecute the Work, or any separable part thereof, with such diligence as will ensure the completion of the Work in accordance with the Master Project Schedule; (e) in the University's opinion, fails, refuses or neglects to supply sufficient labor, material or supervision in the prosecution of the Work; (f) interferes with or disrupts, or threatens to interfere with or disrupt the operations of the University, or any other Contractor, supplier, subcontractor, or other person working on the Project, whether by reason of any labor dispute, picketing, boycotting or by any other reason; or (g) commits any other breach of the Contract Documents.

When any of the above reasons exist, the University may, without prejudice to any other rights or remedies of the University and after giving the Contractor and the Contractor's surety, if any, three days written notice and a reasonable opportunity to cure, terminate employment of the Contractor and may, subject to any prior rights of the surety: (1) take possession of the site and of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor; (2) accept assignment of subcontracts; and (3) finish the Work by whatever reasonable method the University may deem expedient.

9.01.2

If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Design Professional's services and expenses made necessary thereby, the remaining balance shall be paid to the Contractor. If such costs exceed the unpaid balance, the Contractor shall pay the difference to the University. The amount to be paid to the Contractor or University, as the case may be, shall be certified by the Design Professional, upon application, and this obligation for payment shall survive termination of the Contract. The Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or consequential damages arising out of or resulting from such termination. However, the University shall be entitled to retain whatever amount is remaining unpaid to the Contractor in order to correct the cause for termination; such action is in addition to any other right or remedy which the University may have.

9.02 Suspension by the University for Convenience

9.02.1

The University may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work in whole or in part for such period of time as the University may determine.

9.02.2

An adjustment shall be made for increases in the Contract Sum and/or Time of Completion of the Contract, including profit on the increased cost of performance, caused by suspension, delay or interruption. No adjustment shall be made to the extent: (1) that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or (2) that an equitable

adjustment is made or denied under another provision of this Contract. The Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or consequential damages arising out of or resulting from such termination.

Adjustments made in the cost of performance may have a mutually agreed fixed or percentage fee.

9.03 Termination By The University For Convenience

9.03.1

The University, with or without cause, may terminate all or any portion of the services by the Contractor under this Agreement, upon giving the Contractor 30 days written notice of such termination. In the event of termination, the Contractor shall deliver to the University all reports, estimates, schedules, subcontracts, Contract assignments, purchase order assignments, and other documents and data prepared by it, or for it, pursuant to this Agreement.

9.03.2

Unless the termination is for cause, the Contractor shall be entitled to receive only the payments provided for in Article 8, pro-rated to the date of termination (including payment for the period of the 30 day notice) plus reimbursement for approved and actual costs and expenses incurred by the Contractor to the date of termination. Prior to payment, the Contractor shall furnish the University with a release of all claims against the University. The Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss or consequential damages arising out of or resulting from such termination.

9.04 Termination By The Contractor

9.04.1

The Contractor may terminate the Contract if the Work is stopped for a period of 60 days through no act or fault of the Contractor or a subcontractor, sub-subcontractor or their agents or employees or any other persons performing portions of the Work under Contract with the Contractor, for any of the following reasons: (1) issuance of an order of a court or other public authority having jurisdiction; (2) an act of government, such as a declaration of national emergency, making material unavailable; (3) because the Design Professional has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification, or because the University has not made payment on a Certificate for Payment within forty-five (45) days of the time stated in the Contract Documents; (4) if repeated suspensions, delays or interruptions by the University constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

If one of the above reasons exists, the Contractor may, upon fourteen (14) additional days' written notice to the University and Design Professional, terminate the Contract and recover from the University payment for Work executed and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit.

9.04.2

If the Work is stopped for a period of 60 days through no act or fault of the Contractor or a subcontractor or their agents or employees or any other persons performing portions of the Work under Contract with the Contractor due to University actions or inaction, the Contractor may, upon fourteen additional days' written notice to the University and the Design Professional, terminate the Contract and recover from the University as provided in Subparagraph 9.03.2

10.00 MISCELLANEOUS

10.01

These Contract Documents supersede all previous agreements between the University and the Contractor concerning this Work.

10.02

No action or failure to act by the University shall constitute a waiver of a right afforded it under these General Conditions, nor shall such action or failure to act constitute approval or acquiescence of a breach of these General Conditions, except as may be specifically agreed in writing.

10.03

The invalidity or unenforceability of any provision of these General Conditions shall not affect the validity or enforceability of any other provision.

-End of General Conditions for Construction-

-End of General Conditions for Construction-

SUPPLEMENTARY GENERAL CONDITIONS

OF

CONSTRUCTION

Facilities Planning & Management - Design & Construction Services

Wayne State University

Complete Documents can be downloaded at
http://www.forms.procurement.wayne.edu/RFPs/Supplementary_General_Conditions_General_Contractor_1-3-2017.docx

SUPPLEMENTARY GENERAL CONDITIONS OF CONSTRUCTION *(REVISED 7-2018)*

Where any article of the General Conditions of the Contract for Construction is supplemented in these Supplementary General Conditions, the original article shall remain in full force and effect and all supplementary provisions shall be considered as added thereto. Where any such article is modified, superseded or deleted here, provisions of such article not so specifically modified, superseded or deleted shall remain in full force and effect.

4.00 RESPONSIBILITIES OF THE PARTIES

Add the following to 4.02.3

.1 Temporary Facilities

.a The Contractor shall be responsible for arranging and providing general services and temporary facilities as specified herein and as required for the Design Professional, the University, all Subcontractors, Separate Contractors and Contractor's staff for the proper and expeditious prosecution of the Work, including, but not limited to, temporary offices and toilets; temporary storage; temporary electrical lighting and power; temporary voice and data communications, temporary water; temporary enclosures; temporary heating and ventilation; temporary openings; material hoists; temporary ladders, ramps and runways; temporary fire protection, protective coverings; temporary fire protection, protective coverings; and construction sign(s). The Contractor shall, at its own expense but included within the Cost of the Work, make all temporary connections to utilities and services in locations acceptable to the University, Design Professional and local authorities having jurisdiction thereof; furnish all necessary labor and materials, and make all installations in a manner subject to the acceptance of such authorities and the Design Professional; maintain such connections; remove the temporary installation and connections when no longer required; and restore the services and sources of supply to proper operating conditions.

.b The Contractor shall make all arrangements with the University and/or the local electrical utility company for temporary electrical service to the Site, shall provide all equipment necessary for temporary power and lighting, and shall pay all charges for this equipment and installation thereof. The electrical service shall be of adequate capacity for all construction tools and equipment without overloading the temporary facilities and shall be made available to all trades. The Contractor shall furnish, install and maintain a temporary lighting system to satisfy minimum requirements of safety and security.

.c Temporary weathertight enclosures and temporary heating shall be provided by the Contractor as required pursuant to the Construction Schedule or Master Project Schedule to complete the Work on or before the Completion Date, to make the building weathertight and suitable working conditions for the construction operations of all trades. Under no circumstances shall the temperature be allowed to reach a level which will cause damage to any portion of the Work which may be subject to damage by low temperatures. Unless otherwise indicated in the Construction Documents, the Contractor shall pay for all fuel, maintenance and attendance required in connection with the portable unit heaters without additional cost or expense to University. Any surface, interior or exterior, damaged by the use of these space heaters shall be replaced by new materials or be refinished to the satisfaction of the Design Professional and University without additional cost to the University.

.d All temporary equipment and conduits for same shall be in accordance with the applicable provisions of the governing codes. All temporary wiring and power conduits shall be maintained in a safe manner and utilized so as not to constitute a hazard to persons or property. All temporary equipment, wiring and conduits shall be completely removed after they are no longer necessary and prior to completion. At the conclusion of use or at the conclusion of the project, any materials or products purchased for the temporary facilities and temporary utilities and paid for, either

directly or indirectly, by the University shall become the property of the University and shall, at the option of the University, be delivered to the University's designated location.

.e Where temporary facilities and associated utilities, and for utilities used in performance of this Agreement can be reasonably provided from existing University services, the University shall bear the cost of such utility consumption. However, for conditions that require the Contractor to use electrical generators or equipment fueled by an independent fuel source, the Contractor shall bear all such costs.

Add the following to 4.02.12

.1 Safety and Protection

.a Contractor shall provide fences, pedestrian walks, barriers, etc. to ensure safety of the general public and Contractor's personnel or as directed by University.

.b Contractor will provide perimeter protection at wall and floor openings, elevator shafts, stairwells, and floor perimeters in accordance with MIOSHA requirements.

.c Combustible rubbish shall be removed daily and shall not be disposed of by burning on site. The entire premises and area adjoining and around the operation shall be kept in a safe and sanitary condition and free of accumulation of trash, rubbish, nuts, bolts, small tools, and other equipment not in use. Contractor is responsible to provide trash containers and fund the removal/disposal of construction debris and general trash.

.d Contractor will regularly ensure that 1) excess material/trash are removed from work sites; 2) passageways (e.g., sidewalks, hallways) are cleared of obstructions; 3) equipment is shut down and secured; and 4) lighted barricades are erected where necessary.

.e All existing means of egress, including stairways, egress doors, panic hardware, aisles, corridors, passageways, and similar means of egress shall, at all times, be maintained in a safe condition and shall be available for immediate use and free of all obstructions.

.f The space under the temporary trailer shall not be used for the storage or placement therein of flammable gases, liquids, or gas and liquid fuel powered equipment. This area shall be kept free of accumulations of any rubbish or trash.

.g In temporary trailers, all exit doors shall be open for egress whenever the unit is occupied. Draw bolts, hooks and other similar locking devices shall be prohibited on all egress doors.

.h On site storage of combustible or flammable liquids shall be limited to one day supply. Indoor storage of propane containers is prohibited.

.i Prior to working in confined spaces on campus, the Contractor must have its written Confined Spaces Program and Permit System reviewed by the University and the documents must meet minimum acceptable standards under the current MIOSHA regulation(s). The Contractor must provide its own atmospheric testing, personal protection, ventilating and rescue equipment as required. The Contractor should seek information from University on any known hazards of the confined spaces to be entered. All manholes and utility tunnels are considered confined spaces.

.j Compressed gas cylinders belonging to Contractor must be properly segregated and secured (with chains or similarly reliable restraining devices) to wall or floor mounted support systems, cylinder storage racks etc., when not in transit. Protective caps must be in place during transit or when not in use.

.k Contractor must follow all of OSHA's lockout/tagout requirements of 29 CFR 1910.147, provide its own lockout/tagout supplies, and be able to demonstrate that its employees have received formal instruction in "lock-tag-try" procedures. Copies of Contractor's written Lockout/Tagout Program shall be made available to the University upon request.

.l Contractor may not use any University sinks, drains or catch basins for the washing of any equipment, tools or supplies, or the disposal of any liquids, (excluding consumable products and hand-soap/water) without the express permission of University. This restriction applies to all sinks (including water fountains) in laboratories, offices and maintenance areas. Additionally, no polluting or hazardous liquids (such as motor oils, cleaners, solvents, paints, diesel fuels, antifreeze, etc.) may be drained onto roads, parking lots, ditches, wetlands, dirt piles or other soil, or into storm or sanitary sewers.

.m Contractor transporting hazardous materials (e.g. reclaimed materials, chemicals, fuels, oils, concrete) to and from campus must follow all applicable Department of Transportation [State or Federal] regulations. This includes proper shipping papers, placarding, material segregation and weight limits.

.n Contractor is also responsible for the proper collection, labeling, transporting, manifesting and disposal of polluting or hazardous wastes such as solvents, paints, oil or antifreeze (and rags contaminated with any of these materials) which are the result of Contractor's activities, as required by State and Federal laws and regulations. Copies of all manifests should remain available for University review upon request. Under no circumstances may hazardous wastes be disposed of in University-owned dumpsters, waste containers, drains or sewers, or drained onto roads, parking lots, ditches, wetlands, dirt piles or other soil.

.o Neither the University nor the Design Professional is responsible for conducting safety inspections or observations, but may make recommendations concerning safety to the Contractor.

.p Fire Protection

(1) All reasonable precautions shall be taken against fire throughout all the Contractor's and Trade Contractors' operations. Flammable material shall be kept at an absolute minimum. Any such materials shall be properly handled and stored.

(2) Construction practices, including cutting, welding and grinding, and protection during construction shall be in accordance with the applicable published standards. During such operations the Contractor shall provide a fire watch person. The University requires a "Hot Work" permit for such activities. The Contractor shall provide a sufficient number of approved portable fire extinguishers, distributed about the Project and in cold weather, non-freeze type portable fire extinguishers shall be used.

(3) Gasoline and other flammable liquids shall be stored in and dispensed from Underwriter's Laboratories listed safety containers in conformance with the National Board of Fire Underwriters recommendations and applicable State laws. Storage, however, shall not be within or immediately adjacent to the building. Storage shall be in a lockable, non-combustible, suitably rated cabinet or structure no less than 25 feet distant from any University building.

(4) The Contractor shall schedule the Work so that the permanent standpipe system shall be installed and made operable at the earliest possible date.

4) All tarpaulins that may be used for any purpose during construction of the Work shall be made of material which is water and weather resistant and fire retardant treated. All tarpaulins shall be Underwriters' Laboratories labeled with flame spread rating of fifteen (15) or less and shall be approved by the University's Representative prior to use.

Add the following to 4.02.13

Hazard Communication: University requires the Contractor to be in full compliance with all applicable Federal and State of Michigan regulations regarding Material Safety Data Sheets (“MSDS”). Upon request, copies of these MSDS must also be provided to the University no less than two weeks prior to the onset of activities. Failure to submit MSDS may result in suspension of Work activities until the MSDS are obtained. If Contractor is to work with hazardous products, it shall notify and update the Project Manager of a) proposed work schedules, b) what to expect in terms of noises/odors, and c) how to access MSDS. The Contractor must also be able to demonstrate that its employees have received "Haz Com" (i.e. Michigan Right-to-Know), and thereby possess a broad understanding of MSDS language. Contractor-owned chemical containers must be labeled with the product name and hazards.

Hazardous Materials: In addition to complying with the Michigan Right-to-Know Law, the Contractor must use and store hazardous materials in accordance with all local, state and federal regulations. Special attention must be paid to the segregation of incompatible materials and the handling/storage of flammable and/or volatile materials. At the end of each work day, hazardous materials must be properly secured, stored in MIOSHA approved containers, and placed in locations authorized by the University or removed from University’s property.

Add the following to 4.02.21

.1 Excavation Policy

The policy prescribed herein shall be adhered to for all earth excavation, manual or power, on the University campus that penetrates the surface of the soil by a depth of 6 inches or greater.

.a Non-emergency Situation

(1) In non-emergency situations (i.e., scheduled maintenance or construction) the Contractor shall contact the University a minimum of seven days in advance of the scheduled excavation.

(2) The Contractor shall contact Miss Dig, as defined by Public Act 174 of 2013, being MCL 460.721 – MCL 460.733, at least three full business days prior to the scheduled excavation, to ascertain and stake the actual location for all utilities within 50 feet of the limits of the proposed excavation. Actual staking shall be performed not more than three (3) days prior to the excavation.

(3) Excavation shall commence only with the approval of the University Representative after a complete examination of the site utility drawings and a field observation of the staked site.

.b Emergency Situation

1. In an emergency situation (i.e., loss of services on campus or to a building), the Contractor shall immediately contact the University Representative, examine the site utility drawings to determine the potential interferences, and contact Miss Dig and private stakers, if appropriate, to ascertain and stake the actual location of all utilities within 50 feet of the limits of the proposed excavation. The Contractor shall also immediately contact the local natural gas supplier in addition to Miss Dig, upon a natural gas line failure.

2. Contact the University’s Police Department at the emergency number: (313) 577-2222.

3. Excavation shall recommence only with the approval of the University’s Representative who will grant approval only after a complete examination of the site utility drawings and a field observation of the staked site and clearance from the utility and University Police Department.

.c Pumping and Draining

The Contractor shall provide and maintain a temporary drainage system and pumping equipment as required to keep all excavation areas within the Site free from water from any source. As the Work progresses, all water shall be removed from basement areas, tunnels, pits, trenches and similar areas as required for proper performance of the Work and to prevent damage to any part of the construction utility. Permanent sump pumps shall not be used for this purpose; however, the Contractor may install temporary pumps in the sump pits until the permanent pumps are installed, providing that it cleans sump pits and drain lines satisfactorily after temporary use. The Contractor shall provide and maintain all pumping and draining equipment as required for the installation of all underground piping and utility conduit systems. Pumping and draining shall be performed in a manner to avoid endangering concrete footings or any adjacent construction or property. Such methods shall be subject to the review of the Design Professional.

.d Post-Excavation

(1) Provide appropriate pipe protection (wraps, and/or cathodic protection) as originally installed.

(2) Provide backfill material and compaction in 12-inch lifts to a minimum 95% Maximum Dry Density or higher as required by the Specifications.

(3) Backfill material shall be as specified; or engineered fill free of all deleterious materials and rubbish of any type. Reuse of excavated material, unless otherwise specifically noted on the drawings, is unacceptable.

(4) Provide plastic tape trace 24" (12" for shallow trenches) above all utilities indicating utility type by Miss Dig color code and name defined as follows:

Utility	Color	Lettering
Electric	Red	Elect
Oil/Natural Gas	Yellow	Gas
Telephone & Fiber Optic	Orange	Tele
Cable TV	Brown	TV
Water	Blue	Water
Steam	Yellow	Steam
Sewer	Green	Sewer

(5) Return grade to pre-excavation condition.

Add the following to 4.05.1

The insurance furnished by the Contractor under this Article 4.05.1 shall provide coverage not less than the following:

.1 Workers' Compensation with Employers' Liability & Alternate Employers Endorsement:
(a) Statutory Limits & Employer's Liability $1,000,000

.2 Commercial General Liability
(a) $1,000,000 per occurrence and $2,000,000 aggregate
(b) University added as additionally insured on

.3 Contractors' Pollution Liability:
(a) $1,000,000 per claim

.4 Professional Liability:
(a) $2,000,000 per claim and $4,000,000 aggregate

.5 Auto Liability with Pollution & Legal Liability

(a) $1,000,000
(b) University added as additionally insured on

.6 Excess Liability (Umbrella):
(a) $2,000,000

.7 Builder's Risk Insurance in the amount equal to the Contract Sum.

Any deductible or self-insured reserve shall not be refunded to the Contractor from project contingency or other project funds.

Add the following to 4.12

Elevator shafts, electrical closets, pipe and duct shafts, chases, furred spaces and similar spaces which are generally unfinished, shall be cleaned by the Contractor and left free from rubbish, loose plaster, mortar drippings, extraneous construction materials, dirt and dust before preliminary inspection of the Work.

All areas of the Project in which painting and finishing work is to be performed shall be cleaned throughout just prior to the start of this work, and these areas shall be maintained in satisfactory condition for painting and finishing. This cleaning shall include the removal of trash and rubbish from these areas; broom cleaning of floors; the removal of any plaster, mortar, dust and other extraneous materials from all finished surfaces, including but not limited to, all exposed structural steel, miscellaneous metal, woodwork, plaster, masonry, concrete, mechanical and electrical equipment, piping, duct work, conduit, and also all surfaces visible after all permanent fixtures, induction unit covers, convector covers, covers for finned tube radiation, grilles, registers, and other such fixtures or devices are in place.

In addition to all cleaning specified above and the more specific cleaning which may be required, the Project shall be prepared for occupancy by a thorough final cleaning throughout including washing or cleaning of all surfaces on which dirt or dust has collected. Glass and curtain wall shall be washed and cleaned on both sides by a window cleaning subcontractor specializing in such work. Contractor shall, at University's request, delay such washing of exterior surfaces to such time as requested by University. Recleaning will not be required after the Work has been inspected and accepted unless later operations of the Contractor, in the opinion of the University, make re-cleaning of certain portions necessary.

5.00 INTERPRETATION OF AND ADHERENCE TO CONTRACT REQUIREMENTS

Add the following to 5.04.1

.1 Contractor Requirements

.a Signature: Each item submitted shall be thoroughly reviewed by the Contractor and have a stamp or note describing the Contractor's action, signed by the person authorized by the Contractor to do the checking with that person's name clearly printed.

.b Contractor Responsibility: Contractor shall review each submittal for completeness, conformance to the Contract Documents and coordination with other parts of the Work and the Construction Schedule. By providing and submitting to the Design Professional shop drawings, product data, warranties and samples, the Contractor is representing that he or his Subcontractor, has determined and verified (a) the availability of all materials, and (b) field measurements and field construction criteria related thereto, and (c) that he has checked and coordinated the information contained within such submittals with the requirements of the Work, the Contract Documents and

the Construction Schedule and that such shop drawings, samples, warranties and data conform to the Contract Documents.

.c Limited Acceptance by University and Design Professional: Acceptance is for general design only. Quantities, size, field dimensions and locations are some of the required characteristics which are not part of the acceptance and will not be checked. Accordingly, the limited acceptance shall in no way relieve the Contractor from his obligation to conform his work to required characteristics and to the requirements of the Contract Documents.

.d Delays: The Design Professional may return incomplete submittals with no action taken. The Contractor shall have no claim for any damages or for an extension of time due to delay in the Work resulting from the rejection of materials or from the rejection, correction, and resubmittal of Shop Drawings, samples and other data, or from the untimely submission thereof.

.2 Approvals

The Design Professional's approval shall not indicate approval of dimensions, quantities or fabrication processes unless specific notations are made by the Design Professional regarding same. The Design Professional will check one of the following notations on the Shop Drawing and Sample Review Stamp:

.a "REVIEWED-NO EXCEPTIONS NOTED", indicating final action by the Design Professional. When reviewing resubmitted shop drawings the Design Professional assumes that there are no revisions from the previous submittal, except as provided by 5.04.1 and his review of resubmittals is only for the corrections requested with the approval of the balance of the shop drawing being based on the original submission. Where the Contractor directs specific action to revisions, as provided by 5.04.1 the approval includes these also.

.b "REVIEWED WITH CORRECTIONS NOTED", indicating final action by the Design Professional with the same conditions as "REVIEWED-NO EXCEPTIONS NOTED". Unless he takes exception to the corrections noted, the Contractor may begin that portion of the Work for which the shop drawing was required.

.c "REVISE AND SEND RECORD COPY", requiring that the Design Professional be sent a copy of the revised shop drawing in accordance with the noted corrections, at the same time it is issued for the Work.

.d "NOT APPROVED-RESUBMIT", indicating that the Contractor shall not begin that portion of the Work until the reason indicated for disapproval has been corrected and the revised shop drawing submitted, reviewed and approved by the Design Professional.

.e "NO ACTION REQUIRED", indicating that Contract Documents do not require the Design Professional to review or take any action with this submittal.

.f Where more than one action has been checked, each shall apply to that portion of the shop drawing for which the action is indicated.

8.00 PAYMENT AND COMPLETION

Add the following to 8.01

8.01.1 Monthly Payment Applications

At a meeting mutually agreed upon between the University's Representative and the Contractor, but no less than monthly, the Contractor shall distribute, in triplicate, draft copies of the proposed Payment Application for review and comment. The review, comment and mutual concurrence will be

an agenda item at that meeting. The Contractor will prepare the formal Application for submission from the comments made on the Draft and will present the formal application as provided for herein, including all required back-up materials, such as waivers of claim, release of claim on bond, sworn statement, documentation for stored materials, certified payroll reports and other documents required by the University Representative.

8.01.2 Offsite Materials

If an Application for Payment is made for materials not installed in the Work, but suitably stored off-site at a location acceptable to the University's Representative, such application shall be accompanied by legally acceptable paid invoices or conditional bills of sale and copies of delivery tickets, signed by the Contractor, indicating the Contractor verified that the materials shown on the delivery tickets are at the location accepted by the University and are adequately insured. Failure of the Contractor to furnish paid invoices, conditional bills of sale and proof of insurance shall be cause for withholding such amounts from payment until such paid invoices or bills of sale have been received by the University. The University reserves the right to examine the stored items prior to payment.

Add the following to subparagraph 8.03

The following submittals shall be bound in three (3) sets, plus one electronic file of all materials:

.1 Project Closeout Documents

.a The Contractor shall submit to the Design Professional, a written guarantee, which shall be in accordance with Section 8.04 and such additional guarantees, in writing, as are required by the Specifications.

.b The Contractor shall submit complete instruction for the care and maintenance of all finish materials under the contract, including, but not limited to floor finishes and coverings, wainscot and wall finishes, acoustical treatment, metal finishes, painted surfaces, flooring, hardware, and finishes on mechanical and electrical equipment. Instructions shall contain the manufacturer's or supplier's recommendations with respect to cleaning agents, preservative treatment and such other instructions as may be beneficial to the maintenance, usage, appearance and durability of the product. The recommendations shall further contain cautions on the use of certain cleaners and coatings which may be detrimental to the product.

.c The Contractor shall prepare and submit operating and maintenance instructions, coordination drawings, and shop drawings for all mechanical and electrical equipment, and other special items, as called for in the specifications.

.d All of the above described documents shall be checked by Contractor for conformance with the specifications and shall be submitted in uniform size, bound and indexed for cross-reference.

.e The Contractor shall also submit "As-Built" drawings as specified in Section 4.11.

.f Copies of all "Attic Stock" transmittals signed by appropriate University personnel accepting the attic stock material.

.2 Project Closeout Training

a. The University and the Contractor will coordinate, schedule and present formal training for University personnel for all equipment, systems, devices, and building features.

b. Training shall be scripted to include all important aspects of the equipment and its installation and maintenance. Trainers shall be suitably prepared and experienced in the features of the

equipment and the equipment's installation within the project.

c. The Contractor, all product vendors, subcontractors, suppliers and materialmen shall consent to and participate in the recording of the training as determined by the University and the Contractor.

d. The University may supplement training with outside providers to meet the training requirements of the project should a vendor, subcontractor, or supplier fail to provide the required training. The University shall be reimbursed by the Contractor for any such costs for supplemental training.

.

The Technical Specifications dated **March 18, 2024** and the following List of Drawings represent the scope of work as defined in the Contract Documents from Article 4.

DRAWINGS

Drawing No.:	**Description**

GENERAL REQUIREMENTS

GENERAL

A. CONTRACTOR'S RESPONSIBILITY

It is not the responsibility of the Architect/Engineer or Owner's Representative to notify the Contractor or subcontractors when to commence, to cease, or to resume work; nor in any way to superintend so as to relieve the Contractor of responsibility or of any consequences of neglect or carelessness by him or his subordinates. All material and labor shall be furnished at times best suited for all Contractors and subcontractors concerned, so that the combined work of all shall be properly and fully completed on the date fixed by the Contract.

The Contractor shall be responsible for all items contained in both the specifications and on the drawings for all trades. He shall be responsible for the proper division of labor according to current labor union agreements regardless of the division of responsibility implied in the contract documents.

B. CODES AND STANDARDS

Reference to standard specifications for workmanship, apparatus, equipment and materials shall conform to the requirements of latest specifications of the organization referenced, i.e., American Society for Testing Materials (ASTM), Underwriters Laboratories, Inc. (UL), American National Standards Institute, Inc. (ANSI), and others so listed in the Technical Specifications.

C. PERMITS, FEES AND NOTICES

See General Conditions, Article 4.02.18

D. MEASUREMENTS

Before proceeding with each Work Item, Contractor shall locate, mark and measure any quantity or each item and report quantities to Engineer. If measured quantities exceed Engineer’s estimate, Contractor shall obtain written authorization to proceed from Owner before executing Work required for that Work Item.

Measurement of quantities for individual Work Items will be performed by Contractor and reviewed by Engineer. Coordinate measurements with inspection as required in Section “Coordination.”

Cost of Work included in Work Item for quantities as indicated in Contract Documents shall be included in Base Bid.

1. Additions to or deductions from lump sum price for quantities of each Work Item added to or deducted from Work respectively shall be at unit prices indicated in Bid Form and shall constitute payment or deductions in full for all material, equipment, labor, supervision and incidentals necessary to complete Work.

E. CONTRACTOR'S MEASUREMENTS

Before ordering material, preparing Shop Drawings, or doing any work, each Contractor shall verify, at the building, all dimensions which may affect his work. He assumes full responsibility for the accuracy of his figures. No allowance for additional compensation will be considered for minor discrepancies between dimensions on the drawings and actual field dimensions.

F. CONTINUITY OF SERVICE

Continuity of all existing services in the building shall be maintained throughout the construction period. Where it is necessary to tie into the existing electrical service, water or waste systems, it shall be done as directed by the Architect/Engineer. This Contract shall also provide temporary lines or bypasses that may be required to maintain continuous service in the building. All utility shutdowns must be approved by the Owners Representative / Project Manager, not less than **7 business days** prior to the event, so that proper notification can be posted.

G. SUBMITTALS

All submittals (except Shop Drawings) and samples required by the Specifications shall be submitted in triplicate unless otherwise specified for a particular item under an individual Specification Section.

Each sample shall be clearly identified on a tag attached, showing the name of the Project Consultant, the project number and title, the names of the Contractor, manufacturer (and supplier if same is not the manufacturer), the brand name or number identification, pattern, color, or finish designation and the location in the work.

Each submittal shall be covered by a transmittal letter, properly identified with the project title and number and a brief description of the item being submitted.

Contractor shall be responsible for all costs of packing, shipping and incidental expenses connected with delivery of the samples to the Project Consultant or other designated address.

If the initial sample is not approved, prepare and submit additional sets until approval is obtained.

Materials supplied or installed which do not conform to the appearance, quality, profile, texture or other determinant of the approval samples will be rejected, and shall be replaced with satisfactory materials at the Contractor's expense.

H. GENERAL/STANDARD ELECTRONIC EQUIPMENT AND INFRASTRUCTURE REQUIREMENTS

1. Compliance with WSU Standards for Communications Infrastructure

   A. All applicable work, products, materials and methods shall comply with the latest version of the “WSU Standards for Communications Infrastructure” except as where noted.

   B. This document is available at the following website/URL: **https://computing.wayne.edu/docs/wsu-communications-standards.pdf**

2. Automation System Program Code

   A. All automation system uncompiled and compiled program codes, source codes, custom modules, graphical user interface screen shots and any other automation system programming data and material (Program Code) shall be provided to the UNIVERSITY in hard copy and on CD Rom in an unencrypted format acceptable to the UNIVERSITY.

   B. Copyright for the Program Code shall be assigned to the UNIVERSITY for the purpose of system maintenance.

PROTECTION OF OCCUPANCY

A. **FIRE PRECAUTIONS**

Take necessary actions to eliminate possible fire hazards and to prevent damage to construction work, building materials, equipment, temporary field offices, storage sheds, and other property.
During the construction, provide the type and quantity of fire extinguishers and fire hose to meet safety and fire prevention practices by National Fire Protection Association (NFPA) Codes and Standards (available at **http://www.nfpa.org/**)

In the event that construction includes "hot work", the contractor shall provide the Owner's Representative with a copy of their hot work policy, procedures, or permit program. No hot work activity (temporary maintenance, renovation, or construction by operation of a gas or electrically powered equipment which produces flames, sparks or heat that is sufficient to start a fire or ignite combustible materials) shall be performed until such documents are provided. During such operations, all highly combustible or flammable materials shall be removed from the immediate working area, and if removal is impossible, same shall be protected with flame retardant shield.

Not more than one-half day's supply of flammable liquids such as gasoline, spray paint and paint solvent shall be brought into the building at any one time. Flammable liquids having a flash point of 100 degrees F. or below which must be brought into the building shall be confined in an Underwriters Laboratories (UL) labeled safety cans. The bulk supply of flammables shall be stored at least 75 feet from the building and other combustible materials. Spigots on drums containing flammable liquids are prohibited on the project site. Drums shall be equipped with approved vented pumps, and be grounded and bonded.

Only a reasonable working supply of combustible building materials shall be located inside the building.

All oil-soaked rags, papers, and other similar combustible materials shall be removed from the building at the close of each day's work, or more often if necessary, and placed in metal containers, with self-closing lids.

Materials and equipment stored in cardboard cartons, wood crates or other combustible containers shall be stored in an orderly manner and accessibly located, fire-fighting equipment of approved types shall be placed in the immediate vicinity of any materials or equipment stored in this type of crate or carton.

No gasoline, benzene, or like flammable materials shall be poured into sewers, manholes, or traps.

All rubbish shall be removed from the site and legally disposed of. Burning of rubbish, waste materials or trash on the site shall not be permitted.

The contractor shall be responsible for the conduct of employees relative to smoking and all smoking shall be in the area designated by the Architect/Engineer.

B. **GENERAL SAFETY AND BUILDING PRECAUTIONS**

Provide and maintain in good repair barricades, railings, etc., as required by law for the protection of the Public. All exposed material shall be smoothly dressed.

At dangerous points throughout the work environment provide and maintain colored lights or flags in addition to above guardrails.

Isolate Owner's occupied areas from areas where demolition and alteration work will be done, with temporary, dustproof, weatherproof, and fireproof enclosures as conditions may require and as directed by the Architect/Engineer.

Cover and protect furniture, equipment and fixtures to remain from soiling, dust, dirt, or damage when demolition work is performed in rooms or areas from which such items have not been removed.

Protect openings made in the existing roofs, floors, and other construction with weatherproof coverings, barricades, and temporary fire rated partitions to prevent accidents.

Repair any damage done to existing work caused by the construction and removal of temporary partitions, coverings, and barricades.

The Contractor will be held responsible for all breakage or other damage to glass up to the time the work is completed.

Provide protection for existing buildings, interior and exterior, finishes, walls, drives, landscaping, lawns (see below), etc. All damages shall be restored to match existing conditions to the satisfaction of the Architect/Engineer.

The Contractor and Owner will define the anticipated area of lawn damage at the project Pre-Construction Meeting. Whether the lawn is sparse or fully developed, any lawn damaged due to the Contractor's work will be replaced with sod by the University. The University's unit cost of $10.00 per square yard and landscaping at a rate of 1.5 times the cost of the sod repairs, the full cost of which will be assessed against the Contractor. At the completion of the project, a deductive Change Order reflecting this cost will be issued.
The Contractor is to include an allowance in his bid for this corrective work.

C. **INTERFERENCE WITH OWNER'S OPERATIONS**

The Owner will be utilizing the Building Facilities to carry on his normal business operation during construction. The Contractor shall schedule performance of the work necessary to complete the project in such a way as to interfere as little as possible with the operation during construction. The Contractor shall schedule performance of the work necessary to complete the project in such a way as to interfere as little as possible with the operation of the Owner.

Work which will interfere with the Owner's occupancy, including interruptions to the Owner's mechanical and electrical services, and essentially noisy operations (such as jackhammering) shall be scheduled in advance. The schedule of alterations shall be approved by the Architect/Engineer and the work shall be done in accordance with the approved schedule.

It is understood that the work is to be carried through to completion with the utmost speed consistent with good workmanship and to meet the construction schedule.

The Contractor shall begin work under the Contract without delay upon receipt of the fully-executed contract and shall substantially complete the project ready for unobstructed occupancy and use of the Owner for the purposes intended within the completion time stated in the contract.

The Contractor shall, immediately upon award of contract, schedule his work and expedite deliveries of materials and performance of subcontractors to maintain the necessary pace to meet the construction schedule.

CONTRACTOR'S REPRESENTATION AND COORDINATION

A. FIELD SUPERINTENDENT

Contractor shall assign a full time project manager/superintendent for the duration of the project. This person shall be experienced and qualified in all phases of the work and shall be present at the site during Contractor's working hours. The project manager shall have Contractor's full authority to represent Contractor in all routine operations including payment, changes to the work, and scheduling. Contractor shall not re-assign this individual without prior written permission of the Owner.

B. MEETINGS

When directed by the Architect/Engineer, meetings shall be held for the purpose of coordinating and expediting the work. The invited contractors or subcontractors will be required to have qualified representatives at these meetings, empowered to act in their behalf.

C. COORDINATION

The Contractor shall also provide a staff adequate to coordinate and expedite the work properly and shall at all times maintain competent supervision of its own work and that of its subcontractors to insure compliance with contract requirements.

The Contractor shall be solely responsible for all construction means, methods, techniques, sequences, and procedures and for coordinating all portions of the work under the Contractor.

D. CONSTRUCTION SCHEDULE

The Construction Schedule shall be prepared after the award of contract. Soon after, a pre-construction meeting is held with the Owner and the Architect/Engineer to determine the areas to which the Contractor will be allowed access at any one time.

The Contractor is alerted to the fact that areas in which he will be working will be occupied by students and employees of the University as well as the general public. The Contractor's access, to and from the project site, will be confined to limited areas so as not to unduly disrupt the normal activities of the University.

TEMPORARY FACILITIES

A. GENERAL

The following temporary facilities descriptions represent standard conditions. Verify accuracy with Architect/Engineer at time of bids.

B. CONTRACTOR'S OFFICE

Provide field offices as required. Locate temporary field offices on site where directed by Architect/Engineer.

Appearance and location of field offices shall be approved by the Architect/Engineer.

Provide for all other administrative facilities and storage off the Owner's property.

C. STORAGE OF MATERIALS

All materials shall be stored in areas designated by the Architect/Engineer. All stored materials shall be arranged for the minimum disruption to occupants and to allow full access to and throughout the building. Materials stored outdoors shall be neat and orderly and covered to prevent damage or vandalism.

D. PARKING

1. **GENERAL**

University parking regulations will be strictly enforced.

Maintain Owner's parking areas free of dirt and debris resulting from operations under the contract.

2. **STANDING AND UNLOADING/LOADING VEHICLES**

All Contractors are to call Wayne State University Public Safety at 313-577-2222, and give at least 24 hours advance notice that they have vehicles that must be at the job site.

Vehicles will be permitted at the project site only as long as the vehicles are needed for loading/unloading, and must be immediately moved upon completion.

All unauthorized and/or unattended standing vehicles will be subject to ticketing and removal by University Police. Towed vehicles may be reclaimed by calling 313-577-2222, and paying any assessed charges.

3. COMPLIMENTARY PARKING

There is no complimentary parking for Contractor’s employee vehicles.

4. **WAYNE STATE UNIVERSITY PUBLIC/STUDENT PARKING AREAS**

Public Parking, on a first-come first-served basis is available. Contact the office of the One Card System, at 313-577-9513 for information on availability of parking on a contractual basis.

E. **TOILET FACILITIES**

The Owner's designated existing toilet facilities may be used by workers on the project. Contractor shall maintain such facilities in a neat and sanitary condition.

F. **TELEPHONE USE**

No use of the Owner's telephones will be permitted.

G. **ACCESS DEVICES**

The Contractor shall furnish and maintain temporary hoists, ladders, railings, scaffolds, runways, and the like as required for safe, normal access to the permanent construction until the permanent facilities are complete. Each trade shall furnish such additional means of access as may be required for the progress and completion of the work. Such temporary access devices shall meet all applicable local, state, and federal codes and regulations.

H. **HEAT AND VENTILATION**

Provide cold weather protection and temporary heat and ventilation as required during construction to protect the work from freezing and frost damage.

Provide adequate ventilation as required to maintain reasonable interior building air conditions and temperatures, to prevent accumulation of excess moisture, and to remove construction fumes.

Tarpaulins and other materials used for temporary enclosures. Coverings and protection shall be flameproofed.

I. **WATER SERVICE**

Sources of water are available at the site. The Owner will pay for reasonable amounts of water used for construction purposes.

The Contractor shall provide, at the earliest possible date, temporary connections to the water supply sources and maintain adequate distribution for all construction requirements. The Contractor shall protect sources against damage.

Methods of conveying this water shall be approved by the Architect/Engineer and shall not interfere with the Owner's operations.

J. **ELECTRICAL SERVICES**

All charges for reasonable amounts of electrical power energy used for temporary lighting and power required for this work will be paid by the Owner.

The Contractor shall provide and maintain any temporary electrical lighting and power required for this work. At the completion of the work, all such temporary electrical facilities shall be removed and disposed of by the Contractor.

Temporary lighting and power shall comply with the regulations and requirements of the National Electrical Code

INSPECTIONS AND TESTS

The Architect/Engineer shall at all times have access to the work wherever it is in preparation or in progress and the Contractor shall provide proper facilities for such access and for observation.

No failure of the Architect/Engineer, during the progress of the work, to discover or reject materials or work not in accordance with the Contract Specifications and Drawings shall be deemed an acceptance thereof nor a waiver of defects therein. Likewise, no acceptance or waiver shall be inferred or implied due to payments made to contractor or by partial or entire occupancy of the work, or installation of materials that are not strictly in accordance with the Contract Specifications and Drawings.

Where tests are specifically called for in the Specifications, the Owner shall pay all costs of such tests and engineering services unless otherwise stated in the contract.

Where tests are not specifically called for in the Specifications, but are required by the Architect/Engineer or Consultant, the Owner shall pay all costs of such tests and engineering services unless the tests reveal that the workmanship or materials used by the Contractor are not in conformity with the Drawings, Specifications, and/or approved shop drawings. In such event, the Contractor shall pay for the tests, shall remove all work and materials so failing to conform and replace with work and materials that are in full conformity.

CLEAN-UP

The Contractor shall at all times keep the Owner's premises and the adjoining premises, driveways and streets clean of rubbish caused by the Contractor's operations and at the completion of the work shall remove all the rubbish, all of his tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the work clean and ready for use. If the contractor does not attend to such cleaning immediately upon request, the Architect/Engineer may cause such cleaning to be done by others and charge the cost of same to the Contractor.

The Contractor will be responsible for all damage from fire that originates in, or is propagated by, accumulations of rubbish or debris.

All rubbish and debris shall be disposed of off the Owner's property in an approved sanitary landfill site. No open burning of debris or rubbish will be permitted. Job site shall be left neat and clean at the completion of each day's operation.

PROJECT CLOSE-OUT

A. **RECORD DRAWINGS**

At beginning of job, provide one copy of Working Drawings, and record changes, between Working Drawings and "As Builts", including changes made by Addenda, Change Orders, Shop Drawings, etc. These shall be kept up to date. Update to indicate make of all mechanical and electrical equipment and fixtures installed. Keep these Record Prints in good condition and available for inspection by the Architect/Engineer.

Upon completion of the job, turn over to the Architect/Engineer Record Prints of Working Drawings showing all job changes.

B. **OPERATING AND MAINTENANCE DATA**

Prepare and furnish to the Architect/Engineer three (3) bound copies of "Operating and Maintenance Manual" on all equipment installed under this Contract.

Manual shall include copies of all Manufacturers' "Operating and Service Instructions", including Parts List, Control Diagrams, Description of Control Systems, Operating, Electrical Wiring, and any other information needed to understand, operate and maintain the equipment. The names and addresses of all subcontractors shall be included. These instructions shall be custom-prepared for this job -- catalog cuts will **not** be accepted. Equipment shall be cross-referenced to Section of Specifications and to location shown and scheduled on drawings.

Include Test-Adjust-Balance Report in the Manual.

C. **FINAL INSPECTION**

Secure final inspections from the State of Michigan as soon as the work is completed and immediately submit such Certificates to the Architect/Engineer.

D. **GUARANTEES (See Sections 00510 and 01781)**

Guarantees on material and labor from the General Contractor and his subcontractors shall be as required in Sections 00510 and 01781.

E. **SWORN STATEMENT AND WAIVER OF LIENS**

Prior to final payment, the General Contractor shall provide a Contractor's Sworn Statement and Full Unconditional Waivers of Liens from all subcontractors for material and labor and from all suppliers who provide materials exceeding $10,000. Sworn Statements and signed waivers from all Subcontractors must accompany Pay Applications or they will be returned for such documentation prior to approval.

ASBESTOS HAZARD

The contractor shall not start any work in any area that has not been inspected for asbestos by the Owner's Industrial Hygiene Department, or a qualified representative of the Owner and approval is given for work to be done. If asbestos is found, safety measures as recommended by the Owner's Industrial Hygiene Department, or a qualified representative of the Owner, shall be completed, or approval given for work to be done before work is started. The contractor shall not perform any asbestos removal or containment work under the contract.

KEYS

The Owner shall provide the contractor keys on loan to have access to the various spaces in order to complete the contract. Contractor will sign for and be responsible for each key on loan, returnable to Owner upon completion of the contract. In case of any lost keys, the Owner will back-charge the contract $250.00 for each core change. In the event that a Contractor wants access to a secured area, he shall give the Owner a minimum 48-hour notice.

SUMMARY OF WORK

SUMMARY OF WORK

PROJECT: Demolition of 5959 Woodward Ave

WSU PROJECT NO.: 199-405901

PROJECT MANAGER: Ariel Suarez

1. EXAMINATION

   The Contractor shall visit the site and become familiar with conditions under which he will be working. Also meet with the project manager and review site access, storage areas, etc.

2. Description of Work – Project includes **Demolition of 5959 Woodward Avenue building and parking lot. Building is a standalone, one story, 6,045 square-foot structure built on grade. Building and parking lot will be restored with grass.**

3. The building is located at

   Wayne State University
   5959 Woodward Avenue Detroit MI 48202
   Detroit, Michigan 48202

Wayne State University

Demolition of 5959 Woodward Avenue

WSU No. 199-405901

Technical Specifications
Project No. 231581

fishbeck
Engineers | Architects | Scientists | Constructors

SECTION 00 01 10 – TABLE OF CONTENTS

END OF TABLE OF CONTENTS

SECTION 02 41 00 - DEMOLITION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Building demolition excluding removal of hazardous materials and toxic substances.

B. Selective demolition of built site elements.

C. Abandonment and removal of existing utilities and utility structures.

1.2 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.3 DEFINITIONS

A. Demolition: Dismantle, raze, destroy or wreck any building or structure or any part thereof.

B. Remove: Detach or dismantle items from existing construction and dispose of them off site, unless items are indicated to be salvaged or reinstalled.

C. Remove and Salvage: Detach or dismantle items from existing construction in a manner to prevent damage. Clean, package, label and deliver salvaged items to Owner in ready-for-reuse condition.

D. Existing to Remain: Designation for existing items that are not to be removed and that are not otherwise indicated to be salvaged or reinstalled.

1.4 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the pertinent provisions of the following:
   1. American National Standards Institute: ANSI A10.6 - Safety Requirements for Demolition Operations.
   2. ASTM: D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort.
   3. EPA: Rule 406(b) of the Toxic Substances Control Act of 1992.
   4. NFPA: NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.5 PROJECT CONDITIONS

A. Access:
   1. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.
   2. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from authorities having jurisdiction.

B. Storage or sale of removed items or materials on Site will not be permitted.

C. Maintenance of Utilities:
   1. Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.

D. Unknown Hazardous Materials:
   1. It is expected that hazardous materials will be encountered in the Work.
      a. Refer to Predemolition/Renovation Hazardous Materials Survey of 5959 Woodward Avenue, Detroit, MI 48202 dated November 2, 2023, prepared by Testing Engineers and Consultants, Inc.
   2. If additional materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Engineer and Owner in accordance with the General Conditions.

PART 2 PRODUCTS

2.1 MATERIALS

A. Fill Material: See Division 31 Section “Excavation And Fill For Utilities.”

PART 3 EXECUTION

3.1 DEMOLITION

A. Remove the entire building.

B. Remove paving and curbs required to accomplish new work.

C. Remove all other paving and curbs within site boundaries.

D. Remove foundation walls and footings in their entirety.

E. Remove concrete slabs on grade within site boundaries.

F. Remove other items indicated, for salvage, relocation, recycling, and remediation.

G. Fill excavations, open pits, and holes in ground areas generated as result of removals, using specified fill; compact fill as specified in Division 31 Section “Grading.”

3.2 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Do not begin removal until receipt of notification to proceed from Owner.

B. Do not begin removal until built elements to be salvaged or relocated have been removed.

C. Hazardous Materials:
   1. Hazardous Materials: Comply with 29 CFR 1926 and state and local regulations.

D. Perform demolition in a manner that maximizes salvage and recycling of materials.
   1. Dismantle existing construction and separate materials.
   2. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

E. Partial Removal of Paving and Curbs: Neatly saw cut at right angle to surface.

3.3 EXISTING UTILITIES

A. Coordinate work with utility companies. Notify utilities before starting work, comply with their requirements, and obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.

E. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.

F. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone. Identify and mark, in same manner as other utilities to remain, utilities to be reconnected. Provide markings for capped piping locations for the natural gas, water and sanitary sewer system feeds for future site development reconnection.

3.4 PREPERATION

A. Dangerous Materials
   1. Drain, purge, or otherwise remove, collect, and dispose of chemicals, gases, explosives, acids, flammables, or other dangerous materials before proceeding with demolition operations.

B. Site access and Temporary Controls:
   1. Conduct demolition and debris removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   2. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and other authorities having jurisdiction.
   3. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.
   4. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
   5. Protect existing Site improvements, appurtenances, and landscape features to remain.
   6. Erect a plainly visible fence around drip line of individual trees or around perimeter drip line or groups of trees to remain.

3.5 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Leave site in clean condition, ready for subsequent work.

C. Clean up spillage and wind-blown debris from public and private lands.

D. Transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

E. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

END OF SECTION

SECTION 31 22 00 – GRADING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the furnishing and installation of the major items listed below:
   1. Excavation.
   2. Cutting and filling.
   3. Rough and finish grading.
   4. Disposal of excavated materials.
   5. Topsoil.
   6. Excess water control.
   7. Pavement subgrade.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. AOAC - Association of Official Agricultural Chemists: Methods of Testing.
   2. ASTM Standards:
      a. D422 - Method for Particle-Size Analysis of Soils.
      b. D698 - Laboratory Compaction Characteristics of Soil Using Standard Effort.
      c. D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort.
      d. D2487 - Classification of Soils for Engineering Purposes.
   3. State DOT Current Standards:
      a. Specifications for Construction.
      b. Standard Plans.

1.4 DEFINITIONS

A. Terms:
   1. Driving Surface: A pavement, curb, or sidewalk.
   2. Excavation:
      a. Removing the following materials from their present location:
         1) Native below-grade material such as soil, rocks, boulders less than 1/2 cubic yard in volume, and buried trees.
         2) Man-made items such as, but not necessarily limited to:
            a) Bituminous and concrete paving.
            b) Curbs.
            c) Riprap.
            d) Head walls.
            e) Underground utilities.
            f) Manholes and catch basins.
            g) Foundations.
            h) Sidewalks.
   3. Fill: Soil, native material, imported material or other material which is placed over the subgrade, or excavated areas; under roadways, parking areas, walks, buildings, or structures; and anywhere else on the Site.
   4. Grading: The act of moving soil from one location on the Site to another to achieve the contours and elevations as indicated on the Drawings and as herein specified.

5. Hardpan:
   a. Cemented soil layers.
   b. Is not hard clay layers that are not cemented.
6. Imported Material: Soil material which is purchased by Contractor and hauled onto the Site.
7. Native Material: Soil and other natural earth materials, except rock, which are existing on the Site prior to the start of Work.
8. Pavement: Any combination of subbase, base course and concrete, bituminous or aggregate surface course, including shoulders, placed on a subgrade. Includes roadways, parking areas, driveways, and bituminous seal coat.
9. Rock Excavation:
   a. Excavation of igneous, metamorphic or sedimentary rock or hardpan which cannot be excavated without continuous drilling or blasting or continuous use of a ripper or other special equipment.
   b. Excavation of boulders of 1/2 cubic yard or more in volume.
10. Structure: A building, retaining wall, tank, footing, slab, or other similar construction.
11. Subbase: The layer of material placed on the subgrade as part of the pavement structure.
12. Subgrade:
    a. Below structures and below fill on the Site: The top elevation of the undisturbed native material after all topsoil is stripped off and excavation is completed.
    b. Below driving surfaces: The bottom elevation of the subbase.
13. Surface Improvement: All improvements beyond what might be encountered in an open unimproved field.
14. Undercut: Excavation of native material from below the bottom of footings, floors, structures, and subbases.
15. Utility Structure: Manhole, catch basin, valve chamber, junction chamber, water main valve, or other similar utility appurtenance.
16. Other Definitions: Other earthwork terms not defined in the Contract Documents shall be as defined in state DOT Standard Specifications for Construction.

1.5 QUALITY ASSURANCE

A. Testing will be performed in accordance with the Contractors Quality Control Plan.

B. Compaction:
   1. Predominately Granular Soils:
      a. Density shall be determined by using the modified Proctor method, ASTM D1557.
      b. Compact fill to at least 95% maximum density.
      c. The first 12 inches of subgrade below all driving surfaces, structures, utility structures, and fill on the Site:
         1) Shall be tested for density.
         2) Compact to at least 95% maximum density if the existing density is below 95%.
   2. Predominately Cohesive Soils:
      a. Density shall be determined by using the standard Proctor method, ASTM D698.
      b. Compact fill to at least 98% maximum density.
      c. The first 12 inches of subgrade below all driving surfaces, structures, utility structures, and fill on the Site:
         1) Shall be tested for density.
         2) Compact to at least 98% maximum density if the existing density is below 95%.

1.6 PROJECT CONDITIONS

A. Dust Control:
   1. Use all legal means necessary to control dust on and near the Work and on and near all off-site borrow areas if such dust is caused by Contractor's operations during performance of the Work or if resulting from the condition of the Site when earthwork operations are suspended.
   2. Treat haul roads, delivery roads, temporary site access roads and other surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on the Site.

3. Scrape, broom, or vacuum adjacent streets to remove tracked dirt every Friday afternoon, or more often as necessary if directed by Engineer. Utilize vacuum if dust from brooming is excessive in opinion of Engineer.

B. Existing Structures, Utility Structures, and Utilities:
1. Call MISS DIG to locate all existing underground utilities prior to starting excavation.
2. Where utilities, utility structures, or structures are encountered which are in active use:
a. Provide adequate protection for them.
b. Be responsible for damages to them.
3. Provide stand-by utility service if temporary removal is necessary for a period exceeding 2 hours.
4. Where utility service connections to occupied buildings must be temporarily disconnected, give 48 hours notice to the affected occupants of the time and duration of the anticipated shut off.
5. Notify Fire Department 48 hours in advance if water main or fire supply line shutoff is required.
6. Raise, lower, or move underground utilities, utility structures, or structures which interfere with the utility, utility structure, or structure being constructed as part of this Work.

C. Special Filling Requirements:
1. Comply with the regulations of the state DOT, county road, and railroad company engineering departments with regard to placing fill and compaction in their respective rights-of-way.
2. Obtain necessary permits for filling activities off Site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:
1. Approval Required: All material shall be subject to the approval of Engineer or independent testing laboratory.
2. Notification: For approval of imported material, notify Engineer or independent testing laboratory at least 1 week in advance of intention to import material, designate the proposed borrow area, and permit Engineer or independent testing laboratory to sample as necessary from the borrow area for the purpose of making acceptance tests to prove the quality of the material.

B. Material Sources and Uses:
1. Imported Material:
a. Fill in undercut.
b. Fill below structures, utility structures, or driving surfaces.
c. Stone stabilization course.
d. Fill not below structures, utility structures, or driving surfaces.
e. Topsoil.

C. Fill In Undercut: MDOT 902, Granular Material Class II.

D. Fill below structures, utility structures, or driving surfaces: MDOT 902, Granular Material Class II

E. Stone Stabilization Course:
1. Crushed Stone: 1-1/2 inches maximum size.
2. Filter Fabric:
a. By Mirafi; Amoco; Exxon; Nicolon; or equal.
b. Monofilament polypropylene woven fabric.
c. Equivalent opening size of 70.

F. Fill Not Below Structures, Utility Structures, or Driving Surfaces:
1. Native material.
2. Exclusive of gray or blue clay, peat, organic matter, or frozen lumps.
3. Containing no rocks or lumps over 3 inches in greatest dimension.
4. Obtain approval for using native material as fill from Engineer or independent testing laboratory.

G. Topsoil:
1. Fertile, friable soil, containing a minimum of 2.5% and maximum 12% of organic matter as determined by the Loss on Ignition Test, AOAC, with not more than 50% clay and not more than 55% sand as determined in accordance with ASTM D422.
2. At least 90% of the material shall pass the No. 10 sieve.
3. Topsoil shall be free of refuse or all material toxic to plant growth. Ensure that the topsoil is contamination-free and clean at the source prior to transport to Site.
4. Topsoil shall be free of subsoil and stumps, roots, brush, stones or similar objects larger than 1-inch diameter.
5. Ordinary sods and herbaceous growth, like grass, need not be removed, but shall be thoroughly broken up and intermixed with soil during handling operations.
6. Topsoil, unless otherwise specified or approved, shall have, according to Methods of Testing by the AOAC, acidity range of approximately 5.5 pH to 7.6 pH or as approved by Engineer prior to delivery.

2.2 OTHER MATERIALS

A. All other materials, not specifically described but required for proper completion of the work of this Section, shall be as selected by Contractor subject to the approval of Engineer or independent testing laboratory.

PART 3 - EXECUTION

3.1 EXCAVATION

A. Topsoil:
1. Remove all topsoil to depth at which subsoil is encountered, from all areas under buildings, driving surfaces, and from all areas which are to be cut to lower grades or filled.
2. With Engineer's approval, topsoil to be used for finish grading may be stored on the Site.
3. Other topsoil may be used for fill in noncritical areas with approval of Engineer.

B. Obstructions:
1. Remove and dispose of buried trees, rocks, boulders, driving surfaces, pipes and the like, as required for the performance of the Work.
2. Exercise care in excavating around catch basins, inlets, and manholes.
3. Avoid removing or loosening castings or pushing dirt into utility structures.
4. Repair or replace damaged or displaced castings; remove dirt entering utility structures during the performance of the Work at no additional cost to Owner.

C. Cutting Paved Surfaces and Similar Improvements:
1. All cuts shall be a minimum of 1-foot wider than trench on each side. When the remaining width of paved surface is less than 4 feet, remove the entire paved surface.
2. Before removing pavement, mark the pavement neatly, paralleling pipe lines and existing street lines. Space the marks the width of the trench.
3. Concrete:
   a. Pavements: Saw cut if over 3 feet from expansion or construction joint, otherwise remove to joint.
   b. Sidewalks: Remove to joints.
   c. Curb and gutter: Remove to joints.
4. Final surface Course Bituminous: Saw cut joints unless otherwise approved by Engineer.
5. Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement.
6. Contractor may tunnel under curbs that are encountered. Replace curb disturbed by construction.
7. Dispose of materials removed.

D. Utilities To Be Abandoned:
1. When pipes, conduits, sewers, or other utilities or utility structures are removed from the excavation leaving dead ends in the ground, fully plug such ends with brick and mortar.
2. Entirely remove abandoned utility structures unless otherwise specified or indicated on the Drawings.
3. All salvageable materials will remain the property of Owner unless otherwise indicated by Owner.
4.

E. Excavating:
   1. All excavation shall be by open cut from the surface except as herein specified or as indicated on the Drawings.
   2. If required because of excess water conditions, place stone stabilization course prior to proceeding with construction. Place filter fabric over stone stabilization course.

F. Rock Excavation:
   1. Notify Engineer prior to removal if rock is encountered.
   2. Where rock is encountered within the excavation, expose the surface of the rock sufficient to permit adequate measurements to be taken before the rock excavation is started.

3.2 FILL

A. General:
   1. Do not place fill until the subgrade been examined by Engineer or independent testing laboratory.
   2. Place fill in even layers not exceeding 10 inches in depth and thoroughly compact as herein specified.
   3. Do not place additional fill until compaction on a lift complies with specification requirements.
   4. If an analysis of the soil being placed shows a marked difference from 1 location to another, the fill being placed shall not be made up of a mixture of these materials.
   5. Handle each different type of material continuously so that field control of moisture and density may be based upon a known type of material.
   6. Do not place fill following a heavy rain without first making certain on isolated test areas that compaction se
   7. Suggested Equipment Selections:
      a. If soil is predominantly granular, use pneumatic tired or vibratory drum rollers loaded to not less than 325 pounds in accordance with rated inch of tire width.
      b. For clay fills, compact each layer with sheepsfoot rollers. Rollers shall have staggered rows of feet projecting not less than 7 inches from drum and shall be loaded to produce at least 200 pounds per square inch of tamping area in contact with the ground.
      c. Compact around structures and utility structures with hand operated vibrating compactors for granular soils and Barco rammer type compactors for clay soils.

B. Moisture:
   1. Compact all fill with the moisture content as specified.
   2. If fill material is too wet, provide and operate approved means to assist the drying of the fill until suitable for compaction.
   3. If fill material is too dry, provide and operate approved means to add moisture to the fill layers.

3.3 GRADING

A. General:
   1. Perform all rough and finish grading required to attain the elevations indicated on the Drawings.
   2. Perform rough grading to an accuracy of ± 0.10 feet.
   3. Perform finish grading to an accuracy of ± 0.05 feet.
   4. Comply with all excavating and fill requirements specified herein during grading operations.

B. Grading Around Buildings: Control the grading around buildings so the ground is pitched to prevent water from running into the excavated areas of a building or damaging other Site features.

C. Treatment After Completion of Grading:
   1. After grading is completed, permit no further excavation, filling, or grading, except with the approval of Engineer.
   2. Use all means necessary to prevent the erosion of freshly graded areas during construction and until such time as permanent drainage and erosion control measures have been installed.

D. Topsoil: All graded areas, outside of buildings and driving surfaces, shall receive 4 inches of topsoil.

3.4 EXCESS WATER CONTROL

A. Regulations and Permits: Comply with soil erosion control permits in accordance with Mich. P.A. 451, Part 91 of 1994, the Natural Resource and Environmental Protection Act, and all pertinent rules, laws, and regulations.

B. Unfavorable Weather:
   1. Do not place, spread, or roll any fill material during unfavorable weather conditions.
   2. Do not resume operations until moisture content and fill density are satisfactory to Engineer or independent testing laboratory.

C. Pumping and Drainage:
   1. Provide, maintain, and use at all times during construction adequate means and devices to promptly remove and dispose of all water from every source entering the excavations or other parts of the Work.
   2. Dewater by means which will ensure dry excavations, preserve final lines and grades, and do not disturb or displace adjacent soil. Use wells, portable pumps, temporary underdrains or other methods as is necessary.
   3. Perform Pumping and Drainage:
      a. In such a manner to cause no damage to property or structures and without interference to the rights of the public, owners of private property, pedestrians, vehicular traffic, or the work of other contractors.
      b. In accordance with all pertinent laws, rules, ordinances and regulations.
   4. Do not overload or obstruct existing drainage facilities.
   5. Provide berms or channels to prevent flooding of subgrade. Promptly remove all water collected in depressions.

3.5 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. General:
   1. Remove and properly dispose of all excavated material not needed to complete filling and grading.
   2. Dispose of excess excavated material at a location off the Site.
   3. Disposal of all materials shall not violate laws, rules, regulations and the like regarding the filling of flood plains, wetlands and other environmentally sensitive areas.
   4. Provide adequate controls to maintain disposal sites in a neat and safe conditions by periodic leveling of material and such other practices as are necessary.
   5. Provide all soil erosion control measures necessary to prevent soil erosion and sedimentation of wetlands, rivers, ditches, or similar low lying areas.

3.6 CLEANUP

A. Upon completion of the work of this Section, remove all excess excavated material, trash, and debris resulting from construction operations. Remove equipment and tools. Leave the Site in a neat and orderly condition acceptable to Engineer.

END OF SECTION 31 22 00

SECTION 31 23 03 – EXCAVATION AND FILL FOR UTILITIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the furnishing and installation of the major items listed below:
   1. Excavation and trenching in earth and in rock.
   2. Disposal of items from clearing and unsuitable or excess excavated materials.
   3. Complete drainage of excavations.
   4. Temporary or permanent sheeting, bracing and shoring of excavations.
   5. Installation of normal and special foundations, bedding and backfill materials.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. ASTM Standard Specifications:
      a. D1556 - Density and Unit Weight of Soil In Place by the Sand-Cone Method.
      b. D1557 - Laboratory Compaction Characteristics of Soil Using Modified Effort.
      c. D2321 – Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
      d. D2922 - Density of Soil and Soil-Aggregate in Place by Nuclear Methods.
   2. State DOT Current Standards:
      a. Specifications for Construction.
      b. Standard Plans .

1.4 DEFINITIONS

A. Terms:
   1. Bedding: The material placed around a utility between 4 inches below to 12 inches above the utility the full width of the trench.
   2. Driving Surface: A pavement, curb, or sidewalk.
   3. Excavation:
      a. Removing the following materials from their present location:
         1) Native below-grade material such as soil, rocks, boulders less than 1/2 cubic yard in volume, and buried trees.
         2) Man-made items such as, but not necessarily limited to:
            a) Bituminous and concrete paving.
            b) Curbs.
            c) Riprap.
            d) Head walls.
            e) Underground utilities.
            f) Manholes and catch basins.
            g) Foundations.
            h) Sidewalks.
   4. Extra Earth Excavation: Excavation of native material from below the normal trench bottom.
   5. Foundation Material: The material placed in a trench undercut to replace extra earth excavation.
   6. Hardpan:
      a. Cemented soil layers.
      b. Is not hard clay layers that are not cemented.
   7. Imported Material: Soil material which is purchased by Contractor and hauled onto the Site.
   8. Native Material: Soil and other natural earth materials, except rock, which are existing on the Site prior to the start of Work.

9. Normal Trench Bottom: The surface of the undisturbed native material at an elevation 4 inches below the bottom of the utility.
10. Pavement: Any combination of subbase, base course and concrete, bituminous or aggregate surface course, including shoulders, placed on a subgrade. Includes roadways, parking areas, driveways, and bituminous seal coat.
11. Rock Excavation:
    a. Excavation of igneous, metamorphic or sedimentary rock or hardpan which cannot be excavated without continuous drilling and blasting or continuous use of a ripper or other special equipment.
    b. Excavation of boulders of 1/2 cubic yard or more in volume.
12. Special Foundations:
    a. Specially constructed systems for support of underground utilities such as timber piling, concrete foundations and surcharge techniques.
    b. Extra earth excavation and placing imported or native materials are not special foundations.
13. Structure: A building, retaining wall, tank, footing, slab, or other similar construction.
14. Suitable Material:
    a. Native material excavated from the trench and approved as backfill by Engineer or independent testing laboratory.
    b. Not used under or within 1 on 1 slope of driving surfaces or structures.
    c. Placed between the top of the bedding or trench backfill as indicated on the Drawings and the bottom of the surface restoration.
15. Trench Backfill:
    a. The material placed between the top of bedding and the bottom of suitable material, the surface restoration or driving surface, as indicated on the Drawings.
    b. Used under and within 1 on 1 slope of driving surfaces or structures.
16. Utility Structure: Manhole, catch basin, valve chamber, junction chamber, water main valve, or other similar utility appurtenance.
17. Other Definitions: Other earthwork terms not defined herein or in the Contract Documents shall be as defined in state DOT Standard Specifications for Construction.

1.5 DESIGN AND PERFORMANCE REQUIREMENTS

A. Trench Bottom Suitability:
1. Be responsible for the suitability of the normal trench bottom in supporting the utility, bedding and backfill.
2. Notify Engineer and await Engineer's decision if a possible unsuitable condition exists.
3. Poor dewatering techniques or lack of excess water control shall not be a reason for additional payment for remedial measures.

B. Trench Wall Stability:
1. Be responsible for the trench configuration, including sheeting, shoring and bracing necessary to support trench side walls from collapsing.
2. Be responsible for the structural design and stability of a pipe-laying box if utilized on the Project to prevent trench walls from collapsing.

1.6 QUALITY ASSURANCE

A. Testing: Testing will be performed in accordance with the Contractor’s Quality Control Plan.

B. Compaction:
1. Determine density by the modified Proctor method, ASTM D1557.
2. Compact granular trench backfill and bedding to at least 95% maximum density.
3. Compact suitable backfill material to at least 90% maximum density.
4. The first 12 inches of native material at the bottom of utility trenches:
    a. Test for density.
    b. Compact to at least 95% maximum density (modified proctor) if the existing density is below 95% maximum density (MP).
    c. Compact clay soil to at least 98% maximum density in accordance with standard proctor ASTM D698, if below 98% maximum density (SP).

1.7 SUBMITTALS

A. Action Submittals: For imported materials:
   1. Source.
   2. State DOT classification.
   3. Sieve Analysis.

1.8 PROJECT CONDITIONS

A. Dust Control:
   1. Use all legal means necessary to control dust on and near the Work and on and near off-site borrow areas if such dust is caused by Contractor's operations during performance of the Work or if resulting from the condition of the Site when earthwork operations are suspended.
   2. Moisten or otherwise treat haul roads, delivery roads, temporary site access roads and other surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on the Site.
   3. Scrape, broom, or vacuum adjacent streets to remove tracked dirt every Friday afternoon, or more as necessary if directed by Engineer. Utilize vacuum if dust from brooming is excessive in opinion of Engineer.

B. Existing Structures, Utility Structures, and Utilities:
   1. Call MISS DIG to locate existing underground utilities prior to starting excavation.
   2. Where utilities, utility structures or structures are encountered which are in active use:
      a. Provide adequate protection for them.
      b. Be responsible for damage to them.
   3. Provide stand-by utility service if temporary removal is necessary for a period exceeding 2 hours.
   4. Where utility service connections to occupied buildings must be temporarily disconnected, give 48 hours notice to the affected occupants of the time and duration of the anticipated shutoff.
   5. Notify Fire Department 48 hours in advance if water main or fire supply line shutoff is required.
   6. Raise, lower, or move underground utilities, utility structures or structures which interfere with the utility or utility structure being constructed as part of this Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General:
   1. Approval Required: Material shall be subject to the approval of Engineer or independent testing laboratory.
   2. Notification: For approval of imported material, notify Engineer or independent testing laboratory at least 1 week in advance of intention to import material, designate the proposed borrow area, and permit Engineer or independent testing laboratory to sample as necessary from the borrow area for the purpose of making acceptance tests to prove the quality of the material.

B. Material Sources and Uses:
   1. Imported Material:
      a. Foundation material.
      b. Bedding.
      c. Pea stone.
      d. Trench backfill.
   2. Native material unless quantity is not sufficient; then shall be imported material: Suitable material.

C. Foundation Material for Crushed Stone: 1-1/2-inch maximum size.

D. Bedding:
   1. For Pipes Less Than 36 Inches:
      a. MDOT 902 Granular Material Class II modified to 100% passing a 1/2-inch sieve.
      b. MDOT 902 Coarse Aggregate 17A.
   2. For Utility Structures:
      a. Sand gravel fill of such gradation that 100% will pass a 1/2-inch sieve and not more than 10% by weight is lost by washing, or
      b. MDOT 902 Granular Material Class II modified to 100% passing a 1/2-inch sieve.

E. Pea Stone: Clean stone with 100% passing a 3/8-inch sieve and 100% being retained on a No. 8 sieve.

F. Trench Backfill: MDOT 902 Granular Material Class II.

G. Suitable Material:
   1. Native Material Which is Used as Backfill:
      a. Exclusive of gray or blue clay, peat, organic matter, or frozen lumps.
      b. Containing no rocks or lumps over 3 inches in greatest dimension.
      c. Having a moisture content such that material is capable of being compacted to 90% maximum density.
   2. MDOT 902 Granular Material Class II if native material is not adequate in opinion of Engineer.

2.2 OTHER MATERIALS

A. Other materials, not specifically described but required for proper completion of the work of this Section, shall be as selected by Contractor subject to the approval of Engineer or independent testing laboratory.

PART 3 - EXECUTION

3.1 GENERAL

A. Excavating, Backfilling and Compacting:
   1. For Utility Structures: In accordance with this Section.

B. Obstructions:
   1. Remove and dispose of buried trees, rocks, boulders, driving surfaces, pipes and the like, as required for the performance of the Work.
   2. Exercise care in excavating around catch basins, inlets and manholes.
   3. Avoid removing or loosening castings.
   4. Repair and replace damaged or displaced castings; remove dirt entering utility structures during the performance of the Work at no additional cost to Owner.

C. Cutting Paved Surfaces and Similar Improvements:
   1. Cut pavement prior to excavating.
   2. Cuts shall be a minimum of 1-foot wider than trench on each side. When the remaining width of paved surface is less than 4 feet, remove the entire paved surface.
   3. Before removing pavement, mark the pavement neatly, paralleling pipe lines and existing street lines. Space the marks the width of the trench.
   4. Concrete:
      a. Pavements: Saw cut if over 3 feet from expansion or construction joint, otherwise remove to joint.
      b. Sidewalks: Remove to joints.
      c. Curb and Gutter: Remove to joints.
   5. Final Surface Course Bituminous: Saw cut joints unless otherwise approved by Engineer.
   6. Do not disturb or damage the adjacent pavement. If the adjacent pavement is disturbed or damaged, remove and replace the damaged pavement.
   7. Contractor may tunnel under curbs that are encountered. Replace curb disturbed by construction.
   8. Dispose of materials removed.

D. Utilities to be Abandoned:
   1. When pipes, conduits, sewers or utility structures are removed from the trench leaving dead ends in the ground, fully plug such ends with brick and mortar.
   2. Entirely remove abandoned utility structures unless otherwise specified or indicated on the Drawings.
   3. Remove from the excavation materials which can be readily salvaged and store on the Site.
   4. Salvageable materials will remain the property of Owner unless otherwise indicated by Owner.

E. Extra Earth Excavation:
   1. If soft material, which in the opinion of Engineer or independent testing laboratory is not suitable, is encountered below the normal trench bottom or below a utility structure Engineer may order the removal

of this soft material and its replacement with specified material in order to make a suitable foundation for the construction of the utility or utility structure.

2. Extra earth excavation made at the order of Engineer will be paid for on the basis of the actual quantity of material excavated. Do not proceed further until instructions are received and necessary measurements made for purposes of establishing additional volume of excavation.
3. No extra payment will be made if removal is required as a result of poor dewatering techniques.
4. Special foundations shall be determined on an individual basis by Engineer in cooperation with Contractor, unless otherwise provided in the Contract Documents.

3.2 EXCAVATION AND TRENCHING

A. General:
   1. By open cut from surface unless designated otherwise.
   2. Slope sides of trench adequately for protection of the Work and safety of workers.

B. Maximum Length of Open Trench: 200 feet.

C. Width:
   1. Minimum Clearance on Each Side of Utility:
      a. To 16 Inches Diameter: 8 inches.
      b. Greater Than 16 Inches Diameter: Pipe outside diameter times 1.25 plus 12 inches.
   2. Maximum Width of Trench at Top of Bedding:
      a. Up Through 30-Inch Diameter Utility: 16 inches plus utility diameter.
      b. Greater Than 30-Inch Diameter Utility: 24 inches plus utility diameter.
   3. Maximum Width of Trench at Ground Surface:
      a. Not outside of the property line or easement.
      b. As required for protection of the Work and safety of workers.
      c. Use sheeting, bracing and shoring if required.
   4. Provide sufficient space in the trench to permit the joint to be properly made.

D. Depth:
   1. Excavate to provide the elevations, grades, and depths of cover indicated on the Drawings and herein specified.
   2. The 4 inches of required bedding material below the utility may be omitted if:
      a. Approved by Engineer.
      b. Contractor arranges and pays for testing of the native material.
      c. The native material complies with MDOT 902 Granular Material Class II material, modified so that 100% passes a 1/2-inch sieve.
      d. The material is compacted as specified herein.
   3. Excavate to the normal trench bottom elevation with an accuracy of ± 0.10 feet.

E. Rock Excavation:
   1. Where rock excavation is encountered within the excavation, expose the surface of the rock sufficient to permit adequate measurements to be taken before the rock excavation is started.
   2. Notify Engineer prior to removal if rock is encountered.
   3. No utility shall be within 6 inches of rock.
   4. Blasting:
      a. Only with permission of Engineer and in accordance with laws and regulations applying thereto.
      b. Secure permit if required.
      c. Notify utility and public agencies.
      d. Explosives shall be used with extreme care by experienced workers only.
      e. Hours shall be fixed by Engineer.
      f. Contractor solely responsible for safety, damage and control of blasting operations.

F. Bedding:
   1. Place the bedding material up to 1/8 the height of the utility. Compact as herein specified.
   2. Accurately shape the bedding material to fit the pipe shape. Recess the bedding to relieve the pressure on the bell or other projecting utility joint.
   3. After laying out the utility, tamp additional bedding in place up to the midpoint of the utility. Use hand-operated compactors to achieve the required compaction.

4. Place additional bedding up to 12 inches above the top of the utility. Use hand operated compactors to achieve required compaction.
5. Place bedding in maximum lifts of 10 inches.
6. No payment shall be made for aggregate or stone bedding when used for Contractor convenience.

G. Trench Backfill:
1. Use backfill material as each Drawing detail indicates and as the material is defined herein.
2. Place backfill in 12-inch lifts and compact as herein specified. Engineer will consider greater lifts if testing indicates that the required compaction is being achieved.

H. Utility Structures:
1. Place and compact specified bedding below utility structures.
2. Backfill around utility structures shall be of the same type backfill as that required for the trench in accordance with these Contract Documents.
3. Place backfill in 12-inch lifts and compact as herein specified.

3.3 DISPOSAL OF EXCESS EXCAVATED MATERIAL

A. General: Contractor responsibility and expense.

B. Disposal Sites:
1. Material desired by Owner shall be disposed of by Contractor in the following priority order:
   a. At locations designated by the Contract Documents.
   b. Owner may choose not to accept certain materials, including but not necessarily limited to, items from clearing, muck, peat, marl and whole or broken man-made items removed by construction.
2. Material not desired by Owner shall be disposed of in a location determined by Contractor.
3. Disposal of materials shall not violate laws, rules, regulations and the like regarding the filling of flood plains, wetlands and other environmentally sensitive areas.
4. Provide adequate controls to maintain disposal sites in a neat and safe condition by periodic leveling of material, and such other practices as are necessary.
5. Provide soil erosion control measures necessary to prevent soil erosion and sedimentation of wetlands, rivers, ditches, or similar low lying areas.

3.4 EXCESS WATER CONTROL

A. Regulations and Permits: Comply with soil erosion control permit in accordance with Mich. P.A. 451, Part 91 of 1994, the Natural Resource and Environmental Protection Act, and all pertinent rules, laws, and regulations.

B. Unfavorable Weather:
1. Do not place, spread or roll fill material during unfavorable weather conditions.
2. Do not resume operations until moisture content and fill density are satisfactory to Engineer or independent testing laboratory.

C. Pumping and Drainage:
1. Provide, maintain and use at all times during construction adequate means and devices to promptly remove and dispose of water from every source entering the excavations or other parts of the Work.
2. Dewater by means which will ensure dry excavations, preserve final lines and grades, and do not disturb or displace adjacent soil. Use wells, portable pumps, temporary underdrains, or other methods as necessary.
3. Perform Pumping and Drainage:
   a. In such a manner to cause no damage to property or structures and without interference to the rights of the public, owners of private property, pedestrians, vehicular traffic, or the work of other contractors.
   b. In accordance with pertinent laws, rules, ordinances, and regulations.
4. Do not overload or obstruct existing drainage facilities.

D. General:
1. Keep excavations dry during construction.

2. Remove water by use of wells, well points, portable pumps, bailing, drains, underdrains or other acceptable methods.
3. Provide crushed stone or gravel as required to aid dewatering operations.
4. Divert or temporarily reroute existing sewers and drainage of discharge lines to adequate and acceptable outlets during construction. Contractor responsible to ascertain availability of outlets.
5. Divert surface water from entering excavations by construction and maintenance of channels or berms.
6. Sediment traps and other soil erosion control measures shall prevent soil particles from entering any sewer, watercourse or similar conveyance.
7. Protect utilities, utility structures, and structures, existing and new, from hydrostatic uplift.

3.5 SHEETING, SHORING AND BRACING EXCAVATIONS

A. General:
   1. Furnish, put in place and maintain sheeting, bracing and shoring as may be required to properly support the sides of excavations and to prevent movement of earth which could in any way injure the Work or adjacent property.
   2. Exercise care in the removal of sheeting, shoring, bracing and timbering to prevent collapse or caving of the excavation faces being supported and damage to the Work and adjacent property.
   3. A pipe-laying box may be used in lieu of sheeting.

B. Sheeting:
   1. Do not install by jetting.
   2. Remove as backfilling proceeds, unless ordered left in place by Engineer. Use care to fill and compact voids created by removal, especially below mid-height of utility.
   3. Sheeting Left in Place:
      a. Requires written approval of Engineer.
      b. Cut off minimum of 2 feet below finished grade.

3.6 CLEANUP

A. Upon completion of the work of this Section, remove all excess excavated material, trash, and debris resulting from construction operations. Remove equipment and tools. Leave the Site in a neat and orderly condition acceptable to Engineer.

END OF SECTION 31 23 03

SECTION 31 25 00 – EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the furnishing, installation and maintenance of soil erosion and sedimentation control (SESC) measures.
   1. Minimum SESC measures/Best Management Practices (BMP) are indicated on the Drawings. These measures are to be installed correctly before any grading or excavating begins on the Site. Contractor should add additional BMP's as required by their operations, such as temporary stock piles, equipment storage etc.
   2. Stage Construction and stabilization activities to minimize the amount of disturbed area at any one time.
   3. Remove sediment caused by erosion from storm water before it leaves the Site or enters waters of the state.
   4. Place soil piles away from drainage courses. Soil piles must be protected from precipitation and wind with non-erosive covers or other BMP's.
   5. Provide anti-tracking areas for haul roads and equipment. Sweep streets, parking areas regularly as needed.
   6. Dust control must be implemented on all sites exposed to wind erosion.
   7. Keep copies of permits and inspections on Site at all times.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. Soil erosion and sedimentation control rules and guidelines of:
      a. State of Michigan R323.2190 National Permit for stormwater discharge from Construction (Michigan's "Permit by Rule").
      b. Michigan Natural Resources and Environmental Protection Act, Part 31 of Act 451 of 1994 Soil Erosion and Sedimentation Control (Water Resources Protection Act).
      c. Part 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act (Soil Erosion and Sedimentation Control (SESC).
      d. EGLE Nonpoint Source Best Management Practices Manual.
      e. Soil erosion and sedimentation control rules and guidelines of:
         1) Wayne County
   2. ASTM Standards:
      a. A974 – Standard Specification for Welded Wire Fabric Gabions and Gabion Mattresses (Metallic-Coated or Polyvinyl Chloride (PVC) Coated).
      b. C33/C33M – Standard Specification for Concrete Aggregates.
      c. D4491 – Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
      d. D4751 -Standard Test Method for Determining Apparent Opening Size of a Geotextile.
      e. D4992 – Standard Practice for Evaluation of Rock to be Used for Erosion Control.
      f. D5313 – Standard Test Method for the Evaluation of Durability of Rock for Erosion Control Under Wetting and Drying Conditions.
      g. D6092 – Standard Practice for Specifying Standard Sizes of Stone For Erosion Control.
      h. D6459 – Standard Test Method for Determination of Erosion Control Blanket (ECB) Performance in Protecting Hillslopes from Rainfall-Induced Erosion.
      i. D6461, D6462 – Standard Practice for Silt Fence Materials and Installation.
      j. D6599 – Practice for Construction of Live Fascines on Slopes.
      k. D6711 – Practice for Specifying Rock to Fill gabions, Revet Mattresses, and gabion Mattresses.

1.4 SUBMITTAL

A. Action Submittals (Manufacturers information):
   1. Inlet Protection.
   2. Seed mixtures.
   3. Tacking Agents.
   4. Fertilizer.

B. Informational Submittals:
   1. Name and certification number of certified storm water operator that will be responsible for Site inspections.
   2. Sequence of Construction in sufficient detail as requested by Engineer.

1.5 QUALITY ASSURANCE

A. Performance Standard:
   1. Compliance with the Soil Erosion Control Permit (Part 91) and the Michigan Permit by Rule. The SESC measures indicated on the Drawings and specified here in are a minimum requirement. If more SESC measures are required to comply with the permit, notify the Engineer responsible for preparation of the SESC plan for plan amendment. Additional SESC measures required due to the Contractor's operations will not be considered for additional payment.

B. SESC Preconstruction Meeting:
   1. Conduct a field evaluation of the Site with the Engineer, Certified Storm Water Operator, the Local Enforcing Agent, and the Contractor's Superintendent after all initial SESC measures are installed and prior to any clearing, grading or excavation work.
   2. This meeting shall be scheduled and organized by the Contractor.
   3. Review the installed SESC measures by walking the Site and confirm compliance to the Permit and the approved SESC Plan.
   4. Review the location for display of the permit.
   5. Review location for SESC inspection log.

C. Stop Work Order:
   1. Owner reserves the right to issue a Stop Work Order if soil erosion and sedimentation controls are not properly installed or maintained.
   2. Work performed under a Stop Work Order will not be considered for payment.
   3. Costs resulting from delay due to issuance of a Stop Work Order shall be the responsibility of Contractor.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver materials in original, unbroken, brand marked containers or wrapping as applicable.

B. Handle and store materials in a manner which will prevent deterioration, damage, contamination with foreign matter, damage by weather or elements, and in accordance with manufacturer's directions.

C. Reject damaged, deteriorated or contaminated material and immediately remove from the Site. Replace rejected materials with new materials at no additional cost to Owner.

PART 2 - PRODUCTS

2.1 SOIL EROSION AND SEDIMENTATION CONTROL MATERIALS

A. Stabilized Construction Entrance:
   1. Stabilize a pad of clean crushed stone located at points where traffic will be accessing a construction site. Minimize construction access points to locations as indicated on the Drawings.
   2. Stone Size – Use ASTM C33, size No. 2 (2-1/2-inch to 1-1/2-inch) or 3 (2 inch to 1 inch). Use clean crushed angular stone. Crushed concrete of similar size may be substituted, but will require more frequent upgrading and maintenance.
   3. Place on woven geotextile fabric if underlying soils are soft. TerraTex GS, or equal.
   4. Thickness: Not less than 6 inches.

5. Width: Not less than full width of points of ingress or egress or a minimum of 20 feet.
6. Length: 50 feet minimum where the soils are course grained (sands or gravels) or 100 feet minimum where soils are fine grained (clays or silts), except where the traveled length is less than 50-feet or 100 feet respectively. These lengths may be increased where field conditions dictate. Stormwater from up-slope areas shall be diverted away from the stabilized pad where the slope of the access road exceeds 5%, a stabilized base of Hot Mix Asphalt Base Course.

B. Track Out Control:
1. Mats specifically designed and manufactured for the purpose of removing sediment from construction vehicles.
2. Must meet size requirements indicated on the Drawing.
3. Approved manufactures:
   a. FODS Trackout Control Mat 1x7T.
   b. Rumble Grate by Grizzley or ASP Enterprises.
   c. Approved equal.

C. Temporary Vegetation:

Seed Type	Lower Peninsula (south of US10)*	Lower Peninsula (north of US10)*	Upper Peninsula*	Seeding Rate
Oats, Barley	4/1 to 9/15	4/15 to 8/1	5/1 to 8/1	2 lbs/1,000 sft
Annual Rye	8/1 to 10/15	8/1 to 10/10	8/1 to 11/1	3 lbs/1,000 sft
Wheat	9/20 to 10/15	9/10 to 10/10	9/10 to 10/1	3 lbs/1,000 sft
Buckwheat	6/1 to 7/15	6/1 to 7/15	6/15 to 7/15	2 lbs/1,000 sft
Perennial Ryegrass	8/1 to 10/15	8/1 to 10/1	8/1 to 10/1	1 lbs/1,000 sft
*Seasonal Limitation Dates				

D. Permanent Vegetative Cover:
1. Grade as needed and feasible to permit the use of conventional equipment for seedbed preparation, seeding, mulch application, and mulch anchoring.
2. Immediately prior to seeding and topsoil application, the subsoil shall be evaluated for compaction.
3. Topsoil should be handled only when it is dry enough to work without damaging the soil structure. A uniform application to a depth of 4 inches (unsettled) is required on all sites. Topsoil shall be amended with organic matter, as needed, in accordance with the Standard for Topsoiling.

E. Mulch Blanket:
1. 4H:1V: Straw; North American Green S-75; LANDLOK S1; or equal
2. 3H:1V: Straw; North American Green S-150; LANDLOK S2; or equal.
3. 2H;1V: Straw and Coconut: North American Green SC-150; North American Green P-300, LANDLOK SC2; or equal.
4. 1.5H:1V: Coconut: North American Green C-125; LANDLOK C2; or equal.
5. Anchoring Staples or Pins:
6. Hardwood stakes at least 6 inches long; or
7. North American Green Bio-Stake blanket pins at least 6 inches long;
8. Steel anchoring pins are not allowed without written permission of the Engineer.

F. Hydro-Mulch:
1. Biodegradable, Hydraulic Mulch (HM) composed of 100% recycled cellulose fibers and a tackifier.
2. Terra-Mulch Cellulose with Tacking Agent 3.

G. Tacking Agents:
1. Materials: Polyacrylamide, acrylamide copolymer, hydro-colloid polymers, marker dye.
2. pH Range: 7.0 ±0.2.
3. Surface Tension: 73.9 dynes/cm, based on simulated field application after 5 minutes of mechanical agitation.
4. Viscosity: 102 CPS ±2, Saybolt value, based on 30 pounds per 1,000 gallons of water and 197 CPS ±2, Saybolt value, based on 60 pounds per 1,000 gallons of water, based on simulated field application after 5 minutes of mechanical agitation.
5. University tested to reduce erosion 68.6% and reduce water runoff 21.7% on a 45% slope without having to cure (dry out), effective immediately after hydro-seeding application.
6. Terra-Mulch Tacking Agent 3 by Profile Products LLC.

H. Silt Guard:
   1. Above Ground Filters:
      a. Frame and Filter Assembly: Silt Saver, Inc.; or equal.
      b. Nonwoven polypropylene filter with needle punched holes.
      c. High density polyethylene frame.
      d. 60-inch frame, high flow filter.
      e. Filter Material: 120 gpm/sft (min).
      f. Apparent Opening Size (AOS): 40 US Std. Sieve.
      g. Tensile Strength (ASTM D4632): 410/300 (min).
   2. Inlet Protection (Catch Basins):
      a. Siltsak; by ACF Environmental, Inlet Pro Sediment Bag High Flow; by Hanes Geo Components; DANDY BAG by Dandy Products Inc, or equal.
      b. Geotextile fabric silt sump.
      c. Grab tensile strength: 281x170 pounds in accordance with ASTM D4632 (min).
      d. 38 gallons per minute per square foot (GPM/SF), water flow rate in accordance with ASTM D4491 (min).
      e. Apparent Opening Size (AOS): 40 US Sieve.
      f. Manufactured to meet size of inlet.

PART 3 - EXECUTION

3.1 GENERAL

A. Standards:
   1. Achieve Effective Erosion Control to prevent erosion of Site slopes and ditches.
   2. Achieve effective control of sedimentation to prevent any offsite discharge or tracking of Site soils.
   3. Maintain soil erosion and sedimentation controls until the Site is stable. Definition of stable site is final concrete and/or asphalt paving is complete, and all turf areas have 80% growth.
   4. Do not remove temporary soil erosion and sedimentation control measures until Site is determined to be stable by the Engineer.
   5. Sweep streets weekly, or more frequently if required, or directed by Engineer.

3.2 DUST CONTROL

A. Prevent blowing and movement of dust from exposed soil surfaces, prevent on Site and off Site damage and health hazards and improve traffic safety:
   1. The following methods should be considered for controlling dust.
      a. Mulches.
      b. Temporary Vegetative Cover.
      c. Spray-on Adhesives: Keep traffic off these areas.

3.3 CONSTRUCTION ENTRANCE DRIVE

A. Employ water truck and street sweeper as necessary to keep sediment off of on Site and off Site roadways. The entrance must be maintained in a condition which will prevent tracking or flowing of sediment onto roadways. This may require periodic top dressing with additional stone or additional length as conditions demand and repair and/or cleanout of any measures used to trap sediment. All sediment spilled, dropped, washed, or tracked onto roadways (public or private) or other impervious surfaces must be removed immediately.

B. Where accumulation of sediment is inadequately cleaned or removed by conventional methods, a power broom or street sweeper will be required to clean paved or impervious surfaces. All other access points which are not stabilized must be blocked off.

3.4 INLET PROTECTION

A. Install on existing inlets prior to any grading or excavation. Install on new inlets as soon after installation as practical.

B. Inspect frequently, especially after any rain event. Maintain repair, and replace promptly, as needed.

C. Remove barrier only when the area draining toward the inlet has been stabilized.

3.5 SOIL ROUGHENING

A. On all slopes 1:3 or steeper, grade the slope with a dozer taking a vertical path so that the track marks on the slope create a horizontal roughened grooved condition to help prevent erosion of the slope.

3.6 TEMPORARY VEGETATIVE COVER

A. General:
   1. Provide temporary seed if permanent measures will not be placed within 15 days of initial disturbance and area will not undergo further earth change within 15 days of initial disturbance.
   2. Seed: Apply uniformly at a minimum rate of 3 to 5 pounds per 1,000 square feet.
   3. Mulch:
      a. Mulching is required on all seeding. Mulch will protect against erosion before grass is established and will promote faster and earlier establishment. The existence of vegetation sufficient to control soil erosion must be deemed compliance with this mulching requirement.
      b. Straw: Unrotted small grain straw, free of seeds
      c. Application: Spread mulch uniformly by hand or mechanically so that at least 85% of the soil surface is covered. For uniform distribution of hand-spread mulch 75 to 100 pounds per 1,000 square feet. Anchoring must be accomplished immediately after placement to minimize loss by wind or water. This may be done by one of the following methods, depending upon the size of the area, steepness of slopes.
         1) Peg and Twine. Drive 8 to 10 inch wooden pegs to within 2 to 3 inches of the soil surface every 4 feet in all directions. Stakes may be driven before or after applying mulch. Secure mulch to soil surface by stretching twine between pegs in a crisscross and a square pattern. Secure twine around each peg with two or more round turns.
         2) Mulch Nettings: Staple paper, jute, cotton, or plastic nettings to the soil surface. Use a degradable netting in areas to be mowed.
         3) Crimper (mulch anchoring coulter tool): A tractor-drawn implement, somewhat like a disc harrow, especially designed to push or cut some of the broadcast long fiber mulch 3 to 4 inches into the soil so as to anchor it and leave part standing upright. Straw mulch rate must be 3 tons per acre. No tackifying or adhesive agent is required.
         4) Liquid Mulch-Binders (May be used to anchor straw mulch):
            a) Applications should be heavier at edges where wind may catch the mulch, in valleys, and at crests of banks. The remainder of the area should be uniform in appearance.
            b) Organic and Vegetable Based Binders: Naturally occurring, powder-based, hydrophilic materials when mixed with water formulates a gel and when applied to mulch under satisfactory curing conditions will form membraned networks of insoluble polymers. The vegetable gel must be physiologically harmless and not result in a phytotoxic effect or impede growth of turf grass. Use at rates and weather conditions as recommended by the manufacturer to anchor mulch materials.

3.7 PERMANENT VEGETATIVE COVER

A. General:
   1. Seed all disturbed areas within 5 days of final grading.
   2. Apply uniformly at a minimum rate of 3 to 5 pounds per 1,000 square feet.
   3. Mulch as indicated on the Drawings or as needed to effectively control soil erosion.

3.8 MULCH BLANKET

A. Direction of installation, staple patterns and other requirements in accordance with Manufacturer's directions, and Project Drawing detail sheets.

B. Location: Where indicated on the Drawings or as specified.

3.9 HYDRO MULCH

A. Apply in accordance with manufacturer, Application Rate: 2,000 pounds per acre.

3.10 TACKING AGENTS

A. Fiber Mulch Binding:
   1. Flat to 5:1 Slope: 20 pounds per acre.
      a. 4:1 to 3:1 Slope: 30 pounds per acre.
      b. 3:1 to 2:1 Slope: 40 pounds per acre.
      c. Greater than 2:1 Slope: 60 pounds per acre.
   2. Straw Mulch Binding: 30 pounds Tacking Agent III and 150 pounds cellulose fiber per 1,000 gallons of water per acre, or 50 pounds Tacking Agent III per 1,000 gallons of water per acre.

3.11 DEWATERING

A. If during construction excavated facilities need to be dewatered to facilitate or complete the construction process and the water pumped out of the excavated areas contain sediments, these sediments must be removed prior to discharging to receiving bodies of water. This standard does not address the removal of ground water through well points etc.

B. Pumping system must include adequate sized perforated riser pipes, stone filters and sediment pumping bags to achieve desired results. Place the suction hose from the pump inside the inner pipe to begin dewatering. Place the discharge hose in a stabilized area downslope of unstabilized areas to prevent erosion.

C. Sediment Tank / Silt Control Bags may be used when sediment laden water is pumped to trap and retain the sediment. A sediment tank or a silt control bag is to be used when excavations are deep, and space is limited and where direct discharge of sediment laden water to stream and storm drainage systems is to be avoided.
   1. Locate containers (tanks or bags) for ease of clean-out and disposal of the trapped sediment and to minimize interference with construction activities and pedestrian traffic. Do not place bags directly into receiving waters.
   2. Tank size: The following formula should be used in determining the storage volume of the tank: 1 cubic foot of storage for each gallon per minute of pump discharge capacity. Typical tank configuration is indicated on Standard Detail. Tanks may be connected in series to increase effectiveness.

3.12 BUILDING PROJECT CONSTRUCTION

A. During construction conform to the following general rules:
   1. Minimize the amount of earth disturbed at any one time.
   2. Establish a construction sequence which includes adequate erosion control.
   3. As much as practical, direct stormwater away from the construction area. Direct diverted stormwater to a stable on-Site area.
   4. Collect runoff from the Site in sediment basins, traps or through filters.
   5. Establish an inspection and maintenance schedule, paying special attention to the beginning of the various stages of construction.

3.13 AIRBORNE SEDIMENT

A. Dust Control:
   1. Use legal means necessary to control dust on and near the Work and on and near off Site borrow areas if such dust is caused by Contractor's operations during performance of the Work or if resulting from the condition of the Site when earthwork operations are suspended.
   2. Treat haul roads, delivery roads, temporary Site access roads and other surfaces as required to prevent dust from being a nuisance to the public, neighbors, and concurrent performance of other work on the Site, and as directed by Engineer.
   3. Periodically scrape and broom adjacent streets and paved areas to remove tracked dirt.

B. Wind Erosion:
   1. Erect and maintain barriers to prevent migration of windblown sediment offsite.
   2. Conduct operations in such a manner as to minimize the amount of Site area exposed to wind erosion.
   3. Be responsible for removal of windblown sediments deposited off Site, including costs for cleaning or repairs required due to sediment deposition and removal.

END OF SECTION 31 25 00

SECTION 32 93 54 – RAIN GARDENS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the furnishing of all materials and installation of rain gardens.

1.3 REFERENCES

A. Except as herein specified or as indicated on the Drawings, the work of this Section shall comply with the following:
   1. American Joint Committee on Horticultural Nomenclature (AJCHN): Standardized Plant Names.
   2. ANSI Z60.1 - American Standard for Nursery Stock.
   3. AASHTO M278 - Standard Specification for Class PS46 Polyvinyl Chloride (PVC) Pipe.
   4. ASTM:
      a. D422 - Standard Test Method for Particle-Size Analysis of Soils.
      b. D4972 - Standard Test Method for pH of Soils.
      c. D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
      d. F405 - Standard Specification for Corrugated Polyethylene (PE) Pipe and Fittings.
      e. [F449 - Subsurface Installation of Corrugated Thermoplastic Tubing for Agricultural Drainage or Water Table Control.]
      f. F667 - Standard Specification for Large Diameter Corrugated Polyethylene Pipe and Fittings.
   5. Test Methods for the Examination of Composting and Compost (TMECC):
      a. 4.11A - Electrometric pH Determinations for Compost, 1:5 Slurry pH
      b. 4.10-A - Electrical Conductivity for Compost, 1:5 Slurry Method, Mass Basis
      c. 5.07-A - Loss on Ignition Organic Matter Method
      d. TMECC 2.02-B - Sample Sieving for Aggregate Size Classification
   6. Standard Methods for the Examination of Water and Wastewater (SMEWW) 2540B: Total Solids Dried at 103 Degrees C to 105 Degrees C.

1.4 DEFINITIONS

A. Sharp Sand: Angular, not rounded, soil particles, 0.05 to 2 millimeters in diameter. Beach sand is not sharp sand.

B. B&B: Ball and burlap vegetation.

1.5 SUBMITTALS

A. Action Submittals: For Product Data, include Shipping List (packing slip) for plant material.

1.6 DELIVERY, STORAGE AND HANDLING

A. If seed cannot be sown immediately upon delivery, properly store it in a manner acceptable to the Engineer.

1.7 WARRANTY

A. Repair damage resulting from erosion.

B. Contractor and Engineer shall meet on-site at the end of the warranty period to confirm Site conditions.

C. At least 90% of the seeded area shall be vegetated with native species or cover crop species from the seed mixture by June 1 following dormant seeding, or within 60 days of spring seeding.

D. After 1 full growing season, at least 50% of the seeded native species shall be present as live plants, and coverage of native species shall be at least 20%.

E. After 2 full growing seasons, coverage of native species shall be at least 60%.

F. There shall be no single area of bare ground greater than 900 square feet (30 feet x 30 feet) after the first full growing season.

G. If these standards are not met, the Contractor shall be responsible for supplemental seeding in accordance with the specifications and with input from the Engineer, if necessary. Losses due to animal depredation, extremes in weather or precipitation, or lack of water control shall not be covered under this warranty.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Rain Garden Soil Mix:
1. Composed of 50 to 60% sharp sand, 20 to 30% topsoil, and 20 to 30% compost.
2. Uniform mix, free of stones, stumps, roots or other similar objects larger than 2 inches.
3. No other materials or substances that may be harmful to plant growth or prove a hindrance to the planting or maintenance operations shall be present in the rain garden soil mix, or dumped within the rain garden area.

B. Compost:
1. Well-composted, stable and weed-free organic material, free of deleterious substances.
2. Acidity: Between 5.5 and 8.5, in accordance with TMECC 4.11A.
3. Moisture Content: between 35 to 60%, wet weight basis, in accordance with SMEWW 2540B.
4. 98% passing through a 3/4-inch screen, in accordance with TMECC 2.02-B.
5. Organic matter content: between 30 to 60%, dry weight basis, in accordance with TMECC 5.07-A.
6. Soluble salt concentration: less than 10 dS/m (mmhos/cm), in accordance with TMECC 4.10-A.

C. Sand: Clean sharp sand, maximum size 3/8-inch, loss by washing (% passing 200 sieve) less than 10%.

D. Topsoil:
1. Sandy loam, loamy sand or loam texture according to USDA textural triangle with less than 5% clay content.
2. Free of stones or other materials 2 inches or larger in diameter in any direction and free of extraneous materials harmful to plant growth.
3. pH range of 5.5 to 7.5.

E. Seed:
1. No noxious weed seeds.
2. Seed test within 1 year to verify germination rate.
3. Adjust seed quantities to provide PLS.
4. All seed mixtures shall be applied with 10 lb/acre annual rye and 30 lb/acre seed oats as a cover crop. Perennial rye or wheat may not be used as a cover crop.

F. Seed Origin:
1. Local genotypes are preferred.

G. Seed Mixture:
1. Mixture composed of certified seed of the following species and proportions by weight:
   a. Swale Seed Mix (see attached)
2. Furnish seed in durable bags, each marked by the Supplier of the blended mix with a tag giving name, lot number, net weight of contents, purity and germination.

H. Approved Suppliers
   1. Stantec Native Plant Nursery
      www.stantec.com
      128 Sunset Dr, Walkerton, IN 46574
      (574) 586-2412

I. Mulch:
   1. Shredded bark from mixed hardwood species.
   2. 60% or particles shall range between 1 and 3 inches in length; remaining 40% shall be less than 1-inch in length.
   3. Width of Particles: 1-1/2-inch maximum.
   4. Well aged (at least 6 months old).
   5. Uniform texture free of sawdust, foreign materials, and artificially introduced chemical compounds that would be detrimental to plant or animal life.
   6. Suitability of material and size shall be determined by Engineer using visual inspection.

J. Edging:
   1. Aluminum:
      a. Manufacturer: Permaloc Corporation, Holland, Michigan; or equal.
      b. 1/8-inch x 4-inch mill finish.
      c. 16 feet long sections.
      d. 4-line stakes, 1 splicer stake per section.
      e. Line Stakes: 12-1/2 inches long.
      f. Splicer Stakes: 14 inches long.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Excavation and Backfilling:
   1. Excavate rain garden surfaces as indicated on the grading and landscape Drawings, using light earth-moving equipment or by excavating from the perimeter of the excavated area. Appropriate equipment includes wide track or marsh track equipment, or light equipment with turf-type tires. No heavy equipment will be allowed on the bottom of the rain garden.
   2. Remove excavated materials from the rain garden Site.

B. Backfill:
   1. Backfill with rain garden soil mix, avoiding compaction with heavy equipment.
   2. Protect backfilled rain garden from compaction with 4-foot high snow fencing along perimeter boundary. If soil compaction occurs, remove and replace the soil at no additional cost to the Owner.

C. Seedbed Preparation:
   1. After the areas to be seeded have been brought to the required grade as specified in Division 31 Section “Grading,” bring soil to a friable condition by disking, harrowing, or otherwise loosening and mixing to a depth of 3 inches to 4 inches. Thoroughly break all soil clods greater than 3 inches in diameter.
   2. If the prepared seedbed is not satisfactorily seeded and mulched before the friable condition is lost through compaction or crusting, repeat the seedbed preparation prior to seeding or reseeding.

3.2 SEEDING OPERATIONS

A. Timing:
   1. Spring Seeding: Between April 15 and June 15.
   2. Dormant Seeding: Mid-October through February, when there is no snow on the ground. If ground is frozen, seeding shall be accomplished with a no-till drill.
   3. Seed immediately after preparation of bed.
   4. Perform seeding operations when the soil is dry and winds do not exceed 5 miles per hour velocity.
   5. Do not seed during stormy weather when excessive precipitation may result in washing seed away from its intended location.

B. Seeding Rates and Techniques:
   1. Rate and Seeding Methods: At Suppliers' recommendations.

3.3 MAINTENANCE

A. Weed Control:
   1. Mow to manage weed growth if abundant annual weeds are present within the first and second growing seasons after sowing native seeds.
   2. When vegetation reaches a height of 10 to 12 inches, mow to a height of approximately 6 inches.
   3. Mow before the flowering stage of the target weed species.
   4. Discontinue mowing at the end of the growing season (September).
   5. Spot treat aggressive weeds, such as Canada thistle, spotted knapweed, purple loosestrife, and common reed, with appropriate herbicides, following the Manufacturer's guidelines.

B. Inspection and Response:
   1. Contractor shall repair any damage resulting from erosion.

END OF SECTION 32 93 54

Appendix 1

Pre-Demolition/Renovation Hazardous Materials Survey

of

5959 Woodward Avenue,
Detroit, MI 48202

Prepared for
Wayne State University
5454 Cass Avenue
Detroit, MI 48202

Prepared by

Testing Engineers and Consultants, Inc. (TEC)
1343 Rochester Road, PO Box 249
Troy, Michigan 48099-0249

TEC Project Number: 60545-14

November 2, 2023

Jacob Pallach
Asbestos Building Inspector

Madison Konrad
Group Manager
Industrial Hygiene Services

TABLE OF CONTENTS

TABLES

LIST OF APPENDICES

1 EXECUTIVE SUMMARY

Testing Engineers and Consultants, Inc. (TEC) was retained by Wayne State University, to conduct an assessment for asbestos-containing materials (ACM)/Hazardous Materials (Haz-Mat) /Lead Containing Paint located at 5959 Woodward Avenue, Detroit, MI 48202.

Asbestos Containing Materials (ACMs)

A total of **111** sample layers were collected from **40** suspected asbestos-containing homogeneous materials identified during the assessment. The samples were analyzed by polarized light microscopy (PLM). A material is considered by the U.S. Environmental `Protection Agency (EPA), the U.S. Occupational Safety and Health Administration (OSHA) and the State of Michigan to be ACM if PLM results detect greater than one percent (>1%) asbestos.

Eight ACMs (>1% asbestos) were identified through laboratory analysis during this investigation. Bold Depicts Positive Layer.

- **Interior Door Window Glaze (Grey)** – **FS 2**
- **9"x9" Floor Tile (Tan)** w/ Adhesive (Yellow) &Adhesive (Black) – **FS 3, 4, 6-9, 11-14, 16, 17, 19, 20-22, 24**
- **4" Straight Pipe Insulation (Grey) – FS 4, Attic**
- **Interior Window Glaze (Grey) – FS 5, 7, 8, 11, 13, 19, 23-25, 27-29**
- **9"x9" Floor Tile (Dark Brown)** w/ Adhesive (Yellow) &Adhesive (Black) – **FS 5, 18, 23, 25-29**
- **Light Heat Shield (Grey) – FS 13, 19, 20**
- **Exterior Door Frame Caulk (Grey) – FS 1**
- **Exterior Sealant (Grey) – FS 1**

The following materials were not sampled and are assumed to be ACM:

- Roofing Materials – FS 1
- Fire Doors – FS 28

A summary of the laboratory results for the suspect ACM samples collected within the subject building are provided in Table 1, while the analytical laboratory results/chain of custody are included as Appendix D and Appendix E. Site diagrams identifying sample locations (Appendix G) are attached for review.

A lead paint assessment was conducted using both Paint Chip analysis and XRF Readings, see Appendix H.

2 GENERAL BUILDING AND SURVEY INFORMATION

2.1 BUILDING INFORMATION

The subject building is located at 5959 Woodward Avenue, Detroit, MI 48202.

2.2 INSPECTION INFORMATION

2.2.1 GENERAL BUILDING INFORMATION

Subject Property:	**5959 Woodward Avenue, Detroit, MI, 48202**
Construction Date:	**Unknown**
Number of Floors:	**1 floor plus attic**
Square Footage	**6,060 SF**
Construction Type:	**Brick and Mortar construction w/ a poured concrete foundation and a flat roof.**
Building Occupant(s)	**Unoccupied**

2.2.2 Inspection Information

Name of Inspector(s): Jacob Pallach

Signature: Jacob Pallach

State of Michigan Inspector No. A55388

Date(s) of Inspection: **October 27, 2023**

Report Reviewed By: **Madison. Konrad**

Signature: Madison Konrad

3 FINDINGS

3.1 ASBESTOS RESULTS

A total of **111** samples were collected from **40** suspect homogenous materials during the comprehensive asbestos survey. Twenty-Four ACMs were identified through laboratory analysis.

The "Report of Bulk Sample Analysis for Asbestos," the "Asbestos Bulk Sample Log," Photographs, and Asbestos Glossary are included in the Appendices. Table 1 attached to this report lists the suspect ACMs observed throughout the building that were sampled, along with the results of the inspection and laboratory analysis.

Table 1 provides descriptions of the materials, their general locations, condition, and friability, EPA National Emission Standard for Hazardous Air Pollutants (NESHAP) category, OSHA abatement classification and estimated quantity.

3.1.1 INACCESSIBLE AREAS / AREAS NOT INCLUDED

- TEC did not sample roofing materials due to excessive elevation; in order to sample the roofing materials, a lift would have to be provided.
- The majority of the building was carpeted, TEC made their best effort to check underneath the carpet for suspect materials. Multiple flooring and adhesives were sampled. If during demolition, new materials are identified, these materials will need to be tested for asbestos content or assumed to be asbestos-containing.
- Approximately half of the building had glue-on ceiling tile on the ceiling, TEC utilized wall openings and the attic hatch to look above the ceiling. If during demolition, new materials are identified, these materials will need to be tested for asbestos-content or assumed to be asbestos-containing.

3.1.2 NON-SUSPECT MATERIALS

The following materials were observed but are considered 'non-suspect' ACM due to their composition (fiberglass, rubber, etc.) and were not sampled.

- Metal, plastic, and glass building components
- Rubber/foam pipe insulation
- Fiberglass roll/bat insulation
- Ceramic bathroom fixtures (sink, toilet, tub, etc.)

4 CONCLUSIONS & RECOMMENDATIONS

4.1 CONCLUSIONS

8 - ACMs were found within and on the subject property.

2 - Assumed ACMs were found within the subject property.

15 - Assumed HAZMATS as presented on Table 2-Suspected HAZMATs Inventory Checklist

4.1.1 ASSUMPTIONS/OBSERVATIONS

The following assumptions were used to develop TEC's sampling strategy:

- Most of the piping throughout the building was either fiberglass or uninsulated. However, TEC found some asbestos-containing straight pipe insulation. TEC found the insulation behind a plaster wall. TEC is assuming that at one point the building contained more of the asbestos-containing straight pipe insulation and it was removed everywhere except in this location because of the inaccessibility to remove it. During demolition/renovation if more of this asbestos-containing pipe insulation is found it should be removed by an asbestos abatement contractor.
- TEC observed multiple roof drain conductors which appeared to be non-suspect for asbestos; but due to elevation, TEC was unable to take a closer look to confirm. If new materials are discovered during demolition/renovation, these materials should be tested for asbestos content or assumed to be asbestos-containing and removed by an abatement contractor.

4.2 RECOMMENDATIONS

ASBESTOS CONTAINING MATERIALS (ACM)

The ACMs identified in the subject buildings were generally found to be in good condition with some areas of deterioration throughout.

Prior to demolition/renovation, TEC recommends that that the identified ACMs (assumed and verified by sampling), as well as the assumed hazardous materials, be removed prior to demolition. Category I Non-Friable (such as the assumed roofing material) ACM may often be left in place during renovation/demolition if not made friable by cutting, grinding, or sanding. If left in place, these materials cannot be recycled or used as clean fill. Any areas that were noted as being inaccessible during this assessment or any concealed areas, such as behind walls, where suspect ACMs could be discovered, will require a survey for ACM. TEC has provided the regulatory abatement methods as defined by OSHA in Appendix C for each class of work applied to the materials noted in this report. These procedures can be performed by the renovation/demolition contractor if they are licensed to perform abatement in Michigan.

TABLES

TABLE 1.1 – SUSPECT ACMS – SAMPLED (BOLD DEPICTS A POSITIVE RESULT)

Site: 5959 Woodward Avenue, Detroit, MI 48202 **Survey Date(s): 10/27/23**

Material Number & Sample Number	Material Description	Material Location	F/NF[1]	Cond.[2]	% Asbestos & type[3]	EPA NESHAP Category [1, 4]	OSHA Class Designation[5]	Estimated Quantity
1A-B	Rubber Floor Adhesive (Yellow)	FS 2	NF	Good	NAD	NA	NA	NA
2A-B	Covebase (Blue) w/ Adhesive	FS 2-9, 11, 15, 18, 21, 22, 24-27, 29	NF	Good	NAD/ NAD	NA	NA	NA
3A	Fiberglass Insulation (Pink)	Throughout	NF	Good	NAD	NA	NA	NA
4A-B	Interior Caulk (White)	FS 2	NF	Good	NAD	NA	NA	NA
5A-B	**Interior Door Window Glaze (Grey)**	**FS 2**	**NF**	**Good**	**1.25% Ch (PT)**	**Cat II NF**	**Class II**	**24 LF**
6A-B	Ceiling Tile (White – Pinhole) w/ Glue Pod (Brown) & Caulk (Black)	FS 2-9, 11-17, 19, 20	F	Good	NAD/ NAD/ NAD	NA	NA	NA
7A-B	Carpet Adhesive (Yellow)	FS 3-9, 11, 18, 21-27, 29	NF	Good	NAD	NA	NA	NA
8A-B	**9"x9" Floor Tile (Tan)** w/ Adhesive (Black) & Adhesive (Yellow)	**FS 3, 4, 6-9, 11-14, 16, 17, 19, 20-22, 24**	**NF**	**Good**	**10% Ch/** NAD/ NAD	**Cat II NF**	**Class II**	**2,550 SF**
9A-B	Drywall (White) w/ Joint Compound	FS 2-13, 15-18, 21, 22, 24, 26-29	F	Good	NAD/ NAD	NA	NA	NA
10A-E	Plaster (Grey) w/ Skim Coat	FS 3,4, 7, 8, 9, 11, 12, 13	NF	Good	NAD/ NAD	NA	NA	NA
11A-C	**4" Stright Pipe Insulation**	**FS 4, Attic**	**F**	**Good**	**50% Ch**	**RACM**	**Class I**	**14 LF**
12A-B	Sheet Rock (White)	FS 2-9, 11-17, 19, 20	NF	Good	NAD	NA	NA	NA
13A-B	Drywall w/ Adhesive	FS 3, 5, 6	NF	Good	NAD/ NAD	NA	NA	NA
14A-B	**Interior Window Glaze (Grey)**	**FS 5, 7, 8, 11, 13, 19, 23-25, 27-29**	**NF**	**Good**	**1.5% Ch (PT)**	**Cat II NF**	**Class II**	**700 LF**
15A-B	Windowsill Morter (Grey)	FS 5, 7, 8, 11, 13, 23, 24	NF	Good	NAD	NA	NA	NA

1 **F** = Friable ; **NF** = Non-friable
2 **Cond.** = Condition of Materials; Either good, fair or poor
3 **NAD** = No Asbestos Detected, **Ch** = Chrysotile, **Am** = Amosite, **Tr** = Tremolite; **Cr** = Crocidolite; **Ver** = Vermiculite; **PT** = Point Count Analysis; **TEM =** Transmission Electron Microscopy
4 **NESHAP** Category - Regulated ACM (RACM), **Cat I NF**=Category I Non-Friable ACM, **Cat II NF**= Category II Non-Friable ACM
NA = Not Applicable
5 **OSHA/EPA Class Definitions:**
Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.
Class II asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
Class III asbestos work means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.
Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Material Number & Sample Number	Material Description	Material Location	F/NF[1]	Cond.[2]	% Asbestos & type[3]	EPA NESHAP Category [1, 4]	OSHA Class Designation[5]	Estimated Quantity
16A-B	**9"x9" Floor Tile (Dark Brown)** w/ Adhesive (Black) & Adhesive (Yellow)	**FS 5, 18, 23, 25-29**	**NF**	**Good**	**10% Ch/** NAD/ NAD	**Cat II NF**	**Class II**	**2,850 SF**
17A-B	Interior Caulk (Grey)	FS 8	NF	Good	NAD	NA	NA	NA
18A-B	Door Frame Sealant (White)	FS 10	NF	Good	NAD	NA	NA	NA
19A-B	Covebase (Black) w/ Adhesive	FS 12	NF	Good	NAD/ NAD	NA	NA	NA
20A-B	Covebase (White) w/ Adhesive	FS 13, 34, 36	NF	Good	NAD/ NAD	NA	NA	NA
21A-B	CMU (Grey) w/ Mortar	Throughout	NF	Good	NAD/ NAD	NA	NA	NA
22A-B	Leveling Compound (White) w/ Carpet Adhesive (Yellow) & Adhesive (Black)	FS 15	NF	Good	NAD/ NAD/ NAD	NA	NA	NA
23A-B	Concrete Foundation (Grey)	Throughout	NF	Good	NAD	NA	NA	NA
24 A-B	**Light Heat Shield (Grey)**	**FS 13, 19, 20**	**F**	**Good**	**50% Ch**	**RACM**	**Class I**	**8 SF**
25 A-B	Vibration Dampener (Black)	FS 18, 27	NF	Good	NAD	NA	NA	NA
26 A-B	Duct Sealant (Black)	FS 18	NF	Good	NAD	NA	NA	NA
27A-B	Ceiling Tile (White-Dots)	FS 23	F	Good	NAD	NA	NA	NA
28A-B	Cement Patch (Grey)	FS 24, 28	NF	Good	NAD	NA	NA	NA
29A-B	Covebase (Brown) W/ Adhesive	FS 28	NF	Good	NAD/ NAD	NA	NA	NA
30A	Fiberglass Straight Pipe Insulation	Throughout	NF	Good	NAD	NA	NA	NA
31 A-B	Ramp Tread (Black) w/ Adhesive	FS 29	NF	Good	NAD/ NAD	NA	NA	NA

1 **F** = Friable ; **NF** = Non-friable
2 **Cond.** = Condition of Materials; Either good, fair or poor
3 **NAD** = No Asbestos Detected, **Ch** = Chrysotile, **Am** = Amosite, **Tr** = Tremolite; **Cr** = Crocidolite; **Ver** = Vermiculite; **PT** = Point Count Analysis; **TEM =** Transmission Electron Microscopy
4 **NESHAP** Category - Regulated ACM (RACM), **Cat I NF**=Category I Non-Friable ACM, **Cat II NF**= Category II Non-Friable ACM
NA = Not Applicable
5 **OSHA/EPA Class Definitions:**
Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.
Class II asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
Class III asbestos work means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.
Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Material Number & Sample Number	Material Description	Material Location	F/NF[1]	Cond.[2]	% Asbestos & type[3]	EPA NESHAP Category [1, 4]	OSHA Class Designation[5]	Estimated Quantity
32 A-B	Construction Adhesive (Tan)	FS 29	NF	Good	NAD	NA	NA	NA
33A	Fiberglass Duct Insulation (Yellow)	Throughout	F	Good	NAD	NA	NA	NA
34A-B	Exterior Door Frame Caulk (Grey)	FS 1	NF	Good	NAD	NA	NA	NA
35A-B	Exterior Window Caulk (Grey)	FS 1	NF	Good	NAD	NA	NA	NA
36A-B	**Exterior Window Glaze (Grey)**	**FS 1**	**NF**	**Good**	**1.5% Ch (PT)**	**Cat II NF**	**Class II**	**700 LF**
37A-B	Exterior Window Sealant (Grey)	FS 1	NF	Good	NAD	NA	NA	NA
38A-B	**Exterior Sealant (Grey)**	**FS 1**	**NF**	**Good**	**5% Ch**	**Cat II NF**	**Class II**	**105 LF**
39A-B	Exterior Brick (Orange) & Mortar	FS 1	NF	Good	NAD/ NAD	NA	NA	NA
40 A-B	Exterior Door Frame Sealant (White)	FS 1	NF	Good	NAD	NA	NA	NA
ASSUMED	**Roofing Materials**	**FS 1**	**NF**	**Good**	**Assumed**	**Cat I NF**	**Class II**	**6,060 SF**
ASSUMED	**Fire Doors**	**FS 28**	**NF**	**Good**	**Assumed**	**Cat II NF**	**Class II**	**1 Door**

1 **F** = Friable ; **NF** = Non-friable
2 **Cond.** = Condition of Materials; Either good, fair or poor
3 **NAD** = No Asbestos Detected, **Ch** = Chrysotile, **Am** = Amosite, **Tr** = Tremolite; **Cr** = Crocidolite; **Ver** = Vermiculite; **PT** = Point Count Analysis; **TEM =** Transmission Electron Microscopy
4 **NESHAP** Category - Regulated ACM (RACM), **Cat I NF**=Category I Non-Friable ACM, **Cat II NF**= Category II Non-Friable ACM
NA = Not Applicable
5 **OSHA/EPA Class Definitions:**
Class I asbestos work means activities involving the removal of TSI and surfacing ACM and PACM.
Class II asbestos work means activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.
Class III asbestos work means repair and maintenance operations, where "ACM", including TSI and surfacing ACM and PACM, is likely to be disturbed.
Class IV asbestos work means maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

Table 2.1: Suspected HAZMATS Inventory Checklist

Address: ***5959 Woodward, Detroit, MI 48202- Total Quantities***			
Inspection Item	**Constituent of Concern**	**Size/Quantity**	**Notes:**
CFL's	Mercury	16	Throughout
Exit Signs	Mercury / H-3	3	Throughout
Fire Extinguishers	Potassium Carbonate, Potassium Acetate-based, wet chemical	2	Throughout
Light Ballasts	PCBs	115	Throughout
Batteries	Lead	1	FS 3
Misc. Elevator Equipment	Possible hydraulic fluid	6 motors	Throughout
4 ft Fluorescent bulbs	Mercury	229	Throughout
Oils	Oil	Drums: 1 Jugs: 9 Jugs	Throughout
Propane Tank	Propane	1 tank	-
Air Conditioners	CFC / HCFC	1	FS 8
Thermostats	Mercury	2	FS 9
Drinking Fountian	Refrigerant/Freon	1	FS 15
Projection Lights and associate Equipment	PCB	2	FS 21
Paint Cans (Various Sizes)	Lead	42	Throughout
Miscellaneous Items (Solvents, Cleaners, paint cans, etc.)	Varied	13	Throughout

APPENDIX A

SCOPE, METHODS, AND REGULATORY GUIDELINES

A1 INTRODUCTION

A1.1 SCOPE OF SERVICES

The scope of services for this project consisted of conducting a comprehensive ACM and hazardous material assessment, sampling, and analysis of accessible and exposed interior areas within the subject facility.

The pre-renovation assessment included areas within the structure where building materials could potentially be impacted during the upcoming renovation or demolition. The pre-renovation/demolition assessment included a visual inspection of the subject area(s), sample collection, PLM sample analysis, quantification of ACMs and suspected hazardous materials, and report preparation and review.

A1.2 PURPOSE

The purpose of this survey was to provide general information for the subject structure regarding the presence, condition, and quantity of accessible and/or exposed friable and non-friable, building materials that contain asbestos as well as substances that would require special handling and disposal prior to renovation.

A1.3 AUTHORIZATION

Authorization to perform this work was given by Wayne State University, as owner through the issuance of an executed purchase order.

A1.4 LIMITATIONS

The asbestos survey was intended to meet the requirements of the EPA NESHAP regulation for demolition or renovation. The survey included a thorough inspection of all areas of the building.

TEC performed sampling requiring demolition or destructive activities such as knocking holes in walls, dismantling of equipment or removal of protective coverings. Reasonable efforts to access suspect materials within known areas of restricted access (e.g., catwalks) were made; however, confined spaces or areas which may pose a health or safety risk to TEC personnel were not sampled. Sampling did not include suspect materials which could not be safely reached with available ladders/man-lifts. TEC did not sample any system which presented a hazard to the inspection team such as energized electrical systems, confined spaces, or structurally unsafe areas. This survey was conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the same locale. The results, findings, conclusions, and recommendations expressed in this report are based on conditions observed during our survey of the building.

Void spaces which were evaluated included locations of suspected pipe or HVAC chases, wall cavities where fireproofing or other ACM was suspected, above finished ceiling systems where ACM was likely to exist, within pipe trenches or within concealed locations. Although TEC tried to identify all areas of ACM, an exhaustive investigation of void spaces was not included in the scope of services for this project. Inaccessible is

defined as areas of the building that were locked, or where admittance was not possible. It also includes areas/materials that could not be tested (sampled) without destruction of the structure or a portion of the structure, and areas/materials that could not be safely reached by the inspector or inspection team. In the event that access to a portion of the building was not obtained (which otherwise would have been tested), such limitations specifically are identified in the Findings Section of this report.

The information contained in this report is relevant to the dates on which this survey was conducted and should not be relied upon to represent conditions at a later date. This report has been prepared on behalf of and exclusively for use by WSU, for specific application to their project as discussed. This report is not a bidding document. Contractors or consultants reviewing this report must draw their own conclusions regarding further investigation or remediation deemed necessary. TEC does not warrant the work of regulatory agencies, laboratories or other third parties supplying information which may have been used in the preparation of this report. No warranty, express or implied, is made.

The HAZMATs survey was visual only and did not include sampling of identified materials.

A1.4 WARRANTY

The field and laboratory results reported herein are considered sufficient in detail and scope to determine the presence of accessible and/or exposed suspect ACM/HAZMATs for the building structure. TEC warrants that the findings contained herein have been prepared in general accordance with accepted professional practices at the time of its preparation as applied by professionals in the community. Changes in the state of the art or in applicable regulations cannot be anticipated and have not been addressed in this report.

The survey and analytical methods have been used to provide the client with information regarding the presence of accessible and/or exposed suspect ACMs existing at the time of the inspection. Test results are valid only for the material(s) tested. There is a distinct possibility that conditions may exist which could not be identified within the scope of the study, or which were not apparent during the site visit. This assessment covered only those areas that were exposed and/or physically accessible to the Inspector. The study is also limited to the information available from the client at the time it was conducted.

A2 METHODOLOGY

Inspection and sampling procedures were performed in general accordance with the guidelines published by the EPA. The inspection and survey described below was performed by an EPA and Michigan accredited inspector.

A2.1 RECORD DOCUMENT REVIEW

Prior to conducting the visual inspection, TEC typically reviews documents provided by the client, including: drawings, floor plans, historical data, maintenance records, previous survey reports, laboratory reports, etc. for information regarding construction history and building materials.

Building layout drawings were provided by the client for review as a part of this Asbestos and HAZMAT Survey.

A2.2 VISUAL INSPECTION PROCEDURES

A2.2.1 Asbestos

An initial facility walkthrough was conducted to determine the presence of suspect asbestos-containing materials that were accessible and/or exposed within all areas scheduled for upcoming renovation activities.

Materials which were similar in color, texture, general appearance and which appear to have been installed at the same time were grouped in Homogeneous Sampling Areas. Such materials are termed "homogeneous materials" by the EPA. During this walkthrough, the approximate locations of these homogeneous materials were also noted.

The inspector evaluated the overall condition of the material and determined whether the materials were friable or non-friable by touching the material, where practical. A friable material is defined as any material able to be crushed, crumbled, pulverized or reduced to a powder by hand pressure when dry.

Each material was further assessed for overall condition. Conditions were rated as good, damaged or significantly damaged. TEC’s inspector also identified the EPA NESHAP classification of the material based on the materials current condition. TEC’s inspector provided estimated quantities of the materials identified as ACM, based only on materials that were accessible and exposed.

A2.3 ASBESTOS SAMPLING PROCEDURES

Following the walkthrough, the Inspector collected samples of suspect materials.

EPA guidelines were used to determine the sampling protocol. Sampling locations were chosen to be representative of the homogeneous sampling area. While an effort was made to collect samples randomly, samples were taken preferentially from areas already damaged or areas which were the least visible to minimize disturbance of the material.

Each sample location was sprayed with amended water and was kept wet during the entire sampling process. Samples were collected by coring through the material from the surface down to the base substrate. All layers of the material were extracted and placed into a sample container for transport to the laboratory. Sample containers were sealed and labeled with a unique sample identification number. Where appropriate, sampled materials were sealed with an encapsulant or covered with tape after sampling. TEC is not responsible for restoring the sampled areas to their pre-sampled condition.

A2.4 ASBESTOS ANALYSIS PROCEDURES

All samples were analyzed by

- APEX Research, Inc.
  7717 Kensington Ct.,
  Brighton, Michigan 48116

This Laboratory is National Voluntary Laboratory Accreditation Program (NVLAP) Accredited.

The samples were analyzed for asbestos on a “positive-stop” basis by PLM and in accordance with the “EPA Method for the Determination of Asbestos in Bulk Building Materials” (EPA/600/R-93/116 July 1993). Analysis was performed by observing the bulk samples and slide preparation(s) for microscopic examination and identification. The samples were mounted on slides and then analyzed for asbestos (chrysotile, amosite, crocidolite, anthophyllite, actinolite/tremolite), and fibrous non-asbestos constituents (mineral wool, fiberglass, cellulose, etc.). Asbestos was identified by refractive indices, morphology, color, pleochroism, birefringence, extinction characteristics, and signs of elongation. The same characteristics were used to identify the non-asbestos constituents.

Using a stereoscope, the microscopist visually estimated relative amounts of each constituent by determining the volume of each constituent in proportion to the total volume of the sample.

The EPA method allows samples which are visually determined to have less than 10% asbestos to be quantified using a Point Count procedure. An ocular reticule (cross hair or point array) is used to visually superimpose a point or points on the microscope field of view. A total of 400 points superimposed on either asbestos fibers or non-asbestos matrix material must be counted over at least eight different preparations of

representative subsamples. If an asbestos fiber and matrix particle overlap so that a point is superimposed on their visual intersection, a point is scored for both categories. Point counting provides a quantification of the area percent asbestos. Point counted results supersede the results of the visual estimation. No samples were point counted for this survey.

It should be noted that some ACM might not be accurately identified or quantified by PLM. As an example, the original fabrication of vinyl floor tiles routinely involved milling of asbestos fibers to extremely small sizes. As a result, these fibers may go undetected under the standard PLM method. Transmission Electron Microscopy (TEM) is recommended for a more definitive analysis of these materials.

A2.4.1 Laboratory Quality Control Program

Each laboratory maintains an in-house quality control program. This program involves blind reanalysis of ten (10) percent of all samples, precision and accuracy controls, and use of standard bulk reference materials. In addition, the Laboratories are accredited by NVLAP, which also has quality control procedures inherent in its program.

A2.5 REGULATORY GUIDELINES:

ACM Definition –

The EPA and OSHA consider a material to be ACM if at least one sample from the homogeneous area shows asbestos in an amount greater than 1%.

Point Count Quantification –

If a material is found to contain less than 1% asbestos via PLM visual estimation, it can be treated as non-ACM per EPA Regulations, if verified to contain 1% or less asbestos by the Point Count Quantification Procedure. If not point counted, a sample in which asbestos was visually detected and estimated (including trace to ≤fz1%) must be assumed to be greater than 1% and treated as ACM. Please refer to the laboratory analyses for a more detailed description of the microscopic analysis of individual samples. No samples were quantified by the Point Count Procedure in this Asbestos Survey.

EPA NESHAP Category –

EPA classifies ACM into the following categories:

- ***RACM*** as defined by the Asbestos NESHAP is any (a) Friable asbestos material, (b) Category I non-friable ACM that has become friable, (c) Category I non- friable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II non-friable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations.
- ***Category I Non-friable ACM*** includes packings, gaskets, resilient floor covering, and asphalt roofing products which contain more than one percent asbestos.
- ***Category II Non-friable ACM*** includes any material, except for a Category I non-friable ACM, which contains more than one-percent asbestos and cannot be reduced to a powder by hand pressure when dry.

OSHA –

OSHA requires all suspect materials to be analyzed by layer, even materials such as drywall/joint compound, which may sometimes be composited per the EPA. If any layer contains asbestos in a concentration >1%, the material is considered an ACM.

OSHA has a classification system (I thru IV) for ACM depending on the type of material and the disturbance as follows:

- ***Class I*** work is defined as activities involving the removal of ACM or presumed ACM (PACM) that is thermal system insulation (TSI) and surfacing materials.
- ***Class II*** activities involve removal of ACM/PACM other than TSI or surfacing material.
- ***Class III*** work includes repair and maintenance operations which are likely to disturb ACM/PACM.
- ***Class IV*** work includes maintenance and custodial activities during which employees contact but do not disturb ACM/PACM.

Materials where asbestos is detected, but where point counting is conducted and determined that the concentration is ≤1% asbestos, are not considered to be ACM by OSHA. However, these materials are considered unclassified asbestos work per OSHA. Some OSHA work control practices and prohibitions will still apply, with the extent depending on whether the worker's exposure to airborne asbestos exceeds the OSHA permissible exposure limit (PEL).

Additional details of the OSHA asbestos regulations related to the construction industry can be found in 29 CFR Part 1926.1101.

A2.6 QUANTIFICATION

Quantification of suspect ACMs were conducted using visual estimation by an accredited asbestos inspector. This visual estimation was performed in accordance with generally accepted practices in the asbestos industry based on materials that were accessible and exposed. These values are sufficiently accurate for the purpose of documenting the presence of asbestos within its space for the purpose of identifying abatement control conditions or for general policy considerations. Actual quantities may differ between visually estimated values and physical measurements. If a licensed asbestos abatement contractor is engaged to remove the identified ACM, they should be made responsible for verifying reported quantities of ACM.

APPENDIX B

ASBESTOS GLOSSARY OF TERMS

Asbestos Glossary of Terms

-A-

Abatement – The encapsulation, enclosure, removal or repair of a material.

ACM - Asbestos Containing Material. Any material containing greater than 1% asbestos by weight.

Accessible - When referring to ACM, the material is subject to disturbance by occupants or maintenance personnel in the course of their normal activities.

AHERA – The Asbestos Hazard Emergency Response Act (AHERA); Environmental Protection Agency (EPA), 40 CFR 763, Asbestos-Containing Materials in Schools

Asbestos - Any of a group of commercially mined minerals that tend to break into fibers. The regulated asbestos minerals are the serpentine mineral chrysotile and the asbestiform varieties of the amphibole minerals grunerite (amosite), riebeckite (crocidilite), tremolite, actinolite and anthophylitte. Amphibole minerals occur in both the regulated, asbestiform varieties and the non-regulated, non-asbestiform varieties. The fibers are resistant to high temperatures, have high tensile strength, and in some cases can be woven into cloth.

Asbestosis - A chronic fibrosis of the lungs typically caused by prolonged, heavy exposures to asbestos, usually affecting miners, ship-builders and mill-workers. There are different scales of asbestosis but in the worst cases, it will restrict breathing and often be degenerative. It takes between 15 and 30 years for the disease to manifest following exposure to asbestos.

Asbestos Abatement - The encapsulation, enclosure, removal or repair of an asbestos containing material.

Asbestos-containing Construction Material (ACM) - Any manufactured construction material which contains more than one 1-percent asbestos by weight.

-B-

Bulk Sample - A sample of material such as boarding, insulation or debris taken by an accredited surveyor to be tested for asbestos fiber content by an accredited laboratory.

-C-

Category I Nonfriable Asbestos-Containing Material (ACM) - Asbestos-containing packing, gaskets, resilient floor covering, and asphalt roofing products containing more than 1 percent asbestos as determined using the method specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy.

Category II Nonfriable ACM - Any material, excluding Category I nonfriable ACM, containing more than 1 percent asbestos as determined by using the methods specified in appendix A, subpart F, 40 CFR part 763, section 1, Polarized Light Microscopy that when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

Cementitious - A material that is typically a densely packed granular matrix of sand and limestone and is typically considered, non-friable.

Class I asbestos work - Activities involving the removal of thermal system insulation (TSI) and surfacing ACM and PACM. These types of activities will not be conducted by university employees.

Class II asbestos work - Activities involving the removal of ACM which is not thermal system insulation or surfacing material. This includes, but is not limited to, the removal of asbestos-containing wallboard, floor tile and sheeting, roofing and siding shingles, and construction mastics.

Class III asbestos work - Repair and maintenance operations, where "ACM" including TSI and surfacing ACM and PACM, is likely to be disturbed.

Class IV asbestos work - Maintenance and custodial activities during which employees contact but do not disturb ACM or PACM and activities to clean up dust, waste and debris resulting from Class I, II, and III activities.

-D-

Damaged Friable Miscellaneous ACM - Friable miscellaneous ACM which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the material is inadequate or, if applicable, which has delaminated such that its bond to the substrate (adhesion) is inadequate or which for any other reason lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeated water stains, scrapes, gouges, mars or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicated damage.

Damaged Friable Surfacing ACM - Friable surfacing Asbestos Containing Material which has deteriorated or sustained physical injury such that the internal structure (cohesion) of the asbestos material is inadequate or which has delaminated such that its bond to the substrate (adhesion) is inadequate, or which, for any other reason, lacks fiber cohesion or adhesion qualities. Such damage or deterioration may be illustrated by the separation of ACM into layers; separation of ACM from the substrate; flaking, blistering, or crumbling of the ACM surface; water damage; significant or repeat water stains, scrapes, gouges, mares or other signs of physical injury on the ACM. Asbestos debris originating from the ACBM in question may also indicate damage.

Damaged or Significantly Damaged Thermal System Insulation ACM - Thermal system insulation ACM on pipes, boilers, tanks, ducts, and other thermal system insulation equipment where the insulation has lost its structural integrity, or its covering, in whole or in part, is crushed, water stained, gouged, punctured, missing, or not intact such that it is not able to contain fibers. Damage may be further illustrated by occasional punctures, gouges or other signs of physical injury to ACM; occasional water damage on the protective coverings/jackets; or exposed ACM ends or joints. Asbestos debris originating from the ACBM in question may also indicating damage.

Delaminate - To separate into layers. In asbestos terms, to separate from the substrate.

Demolition - Means the wrecking, razing, or removal of any structure or load-supporting structural item of any structure, including any related material handling operations, and includes the intentional burning of any structure.

-E-

EPA - Environmental Protection Agency; a federal government agency dealing with environmental regulations; 401 M Street, S.W., Washington, D.C. 20460.

EPA Regulations - Regulatory standards which cover emissions into the outside environment from a workplace and disposal of hazardous wastes from job sites, as well as, asbestos issues in school buildings.

-F-

Fireproofing – Spray or trowel applied fire resistant materials.

Floor Tile – a flat piece of hard clay, stone, or other material that is used for covering floors.

Friable - Any material that, when dry, may be crumbled, pulverized, or reduced to powder by hand pressure, and includes previously nonfriable material after such previously nonfriable material becomes damaged to the extent that when dry it may be crumbled, pulverized, or reduced to powder by hand pressure.

Friable Asbestos - Any material containing more that 1 percent asbestos as determined using Polarized Light Microscopy, that, when dry, can be crumbled, pulverized, or reduced to powder by hand pressure. If the asbestos content is less than 10 percent as determined by a method other than point counting by polarized light microscopy (PLM), verify the asbestos content by point counting using PLM.

Functional Space - A room, group of rooms, or homogeneous area (including crawl spaces or the space between a dropped ceiling and the floor or roof deck above) designated by a person accredited to prepare management plans, design asbestos abatement projects, or conduct asbestos response actions.

-G, H-

Homogenous - Evenly mixed and similar in appearance and texture throughout.

Homogeneous Area - An area of surfacing material, thermal system insulation material, or miscellaneous material that is uniform in color and texture.

-I-

In Poor Condition - The binding of the asbestos containing material is losing its integrity as indicated by peeling, cracking, or crumbling of the material.

Installation - Any building or structure or any group of buildings or structures at a single demolition or renovation site that are under the control of the same owner or operator (or owner or operator under common control).

Inspector - Means an individual who is trained and licensed by the appropriate local, state or federal Department to identify and assess the condition of ACM. Inspectors shall perform their duties in accordance with the techniques, knowledge, training and responsibilities outlined in the appropriate OSHA and EPA regulations.

Intact - ACM that has not been crumbled, pulverized, or otherwise deteriorated.

-J, K, L-

License - Means an authorization issued by the appropriate local, state or federal Department permitting a business entity to engage in an asbestos project.

Linoleum - a material consisting of a canvas backing thickly coated with a preparation of linseed oil and powdered cork, used especially as a floor covering; includes

-M-

MIOSHA – Michigan Occupational Safety and Health Administration.

Miscellaneous ACM - Miscellaneous material that is an 'asbestos containing material' in a building.

Miscellaneous Material - Interior building material on structural components, structural members or fixtures, such as floor and ceiling tiles, and does not include surfacing material or thermal system insulation.

-N-

Non-friable - Material which when dry may not be crumbled, pulverized, or reduced to powder by hand pressure.

Non-friable Asbestos Containing Material (Non friable ACM) - Any material containing more that 1 percent asbestos as determined using Polarized Light Microscopy, that, when dry, cannot be crumbled, pulverized, or reduced to powder by hand pressure.

-O-

OSHA – the Occupational Health and Safety Administration.

-P-

P.P.E. - Personal Protective Equipment worn to protect a worker from exposure to, or contact with, any harmful material or force. Such as overalls, masks, gloves, safety glasses, steel-toed boots, hearing protection, cool collars, etc.

-Q-

Quantity – all quantities should be considered as estimates.

-R-

Random Sample - An asbestos sample drawn in such a way that there is no set pattern and is designed to give a true representation of the entire area.

Regulated Asbestos-Containing Material (RACM) - Means (a) Friable asbestos material, (b) Category I nonfriable ACM that has become friable, (c) Category I nonfriable ACM that will be or has been subjected to sanding, grinding, cutting, or abrading, or (d) Category II nonfriable ACM that has a high probability of becoming or has become crumbled, pulverized, or reduced to powder by the forces expected to act on the material in the course of demolition or renovation operations regulated by this subpart.

Removal - All operations where ACM and/or PACM is taken out or stripped from structures or substrates, including demolition operations.

Remove (Asbestos) - To take out RACM or facility components that contain or are covered with RACM from any facility.

-S-

Significantly Damaged Friable Miscellaneous ACM - Damaged friable miscellaneous Asbestos Containing Material where the damage is extensive and severe.

Structure or Structural Item - Means roofs, walls, ceilings, floors, structural supports, pipes, ducts, fittings and fixtures that have been installed as an integral part of any structure.

Surfacing material - Material that is sprayed, troweled-on or applied to surfaces (such as acoustical plaster on ceilings and fireproofing materials on structural members).

Surfacing ACM - Surfacing material which contains more than 1% asbestos.

Suspect Material - Material with the potential for being asbestos containing: synonymous with "presumed asbestos-containing material" (PACM).

-T-

Test Till Positive (TTP) or First Positive Stop (FPS) Sample Analysis – a bulk sample direction given to the laboratory by the asbestos surveyors to instruct the laboratory to stop analyzing multiple samples of the same material after the first sample comes back positive for asbestos. This is most typically utilized to minimize costs.

Thermal System Insulation - Material applied to pipes, fittings, boilers, breeching, tanks, ducts, or other interior structural components to prevent heat loss or gain, or water condensation, or for other purposes.

Thermal System Insulation ACM - Thermal system insulation that is an Asbestos Containing Material.

-U, V, W, X, Y, Z -

USEPA (EPA) - United States Environmental Protection Agency

Vermiculite - A micaceous mineral that is sometimes used as a substitute for asbestos which is lightweight and highly water-absorbent.

APPENDIX C

OSHA ABATEMENT PROCEDURES

Competent Persons. The employer shall ensure that all asbestos work performed within regulated areas is supervised by a competent person, as defined in paragraph (b) of this section. The duties of the competent person are set out in paragraph (o) of this section.

1926.1101(g)

Methods of compliance.

1926.1101(g)(1)

Engineering controls and work practices for all operations covered by this section. The employer shall use the following engineering controls and work practices in all operations covered by this section, regardless of the levels of exposure:

1926.1101(g)(1)(i)

Vacuum cleaners equipped with HEPA filters to collect all debris and dust containing ACM and PACM, except as provided in paragraph (g)(8)(ii) of this section in the case of roofing material.

1926.1101(g)(1)(ii)

Wet methods, or wetting agents, to control employee exposures during asbestos handling, mixing, removal, cutting, application, and cleanup, except where employers demonstrate that the use of wet methods is infeasible due to for example, the creation of electrical hazards, equipment malfunction, and, in roofing, except as provide in paragraph (g)(8)(ii) of this section; and

1926.1101(g)(1)(iii)

Prompt clean-up and disposal of wastes and debris contaminated with asbestos in leak-tight containers except in roofing operations, where the procedures specified in paragraph (g)(8)(ii) of this section apply.

1926.1101(g)(2)

In addition to the requirements of paragraph (g)(1) of this section, the employer shall use the following control methods to achieve compliance with the TWA permissible exposure limit and excursion limit prescribed by paragraph (c) of this section;

1926.1101(g)(2)(i)

Local exhaust ventilation equipped with HEPA filter dust collection systems;

1926.1101(g)(2)(ii)

Enclosure or isolation of processes producing asbestos dust;

1926.1101(g)(2)(iii)

Ventilation of the regulated area to move contaminated air away from the breathing zone of employees and toward a filtration or collection device equipped with a HEPA filter;

1926.1101(g)(2)(iv)

Use of other work practices and engineering controls that the Assistant Secretary can show to be feasible.

1926.1101(g)(2)(v)

Wherever the feasible engineering and work practice controls described above are not sufficient to reduce employee exposure to or below the permissible exposure limit and/or excursion limit prescribed in paragraph (c) of this section, the employer shall use them to reduce employee exposure to the lowest levels attainable by these controls and shall supplement them by the use of respiratory protection that complies with the requirements of paragraph (h) of this section.

1926.1101(g)(3)

Prohibitions. The following work practices and engineering controls shall not be used for work related to asbestos or for work which disturbs ACM or PACM, regardless of measured levels of asbestos exposure or the results of initial exposure assessments:

1926.1101(g)(3)(i)

High-speed abrasive disc saws that are not equipped with point of cut ventilator or enclosures with HEPA filtered exhaust air.

1926.1101(g)(3)(ii)

Compressed air used to remove asbestos, or materials containing asbestos, unless the compressed air is used in conjunction with an enclosed ventilation system designed to capture the dust cloud created by the compressed air.

1926.1101(g)(3)(iii)

Dry sweeping, shoveling or other dry clean-up of dust and debris containing ACM and PACM.

1926.1101(g)(3)(iv)

Employee rotation as a means of reducing employee exposure to asbestos.

1926.1101(g)(4)

***Class** I Requirements*. In addition to the provisions of paragraphs (g)(1) and (2) of this section, the following engineering controls and work practices and procedures shall be used.

1926.1101(g)(4)(i)

All **Class** I work, including the installation and operation of the control system shall be supervised by a competent person as defined in paragraph (b) of this section;

1926.1101(g)(4)(ii)

For all **Class** I jobs involving the removal of more than 25 linear or 10 square feet of thermal system insulation or surfacing material; for all other **Class** I jobs, where the employer cannot produce a negative exposure assessment pursuant to paragraph (f)(2)(iii) of this section, or where employees are working in

areas adjacent to the regulated area, while the **Class** I work is being performed, the employer shall use one of the following methods to ensure that airborne asbestos does not migrate from the regulated area:

1926.1101(g)(4)(ii)(A)

Critical barriers shall be placed over all the openings to the regulated area, except where activities are performed outdoors; or

1926.1101(g)(4)(ii)(B)

The employer shall use another barrier or isolation method which prevents the migration of airborne asbestos from the regulated area, as verified by perimeter area surveillance during each work shift at each boundary of the regulated area, showing no visible asbestos dust; and perimeter area monitoring showing that clearance levels contained in 40 CFR Part 763, Subpt. E, of the EPA Asbestos in Schools Rule are met, or that perimeter area levels, measured by Phase Contrast Microscopy (PCM) are no more than background levels representing the same area before the asbestos work began. The results of such monitoring shall be made known to the employer no later than 24 hours from the end of the work shift represented by such monitoring. Exception: For work completed outdoors where employees are not working in areas adjacent to the regulated areas, this paragraph (g)(4)(ii) is satisfied when the specific control methods in paragraph (g)(5) of this section are used.

1926.1101(g)(4)(iii)

For all **Class** I jobs, HVAC systems shall be isolated in the regulated area by sealing with a double layer of 6 mil plastic or the equivalent;

1926.1101(g)(4)(iv)

For all **Class** I jobs, impermeable dropcloths shall be placed on surfaces beneath all removal activity;

1926.1101(g)(4)(v)

For all **Class** I jobs, all objects within the regulated area shall be covered with impermeable dropcloths or plastic sheeting which is secured by duct tape or an equivalent.

1926.1101(g)(4)(vi)

For all **Class** I jobs where the employer cannot produce a negative exposure assessment, or where exposure monitoring shows that a PEL is exceeded, the employer shall ventilate the regulated area to move contaminated air away from the breathing zone of employees toward a HEPA filtration or collection device.

1926.1101(g)(5)

*Specific control methods for **Class** I work*. In addition, **Class** I asbestos work shall be performed using one or more of the following control methods pursuant to the limitations stated below:

1926.1101(g)(5)(i)

Negative Pressure Enclosure (NPE) systems: NPE systems may be used where the configuration of the work area does not make the erection of the enclosure infeasible, with the following specifications and work practices.

1926.1101(g)(5)(i)(A)

Specifications:

1926.1101(g)(5)(i)(A)*(1)*

The negative pressure enclosure (NPE) may be of any configuration,

1926.1101(g)(5)(i)(A)*(2)*

At least 4 air changes per hour shall be maintained in the NPE,

1926.1101(g)(5)(i)(A)*(3)*

A minimum of -0.02 column inches of water pressure differential, relative to outside pressure, shall be maintained within the NPE as evidenced by manometric measurements,

1926.1101(g)(5)(i)(A)*(4)*

The NPE shall be kept under negative pressure throughout the period of its use, and

1926.1101(g)(5)(i)(A)*(5)*

Air movement shall be directed away from employees performing asbestos work within the enclosure, and toward a HEPA filtration or a collection device.

1926.1101(g)(5)(i)(B)

Work Practices:

1926.1101(g)(5)(i)(B)*(1)*

Before beginning work within the enclosure and at the beginning of each shift, the NPE shall be inspected for breaches and smoke-tested for leaks, and any leaks sealed.

1926.1101(g)(5)(i)(B)*(2)*

Electrical circuits in the enclosure shall be deactivated, unless equipped with ground-fault circuit interrupters.

1926.1101(g)(5)(ii)

Glove bag systems may be used to remove PACM and/or ACM from straight runs of piping and elbows and other connections with the following specifications and work practices:

1926.1101(g)(5)(ii)(A)

Specifications:

1926.1101(g)(5)(ii)(A)*(1)*

Glovebags shall be made of 6 mil thick plastic and shall be seamless at the bottom.

1926.1101(g)(5)(ii)(A)*(2)*

Glovebags used on elbows and other connections must be designed for that purpose and used without modifications.

1926.1101(g)(5)(ii)(B)

Work Practices:

1926.1101(g)(5)(ii)(B)*(1)*

Each glovebag shall be installed so that it completely covers the circumference of pipe or other structure where the work is to be done.

1926.1101(g)(5)(ii)(B)*(2)*

Glovebags shall be smoke-tested for leaks and any leaks sealed prior to use.

1926.1101(g)(5)(ii)(B)*(3)*

Glovebags may be used only once and may not be moved.

1926.1101(g)(5)(ii)(B)*(4)*

Glovebags shall not be used on surfaces whose temperature exceeds 150 deg. F.

1926.1101(g)(5)(ii)(B)*(5)*

Prior to disposal, glovebags shall be collapsed by removing air within them using a HEPA vacuum.

1926.1101(g)(5)(ii)(B)*(6)*

Before beginning the operation, loose and friable material adjacent to the glovebag/box operation shall be wrapped and sealed in two layers of six mil plastic or otherwise rendered intact,

1926.1101(g)(5)(ii)(B)*(7)*

Where system uses attached waste bag, such bag shall be connected to collection bag using hose or other material which shall withstand pressure of ACM waste and water without losing its integrity:

1926.1101(g)(5)(ii)(B)*(8)*

Sliding valve or other device shall separate waste bag from hose to ensure no exposure when waste bag is disconnected:

1926.1101(g)(5)(ii)(B)*(9)*

At least two persons shall perform **Class** I glovebag removal operations.

1926.1101(g)(5)(iii)

Negative Pressure Glove Bag Systems. Negative pressure glove bag systems may be used to remove ACM or PACM from piping.

1926.1101(g)(5)(iii)(A)

Specifications: In addition to specifications for glove bag systems above, negative pressure glove bag systems shall attach HEPA vacuum systems or other devices to bag to prevent collapse during removal.

1926.1101(g)(5)(iii)(B)

Work Practices:

1926.1101(g)(5)(iii)(B)*(1)*

The employer shall comply with the work practices for glove bag systems in paragraph (g)(5)(ii)(B)(4) of this section.

1926.1101(g)(5)(iii)(B)*(2)*

The HEPA vacuum cleaner or other device used to prevent collapse of bag during removal shall run continually during the operation until it is completed at which time the bag shall be collapsed prior to removal of the bag from the pipe.

1926.1101(g)(5)(iii)(B)*(3)*

Where a separate waste bag is used along with a collection bag and discarded after one use, the collection bag may be reused if rinsed clean with amended water before reuse.

1926.1101(g)(5)(iv)

Negative Pressure Glove Box Systems: Negative pressure glove boxes may be used to remove ACM or PACM from pipe runs with the following specifications and work practices.

1926.1101(g)(5)(iv)(A)

Specifications:

1926.1101(g)(5)(iv)(A)*(1)*

Glove boxes shall be constructed with rigid sides and made from metal or other material which can withstand the weight of the ACM and PACM and water used during removal:

1926.1101(g)(5)(iv)(A)*(2)*

A negative pressure generator shall be used to create negative pressure in the system:

1926.1101(g)(5)(iv)(A)*(3)*

An air filtration unit shall be attached to the box:

1926.1101(g)(5)(iv)(A)*(4)*

The box shall be fitted with gloved apertures:

1926.1101(g)(5)(iv)(A)*(5)*

An aperture at the base of the box shall serve as a bagging outlet for waste ACM and water:

1926.1101(g)(5)(iv)(A)*(6)*

A back-up generator shall be present on site:

1926.1101(g)(5)(iv)(A)*(7)*

Waste bags shall consist of 6 mil thick plastic double-bagged before they are filled or plastic thicker than 6 mil.

1926.1101(g)(5)(iv)(B)

Work practices:

1926.1101(g)(5)(iv)(B)*(1)*

At least two persons shall perform the removal:

1926.1101(g)(5)(iv)(B)*(2)*

The box shall be smoke-tested for leaks and any leaks sealed prior to each use:

1926.1101(g)(5)(iv)(B)*(3)*

Loose or damaged ACM adjacent to the box shall be wrapped and sealed in two layers of 6 mil plastic prior to the job, or otherwise made intact prior to the job.

1926.1101(g)(5)(iv)(B)*(4)*

A HEPA filtration system shall be used to maintain pressure barrier in box.

1926.1101(g)(5)(v)

Water Spray Process System. A water spray process system may be used for removal of ACM and PACM from cold line piping if, employees carrying out such process have completed a 40-hour separate training course in its use, in addition to training required for employees performing **Class** I work. The system shall meet the following specifications and shall be performed by employees using the following work practices.

1926.1101(g)(5)(v)(A)

Specifications:

1926.1101(g)(5)(v)(A)*(1)*

Piping shall be surrounded on 3 sides by rigid framing,

1926.1101(g)(5)(v)(A)*(2)*

A 360 degree water spray, delivered through nozzles supplied by a high pressure separate water line, shall be formed around the piping.

1926.1101(g)(5)(v)(A)*(3)*

The spray shall collide to form a fine aerosol which provides a liquid barrier between workers and the ACM and PACM.

1926.1101(g)(5)(v)(B)

Work Practices:

1926.1101(g)(5)(v)(B)*(1)*

The system shall be run for at least 10 minutes before removal begins.

1926.1101(g)(5)(v)(B)*(2)*

All removal shall take place within the water barrier.

1926.1101(g)(5)(v)(B)*(3)*

The system shall be operated by at least three persons, one of whom shall not perform removal, but shall check equipment, and ensure proper operation of the system.

1926.1101(g)(5)(v)(B)*(4)*

After removal, the ACM and PACM shall be bagged while still inside the water barrier.

1926.1101(g)(5)(vi)

A small walk-in enclosure which accommodates no more than two persons (mini-enclosure) may be used if the disturbance or removal can be completely contained by the enclosure with the following specifications and work practices.

1926.1101(g)(5)(vi)(A)

Specifications:

1926.1101(g)(5)(vi)(A)*(1)*

The fabricated or job-made enclosure shall be constructed of 6 mil plastic or equivalent:

1926.1101(g)(5)(vi)(A)*(2)*

The enclosure shall be placed under negative pressure by means of a HEPA filtered vacuum or similar ventilation unit:

1926.1101(g)(5)(vi)(B)

Work practices:

1926.1101(g)(5)(vi)(B)*(1)*

Before use, the mini-enclosure shall be inspected for leaks and smoke-tested to detect breaches, and breaches sealed.

1926.1101(g)(5)(vi)(B)*(2)*

Before reuse, the interior shall be completely washed with amended water and HEPA-vacuumed.

1926.1101(g)(5)(vi)(B)*(3)*

During use, air movement shall be directed away from the employee's breathing zone within the mini-enclosure.

1926.1101(g)(6)

*Alternative control methods for **Class** I work*. **Class** I work may be performed using a control method which is not referenced in paragraph (g)(5) of this section, or which modifies a control method referenced in paragraph (g)(5)of this section, if the following provisions are complied with:

1926.1101(g)(6)(i)

The control method shall enclose, contain or isolate the processes or source of airborne asbestos dust, or otherwise capture or redirect such dust before it enters the breathing zone of employees.

1926.1101(g)(6)(ii)

A certified industrial hygienist or licensed professional engineer who is also qualified as a project designer as defined in paragraph (b) of this section, shall evaluate the work area, the projected work practices and the engineering controls and shall certify in writing that the planned control method is adequate to reduce direct and indirect employee exposure to below the PELs under worst-case conditions of use, and that the planned control method will prevent asbestos contamination outside the regulated area, as measured by clearance sampling which meets the requirements of EPA's Asbestos in Schools rule issued under AHERA, or perimeter monitoring which meets the criteria in paragraph (g)(4)(ii)(B) of this section.

1926.1101(g)(6)(ii)(A)

Where the TSI or surfacing material to be removed is 25 linear or 10 square feet or less , the evaluation required in paragraph (g)(6) of this section may be performed by a "competent person", and may omit consideration of perimeter or clearance monitoring otherwise required.

1926.1101(g)(6)(ii)(B)

The evaluation of employee exposure required in paragraph (g)(6) of this section, shall include and be based on sampling and analytical data representing employee exposure during the use of such method under worst-case conditions and by employees whose training and experience are equivalent to employees who are to perform the current job.

1926.1101(g)(7)

Work Practices and Engineering Controls for **Class** II work.

1926.1101(g)(7)(i)

All **Class** II work shall be supervised by a competent person as defined in paragraph (b) of this section.

1926.1101(g)(7)(ii)

For all indoor **Class** II jobs, where the employer has not produced a negative exposure assessment pursuant to paragraph (f)(2)(iii) of this section, or where during the job, changed conditions indicate there may be exposure above the PEL or where the employer does not remove the ACM in a

substantially intact state, the employer shall use one of the following methods to ensure that airborne asbestos does not migrate from the regulated area;

1926.1101(g)(7)(ii)(A)

Critical barriers shall be placed over all openings to the regulated area; or,

1926.1101(g)(7)(ii)(B)

The employer shall use another barrier or isolation method which prevents the migration of airborne asbestos from the regulated area, as verified by perimeter area monitoring or clearance monitoring which meets the criteria set out in paragraph (g)(4)(ii)(B) of this section.

1926.1101(g)(7)(ii)(C)

Impermeable dropcloths shall be placed on surfaces beneath all removal activity;

1926.1101(g)(7)(iii)

[Reserved]

1926.1101(g)(7)(iv)

All **Class** II asbestos work shall be performed using the work practices and requirements set out above in paragraph (g)(1)(i) through (g)(1)(iii) of this section.

1926.1101(g)(8)

*Additional Controls for **Class** II work*. **Class** II asbestos work shall also be performed by complying with the work practices and controls designated for each type of asbestos work to be performed, set out in this paragraph. Where more than one control method may be used for a type of asbestos work, the employer may choose one or a combination of designated control methods. **Class** II work also may be performed using a method allowed for **Class** I work, except that glove bags and glove boxes are allowed if they fully enclose the **Class** II material to be removed.

1926.1101(g)(8)(i)

For removing vinyl and asphalt flooring materials which contain ACM or for which in buildings constructed no later than 1980, the employer has not verified the absence of ACM pursuant to paragraph (g)(8)(i)(I) of this section. The employer shall ensure that employees comply with the following work practices and that employees are trained in these practices pursuant to paragraph (k)(9):

1926.1101(g)(8)(i)(A)

Flooring or its backing shall not be sanded.

1926.1101(g)(8)(i)(B)

Vacuums equipped with HEPA filter, disposable dust bag, and metal floor tool (no brush) shall be used to clean floors.

1926.1101(g)(8)(i)(C)

Resilient sheeting shall be removed by cutting with wetting of the snip point and wetting during delamination. Rip-up of resilient sheet floor material is prohibited.

1926.1101(g)(8)(i)(D)

All scraping of residual adhesive and/or backing shall be performed using wet methods.

1926.1101(g)(8)(i)(E)

Dry sweeping is prohibited.

1926.1101(g)(8)(i)(F)

Mechanical chipping is prohibited unless performed in a negative pressure enclosure which meets the requirements of paragraph (g)(5)(i) of this section.

1926.1101(g)(8)(i)(G)

Tiles shall be removed intact, unless the employer demonstrates that intact removal is not possible.

1926.1101(g)(8)(i)(H)

When tiles are heated and can be removed intact, wetting may be omitted.

1926.1101(g)(8)(i)(I)

Resilient flooring material including associated mastic and backing shall be assumed to be asbestos-containing unless an industrial hygienist determines that it is asbestos-free using recognized analytical techniques.

1926.1101(g)(8)(ii)

For removing roofing material which contains ACM the employer shall ensure that the following work practices are followed:

1926.1101(g)(8)(ii)(A)

Roofing material shall be removed in an intact state to the extent feasible.

1926.1101(g)(8)(ii)(B)

Wet methods shall be used to remove roofing materials that are not intact, or that will be rendered not intact during removal, unless such wet methods are not feasible or will create safety hazards.

1926.1101(g)(8)(ii)(C)

Cutting machines shall be continuously misted during use, unless a competent person determines that misting substantially decreases worker safety.

1926.1101(g)(8)(ii)(D)

When removing built-up roofs with asbestos-containing roofing felts and an aggregate surface using a power roof cutter, all dust resulting from the cutting operation shall be collected by a HEPA dust collector, or shall be HEPA vacuumed by vacuuming along the cut line. When removing built-up roofs

with asbestos-containing roofing felts and a smooth surface using a power roof cutter, the dust resulting from the cutting operation shall be collected either by a HEPA dust collector or HEPA vacuuming along the cut line, or by gently sweeping and then carefully and completely wiping up the still-wet dust and debris left along the cut line.

1926.1101(g)(8)(ii)(E)

Asbestos-containing material that has been removed from a roof shall not be dropped or thrown to the ground. Unless the material is carried or passed to the ground by hand, it shall be lowered to the ground via covered, dust-tight chute, crane or hoist:

1926.1101(g)(8)(ii)(E)*(1)*

Any ACM that is not intact shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift. While the material remains on the roof it shall either be kept wet, placed in an impermeable waste bag, or wrapped in plastic sheeting.

1926.1101(g)(8)(ii)(E)*(2)*

Intact ACM shall be lowered to the ground as soon as is practicable, but in any event no later than the end of the work shift.

1926.1101(g)(8)(ii)(F)

Upon being lowered, unwrapped material shall be transferred to a closed receptacle in such manner so as to preclude the dispersion of dust.

1926.1101(g)(8)(ii)(G)

Roof level heating and ventilation air intake sources shall be isolated or the ventilation system shall be shut down.

1926.1101(g)(8)(ii)(H)

Notwithstanding any other provision of this section, removal or repair of sections of intact roofing less than 25 square feet in area does not require use of wet methods or HEPA vacuuming as long as manual methods which do not render the material non-intact are used to remove the material and no visible dust is created by the removal method used. In determining whether a job involves less than 25 square feet, the employer shall include all removal and repair work performed on the same roof on the same day.

1926.1101(g)(8)(iii)

When removing cementitious asbestos-containing siding and shingles or transite panels containing ACM on building exteriors (other than roofs, where paragraph (g)(8)(ii) of this section applies) the employer shall ensure that the following work practices are followed:

1926.1101(g)(8)(iii)(A)

Cutting, abrading or breaking siding, shingles, or transite panels, shall be prohibited unless the employer can demonstrate that methods less likely to result in asbestos fiber release cannot be used.

1926.1101(g)(8)(iii)(B)

Each panel or shingle shall be sprayed with amended water prior to removal.

1926.1101(g)(8)(iii)(C)

Unwrapped or unbagged panels or shingles shall be immediately lowered to the ground via covered dust-tight chute, crane or hoist, or placed in an impervious waste bag or wrapped in plastic sheeting and lowered to the ground no later than the end of the work shift.

1926.1101(g)(8)(iii)(D)

Nails shall be cut with flat, sharp instruments.

1926.1101(g)(8)(iv)

When removing gaskets containing ACM, the employer shall ensure that the following work practices are followed:

1926.1101(g)(8)(iv)(A)

If a gasket is visibly deteriorated and unlikely to be removed intact, removal shall be undertaken within a glovebag as described in paragraph (g)(5)(ii) of this section.

1926.1101(g)(8)(iv)(B)

[Reserved]

1926.1101(g)(8)(iv)(C)

The gasket shall be immediately placed in a disposal container.

1926.1101(g)(8)(iv)(D)

Any scraping to remove residue must be performed wet.

1926.1101(g)(8)(v)

When performing any other **Class** II removal of asbestos containing material for which specific controls have not been listed in paragraph (g)(8)(iv)(A) through (D) of this section, the employer shall ensure that the following work practices are complied with.

1926.1101(g)(8)(v)(A)

The material shall be thoroughly wetted with amended water prior to and during its removal.

1926.1101(g)(8)(v)(B)

The material shall be removed in an intact state unless the employer demonstrates that intact removal is not possible.

1926.1101(g)(8)(v)(C)

Cutting, abrading or breaking the material shall be prohibited unless the employer can demonstrate that methods less likely to result in asbestos fiber release are not feasible.

1926.1101(g)(8)(v)(D)

Asbestos-containing material removed, shall be immediately bagged or wrapped, or kept wetted until transferred to a closed receptacle, no later than the end of the work shift.

1926.1101(g)(8)(vi)

Alternative Work Practices and Controls. Instead of the work practices and controls listed in paragraph (g)(8)(i) through (v) of this section, the employer may use different or modified engineering and work practice controls if the following provisions are complied with.

1926.1101(g)(8)(vi)(A)

The employer shall demonstrate by data representing employee exposure during the use of such method under conditions which closely resemble the conditions under which the method is to be used, that employee exposure will not exceed the PELs under any anticipated circumstances.

1926.1101(g)(8)(vi)(B)

A competent person shall evaluate the work area, the projected work practices and the engineering controls, and shall certify in writing, that the different or modified controls are adequate to reduce direct and indirect employee exposure to below the PELs under all expected conditions of use and that the method meets the requirements of this standard. The evaluation shall include and be based on data representing employee exposure during the use of such method under conditions which closely resemble the conditions under which the method is to be used for the current job, and by employees whose training and experience are equivalent to employees who are to perform the current job.

1926.1101(g)(9)

*Work Practices and Engineering Controls for **Class** III asbestos work*. **Class** III asbestos work shall be conducted using engineering and work practice controls which minimize the exposure to employees performing the asbestos work and to bystander employees.

1926.1101(g)(9)(i)

The work shall be performed using wet methods.

1926.1101(g)(9)(ii)

To the extent feasible, the work shall be performed using local exhaust ventilation.

1926.1101(g)(9)(iii)

Where the disturbance involves drilling, cutting, abrading, sanding, chipping, breaking, or sawing of thermal system insulation or surfacing material, the employer shall use impermeable dropcloths, and shall isolate the operation using mini-enclosures or glove bag systems pursuant to paragraph (g)(5) of this section or another isolation method.

1926.1101(g)(9)(iv)

Where the employer does not produce a "negative exposure assessment" for a job, or where monitoring results show the PEL has been exceeded, the employer shall contain the area using impermeable

dropcloths and plastic barriers or their equivalent, or shall isolate the operation using a control system listed in and in compliance with paragraph (g)(5) of this section.

1926.1101(g)(9)(v)

Employees performing **Class** III jobs, which involve the disturbance of thermal system insulation or surfacing material, or where the employer does not produce a "negative exposure assessment" or where monitoring results show a PEL has been exceeded, shall wear respirators which are selected, used and fitted pursuant to provisions of paragraph (h) of this section.

1926.1101(g)(10)

Class *IV asbestos work*. **Class** IV asbestos jobs shall be conducted by employees trained pursuant to the asbestos awareness training program set out in paragraph (k)(9) of this section. In addition, all **Class** IV jobs shall be conducted in conformity with the requirements set out in paragraph (g)(1) of this section, mandating wet methods, HEPA vacuums, and prompt clean up of debris containing ACM or PACM.

1926.1101(g)(10)(i)

Employees cleaning up debris and waste in a regulated area where respirators are required shall wear respirators which are selected, used and fitted pursuant to provisions of paragraph (h) of this section.

1926.1101(g)(10)(ii)

Employers of employees who clean up waste and debris in, and employers in control of, areas where friable thermal system insulation or surfacing material is accessible, shall assume that such waste and debris contain asbestos.

APPENDIX D

ASBESTOS SAMPLE LOG/CHAIN OF CUSTODY

Apex # **107136**

Testing Engineers and Consultants, Inc.
1343 Rochester Road
Troy, Michigan 4083-6015
Phone: 248.585.6200; Fax 248.585.9519

CHAIN OF CUSTODY

Client Name: Wayne State University
Address: 5454 Cass Avenue
City, St., Zip Detroit, MI 48202

Date of Survey: 10/27/2023
Project Name: 5959 Woodward - ACM
Project Number: 60545-14
Contact Person: see circled below*

TURN AROUND TIME

Rush		24 Hour	✓	**Asbestos:**	Bulk	✓	Wipe		Pnt. Cnt.	≤ 2%	PCM						
48 Hour		72 Hour		**Lead:**	Bulk		Wipe		Air		Paint		Soil				
Other		TTP	✓	**Mold:**	Bulk		Tape		BioCell		BioSis		Other				
				TEM:	AHERA	7400		Bulk/NOB		EPA	Level II						

Analytical Method(s) Requested:

Lab ID#	Client ID #	Material/Description	Volume/Area/Location	Results
	1A-B	Rubber Floor Adhesive (Yellow)		
	2A-B	Carbon w/Adhesive (Blue)		
	3A	Fiberglass Insulation (Pink)		
	4A-B	Interior Caulk (White)		
	5A-B	Interior Window Glaze (Grey)		
	6A-B	1'x1' Ceiling Tile w/Glue Pad (White - pinhole)		
	7A-B	Carpet Adhesive (Yellow)		
	8A-B	9"x9" Floor Tile w/Adhesive (Tan)		
	9A-B	Drywall and Joint Compound (White)		
	10A-E	Plaster w/Skimcoat (White)		
	11A-C	Straight Pipe Insulation (4" - Grey)		
	12A-B	Sheetrock (White)		
	13A-B	Drywall and Adhesive (Brown)		
	14A-B	Interior Window Glaze (Grey)		
	15A-B	Windowsill Mortar (Grey)		
	16A-B	9"x9" Floor Tile w/Adhesive (Dark Brown)		
	17A-B	Interior Caulk (Grey)		
	18A-B	Door Frame Sealant (White)		
	19A-B	Carbon w/Adhesive (Black)		
	20A-B	Carbon w/Adhesive (White)		

Relinquished By: [signature] **Date:** 10/30/2023

Received By: RECEIVED KD **Date:** 4:01

OCT 30 2023

APEX RESEARCH

Relinquished By: _____ **Date:** _____

Received By: _____ **Date:** _____

*jkonrad@tectest.com; mkonrad@tectest.com; jlkonrad@tectest.com; jpallach@tectest.com; ekliemann@tectest.com; ihdepartment123456@gmail.com

smarshall@tectest.com

107136

Testing Engineers and Consultants, Inc.
1343 Rochester Road
Troy, Michigan 4083-6015
Phone: 248.585.6200; Fax 248.585.9519

CHAIN OF CUSTODY

Client Name: Wayne State University
Address: 5454 Cass Avenue
City, St., Zip Detroit, MI. 48202

Date of Survey: 10/27/2023
Project Name: 5959 Woodward - ACM
Project Number: 60545-14
Contact Person: see circled below*

TURN AROUND TIME

Rush		24 Hour	✓
48 Hour		72 Hour	
Other		TTP	✓

Analytical Method(s) Requested:

Asbestos:	Bulk	✓	Wipe		Pnt. Cnt.	≤2%	PCM				
Lead:	Bulk		Wipe		Air		Paint		Soil		
Mold:	Bulk		Tape		BioCell		BioSis		Other		
TEM:	AHERA	7400		Bulk/NOB		EPA	Level II				

Lab ID#	Client ID #	Material/Description	Volume/Area/Location	Results
	21 A-B	CMU [redacted] w/ Mortar (Grey)		
	22 A-B	Carpet Adhesive & Leveling Compound (White)		
	23 A-B	Concrete Foundation (Grey)		
	24 A-B	Light Heat Shield (Grey)		
	25 A-B	Vibration Dampener (Black)		
	26 A-B	Duct Sealant (Black)		
	27 A-B	1'x1' Ceiling Tile (White - Dot)		
	28 A-B	Cement Patch (Grey)		
	29 A-B	Carbase w/ Adhesive (Brown)		
	30 A	Fiberglass Straight Pipe Insulation		
	31 A-B	Ramp Tread w/ Adhesive (Black)		
	32 A-B	Construction Adhesive (Tan)		
	33 A	Fiberglass [redacted] Duct Insulation (Yellow)		
	34 A-B	Exterior Door Frame Caulk (Grey)		
	35 A-B	Exterior Window Caulk (Grey)		
	36 A-B	Exterior Window Glaze (Grey)		
	37 A-B	Exterior Window Sealant (Grey)		
	38 A-B	Exterior Sealant (Grey)		
	39 A-B	Brick and Mortar (Orange)		
	40 A-B	Exterior Door Frame Sealant (White)		

Relinquished By: [signature] **Date:** 10/30/2023

Received By: RECEIVED **Date:** 4:01 OCT 30 2023

Relinquished By: _____ **Date:** _____

Received By: _____ **Date:** _____

*jkonrad@tectest.com; mkonrad@tectest.com; jlkonrad@tectest.com; jpallach@tectest.com; ekliemann@tectest.com; ihdepartment123456@gmail.com

smarshall@tectest.com APEX RESEARCH

APPENDIX E

REPORT OF BULK SAMPLE ANALYSIS FOR ASBESTOS

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 01 Cust. #: 1A Material: Rubber Floor Adhesive (Yellow) Location: Appearance: yellow,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 107136 - 02 Cust. #: 1B Material: Rubber Floor Adhesive (Yellow) Location: Appearance: yellow,nonfibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Other - 99%
Lab ID #: 107136 - 03 Cust. #: 2A Material: Cove Base (Blue) Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 03a Cust. #: 2A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 04 Cust. #: 2B Material: Cove Base (Blue) Location: Appearance: blue,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 04a Cust. #: 2B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 05 Cust. #: 3A Material: Fiberglass Insulation (Pink) Location: Appearance: pink,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 5% Fiberglass - 85% Other - 10%
Lab ID #: 107136 - 06 Cust. #: 4A Material: Interior Caulk (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 07 Cust. #: 4B Material: Interior Caulk (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 08 Cust. #: 5A Material: Interior Door Window Glaze (Grey) Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 1.25% POINT COUNT RESULT	Other - 98.75%
Lab ID #: 107136 - 09 Cust. #: 5B Material: Interior Door Window Glaze (Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 107136 - 10 Cust. #: 6A Material: 1'x1' Ceiling Tile (White-Pinhole) Location: Appearance: brown,fibrous,nonhomogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 10a Cust. #: 6A Material: Glue Pod Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 10b Cust. #: 6A Material: Caulk Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 11 Cust. #: 6B Material: 1'x1' Ceiling Tile (White-Pinhole) Location: Appearance: brown,fibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 90% Other - 10%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 11a Cust. #: 6B Material: Glue Pod Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 11b Cust. #: 6B Material: Caulk Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 12 Cust. #: 7A Material: Carpet Adhesive (Yellow) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 13 Cust. #: 7B Material: Carpet Adhesive (Yellow) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 14 Cust. #: 8A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 14a Cust. #: 8A Material: 9"x9" Floor Tile (Tan) Location: Appearance: brown,fibrous,homogenous Layer: 2 of 3	Asbestos Present: **YES** Chrysotile - 10%	Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM
Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 14b Cust. #: 8A Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 15 Cust. #: 8B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 15a Cust. #: 8B Material: 9"x9" Floor Tile (Tan) Location: Appearance: Layer: 2 of 3	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM
Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 15b Cust. #: 8B Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 16 Cust. #: 9A Material: Drywall (White) Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 107136 - 16a Cust. #: 9A Material: Joint Compound (White) Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 17 Cust. #: 9B Material: Drywall (White) Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 107136 - 17a Cust. #: 9B Material: Joint Compound (White) Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 18 Cust. #: 10A Material: Plaster Skim Coat (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 18a Cust. #: 10A Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,nonhomogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Mica - 15% Other - 84%
Lab ID #: 107136 - 19 Cust. #: 10B Material: Plaster Skim Coat (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 19a Cust. #: 10B Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Mica - 15% Other - 85%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 20 Cust. #: 10C Material: Plaster Skim Coat (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 20a Cust. #: 10C Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Mica - 10% Other - 89%
Lab ID #: 107136 - 21 Cust. #: 10D Material: Plaster Skim Coat (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 21a Cust. #: 10D Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Mica - 15% Other - 84%
Lab ID #: 107136 - 22 Cust. #: 10E Material: Plaster Skim Coat (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 22a Cust. #: 10E Material: Plaster Base Coat Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 1% Mica - 10% Other - 89%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 23 Cust. #: 11A Material: Straight Pipe Ins.. (4"-Grey) Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 50%	Cellulose - 40% Other - 10%
Lab ID #: 107136 - 24 Cust. #: 11B Material: Straight Pipe Ins.. (4"-Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 107136 - 25 Cust. #: 11C Material: Straight Pipe Ins.. (4"-Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 26 Cust. #: 12A Material: Sheetrock (White) Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 107136 - 27 Cust. #: 12B Material: Sheetrock (White) Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 107136 - 28 Cust. #: 13A Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 28a Cust. #: 13A Material: Adhesive (Brown) Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 29 Cust. #: 13B Material: Drywall Location: Appearance: white,fibrous,nonhomogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 20% Other - 80%
Lab ID #: 107136 - 29a Cust. #: 13B Material: Adhesive (Brown) Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 30 Cust. #: 14A Material: Interior Window Glaze (Grey) Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 1.5% POINT COUNT RESULT	Other - 98.5%
Lab ID #: 107136 - 31 Cust. #: 14B Material: Interior Window Glaze (Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 107136 - 32 Cust. #: 15A Material: Windowsill Mortar (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 33 Cust. #: 15B Material: Windowsill Mortar (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 34 Cust. #: 16A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 34a Cust. #: 16A Material: 9"x9" Floor Tile (Dark Brown) Location: Appearance: brown,fibrous,homogenous Layer: 2 of 3	Asbestos Present: **YES** Chrysotile - 10%	Other - 90%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 34b Cust. #: 16A Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 35 Cust. #: 16B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 35a Cust. #: 16B Material: 9"x9" Floor Tile (Dark Brown) Location: Appearance: Layer: 2 of 3	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 35b Cust. #: 16B Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 36 Cust. #: 17A Material: Interior Caulk (Grey) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 37 Cust. #: 17B Material: Interior Caulk (Grey) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 38 Cust. #: 18A Material: Door Frame Sealant (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 39 Cust. #: 18B Material: Door Frame Sealant (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 40 Cust. #: 19A Material: Cove Base (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 40a Cust. #: 19A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 41 Cust. #: 19B Material: Cove Base (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 41a Cust. #: 19B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 42 Cust. #: 20A Material: Cove Base (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 42a Cust. #: 20A Material: Adhesive Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 43 Cust. #: 20B Material: Cove Base (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 43a Cust. #: 20B Material: Adhesive Location: Appearance: brown,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 44 Cust. #: 21A Material: CMU (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 44a Cust. #: 21A Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 45 Cust. #: 21B Material: CMU (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 45a Cust. #: 21B Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 46 Cust. #: 22A Material: Carpet Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 46a Cust. #: 22A Material: Leveling Compound (White) Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 46b Cust. #: 22A Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 47 Cust. #: 22B Material: Carpet Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 47a Cust. #: 22B Material: Leveling Compound (White) Location: Appearance: white,nonfibrous,homogenous Layer: 2 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 47b Cust. #: 22B Material: Adhesive Location: Appearance: black,nonfibrous,homogenous Layer: 3 of 3	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 48 Cust. #: 23A Material: Concrete Foundation (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 49 Cust. #: 23B Material: Concrete Foundation (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 50 Cust. #: 24A Material: Light Heat Shield (Grey) Location: Appearance: grey,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 50%	Other - 50%
Lab ID #: 107136 - 51 Cust. #: 24B Material: Light Heat Shield (Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 52 Cust. #: 25A Material: Vibration Dampener (Black) Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 107136 - 53 Cust. #: 25B Material: Vibration Dampener (Black) Location: Appearance: black,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 15% Other - 85%
Lab ID #: 107136 - 54 Cust. #: 26A Material: Duct Sealant (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 55 Cust. #: 26B Material: Duct Sealant (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 56 Cust. #: 27A Material: 1'x1' Ceiling Tile (White-Dot) Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 80% Other - 20%
Lab ID #: 107136 - 57 Cust. #: 27B Material: 1'x1' Ceiling Tile (White-Dot) Location: Appearance: brown,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 80% Other - 20%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 58 Cust. #: 28A Material: Cement Patch (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 59 Cust. #: 28B Material: Cement Patch (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 60 Cust. #: 29A Material: Cove Base (Brown) Location: Appearance: brown,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 60a Cust. #: 29A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 61 Cust. #: 29B Material: Cove Base (Brown) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 61a Cust. #: 29B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 62 Cust. #: 30A Material: Fiberglass Straight Pipe Insulation Location: Appearance: yellow,fibrous,nonhomogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Cellulose - 10% Fiberglass - 65% Other - 25%
Lab ID #: 107136 - 63 Cust. #: 31A Material: Ramp Tread (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 63a Cust. #: 31A Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 64 Cust. #: 31B Material: Ramp Tread (Black) Location: Appearance: black,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 64a Cust. #: 31B Material: Adhesive Location: Appearance: yellow,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 65 Cust. #: 32A Material: Construction Adhesive (Tan) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM
Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 66 Cust. #: 32B Material: Construction Adhesive (Tan) Location: Appearance: yellow,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 67 Cust. #: 33A Material: Fiberglass Duct Insulation (Yellow) Location: Appearance: yellow,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Fiberglass - 90% Other - 10%
Lab ID #: 107136 - 68 Cust. #: 34A Material: Exterior Door Frame Caulk (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 69 Cust. #: 34B Material: Exterior Door Frame Caulk (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 70 Cust. #: 35A Material: Exterior Door Frame Caulk (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 71 Cust. #: 35B Material: Exterior Door Frame Caulk (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 72 Cust. #: 36A Material: Exterior Door Frame Caulk (Grey) Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 1.5% POINT COUNT RESULT	Other - 98.5%
Lab ID #: 107136 - 73 Cust. #: 36B Material: Exterior Window Glaze (Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	
Lab ID #: 107136 - 74 Cust. #: 37A Material: Exterior Window Sealant (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 75 Cust. #: 37B Material: Exterior Window Sealant (Grey) Location: Appearance: grey,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 76 Cust. #: 38A Material: Exterior Sealant (Grey) Location: Appearance: grey,fibrous,homogenous Layer: 1 of 1	Asbestos Present: **YES** Chrysotile - 5%	Other - 95%
Lab ID #: 107136 - 77 Cust. #: 38B Material: Exterior Sealant (Grey) Location: Appearance: Layer: of	Asbestos Present: NOT ANALYZED	

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 78 Cust. #: 39A Material: Brick (Orange) Location: Appearance: red,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 78a Cust. #: 39A Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 79 Cust. #: 39B Material: Brick (Orange) Location: Appearance: red,nonfibrous,homogenous Layer: 1 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

Certificate of Laboratory Analysis

Test Method, Polarized Light Microscopy (PLM)

Project: 5959 Woodward - ACM

Project #: 60545-14

Report To:
Mr. Joe Konrad
Testing Engineers & Consultants, Inc.
1343 Rochester Rd.
Troy, MI 48083

ARI Report # 23-107136
Date Collected: 10/27/23
Date Received: 10/30/23
Date Analyzed: 10/31/23
Date Reported: 11/01/23

Sample Information	Asbestos Type/Percent	Non-Asbestos Material
Lab ID #: 107136 - 79a Cust. #: 39B Material: Mortar Location: Appearance: grey,nonfibrous,homogenous Layer: 2 of 2	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 80 Cust. #: 40A Material: Exterior Door Frame Sealant (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%
Lab ID #: 107136 - 81 Cust. #: 40B Material: Exterior Door Frame Sealant (White) Location: Appearance: white,nonfibrous,homogenous Layer: 1 of 1	Asbestos Present: **NO** No Asbestos Observed	Other - 100%

For Layered Samples, each component will be analyzed and reported separately.

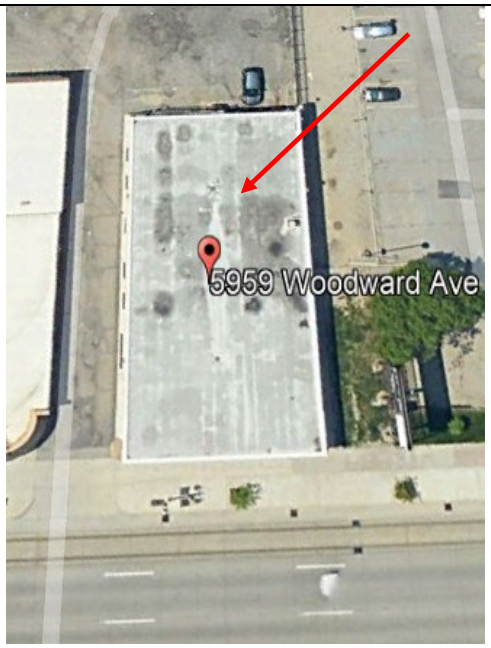
Robert T. Letarte Jr., Laboratory Director

Test Method EPA 40 CFR - Part 763 and/or EPA 600/R-93/116 was used to analyze the above samples. Matrix interference and/or resolution limits may yield false/negative results in certain circumstances. Suspect floor tiles containing <1% should be tested with SEM or TEM. This certificate of analysis relates only to the samples as submitted and to insure the integrity of the results, may only be reproduced in full. This certificate must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government. Liability limited to cost of analysis.

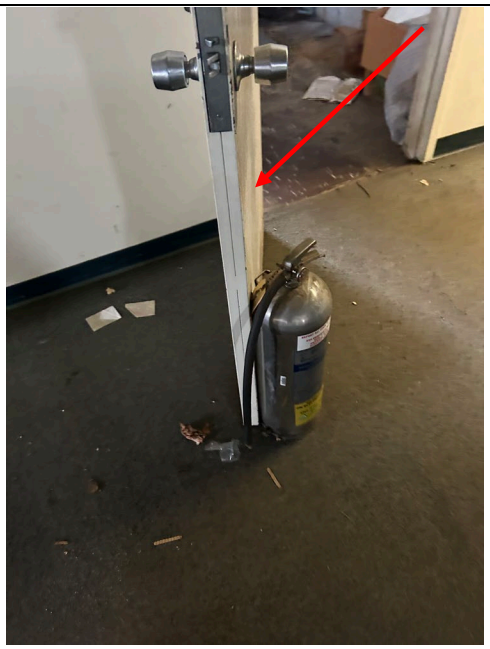
APPENDIX F

PHOTOGRAPHIC LOG

5959 Woodward Avenue
Detroit, MI



Assumed Asbestos-Containing Roofing Materials



Assumed Asbestos-Containing Fire Door

HM#5 Asbestos-Containing Interior Door Window Glaze (Grey)

HM#8 Asbestos-Containing 9”x9” Floor Tile (Tan) w/ Adhesive (Black)& Adhesive (Yellow)

HM # 11 Asbestos-Containing 4” Straight Pipe Insulation (Grey)

HM #14 Asbestos-Containing Interior Window Glaze (Grey)

HM#16 Asbestos-Containing 9”x9” Floor Tile (Dark Brown) w/ Adhesive (Black)& Adhesive (Yellow)

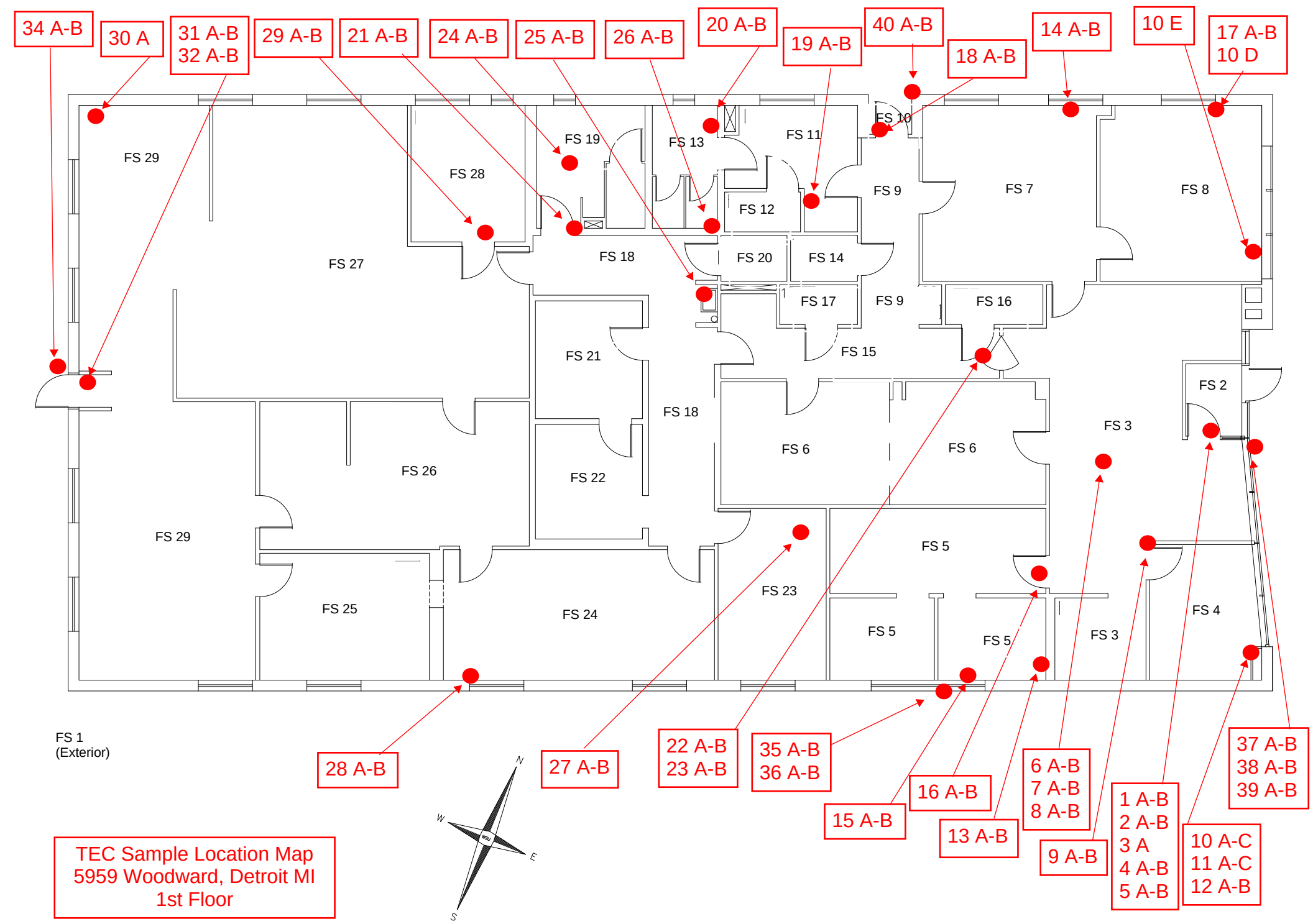
HM#24 Asbestos-Containing Light Heat Shield (Grey)

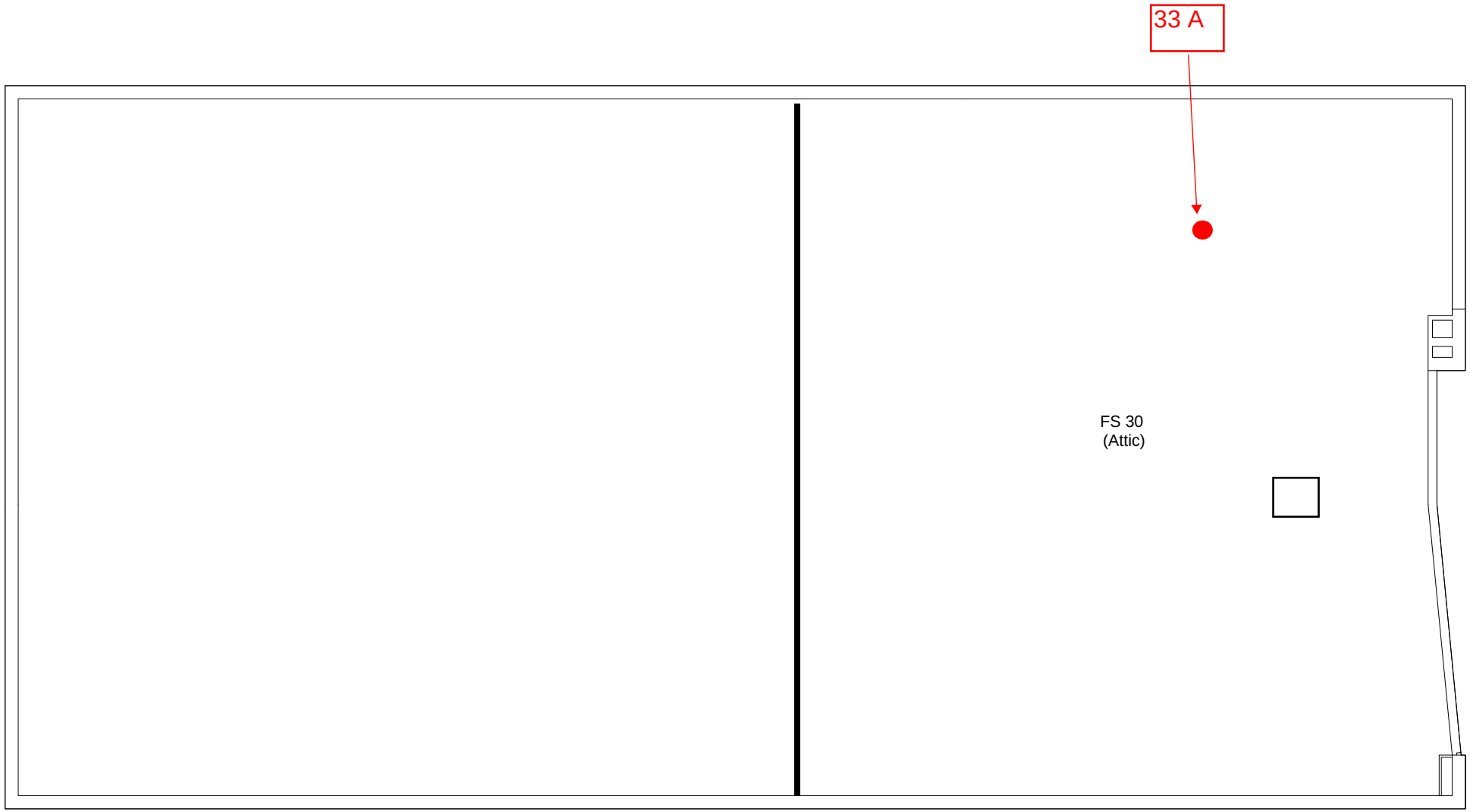
HM#36 Asbestos-Containing Window Glaze (Grey)

HM#38 Asbestos-Containing Exterior Sealant (Grey)

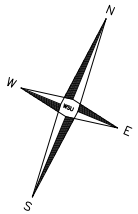
APPENDIX G

ACM Sample Location Maps


34 A-B
30 A
31 A-B
32 A-B
29 A-B
21 A-B
24 A-B
25 A-B
26 A-B
20 A-B
19 A-B
40 A-B
18 A-B
14 A-B
10 E
17 A-B
10 D
FS 29
FS 28
FS 19
FS 13
FS 11
FS 10
FS 9
FS 7
FS 8
FS 12
FS 27
FS 18
FS 20
FS 14
FS 17
FS 9
FS 16
FS 15
FS 21
FS 2
FS 18
FS 3
FS 6
FS 6
FS 26
FS 22
FS 29
FS 5
FS 23
FS 25
FS 24
FS 5
FS 5
FS 3
FS 4
FS 1
(Exterior)
28 A-B
27 A-B
22 A-B
23 A-B
35 A-B
36 A-B
15 A-B
16 A-B
13 A-B
6 A-B
7 A-B
8 A-B
9 A-B
1 A-B
2 A-B
3 A
4 A-B
5 A-B
10 A-C
11 A-C
12 A-B
37 A-B
38 A-B
39 A-B
N
W
E
S
TEC Sample Location Map
5959 Woodward, Detroit MI
1st Floor



TEC Sample Location Map
5959 Woodward, Detroit MI
Attic



APPENDIX H

Limited Lead Containing Components Assessment

Testing Engineers & Consultants, Inc.
1343 Rochester Road • PO Box 249 • Troy, Michigan 48099-0249
(248) 588-6200 or (313) T-E-S-T-I-N-G • Fax (248) 588-6232
www.testingengineers.com

TEC Report Number: 60545-14
Date Issued: November 2, 2023

Ariel Suarez
Associate Project Manager
Wayne State University
5454 Cass Avenue,
Detorit, MI 48202

Re Lead-Containing Paint Screening Report. Project: located at 5959 Woodward Avenue; Detroit, MI 48202.

Dear Ariel Suarez:

Enclosed please find our report of a lead-containing paint screening at the above referenced location.

We are pleased to provide this service. Should you have any questions regarding this report or require additional information, please contact this office at your convenience.

Respectfully Yours,
TESTING ENGINEERS & CONSULTANTS, INC.

Madison Konrad
Group Manager
Industrial Hygiene Services Group

Jacob Pallach
State of Michigan Licensed
Lead Inspector/Risk Assessor,
P-009680

Testing Engineers & Consultants, Inc.
5959 Woodward, Detroit MI
November 2, 2023

TEC Report Number: 60545-14

TABLE OF CONTENTS

ATTACHMENTS

Testing Engineers & Consultants, Inc.
5959 Woodward Ave, Detroit, MI 48202
November 1, 2023

TEC Report Number: 60545-14

EXECUTIVE SUMMARY

Testing Engineers & Consultants, Inc. (TEC) was retained by Wayne State University, to conduct a lead-containing paint screening at the building located at 5959 Woodward Avenue, Detroit, MI 48202, since the painted surfaces may be disturbed during upcoming demolition or renovation activities.

Major painted surfaces were analyzed for lead content using an X-ray fluorescence (XRF) analyzer. XRF and paint chip results and are found in Attachment A.

Lead-containing paint (greater than instrument detection limit but less than 1.0 mg/cm^2 or less than 0.5% by weight) and Lead-Based paint (greater than 1.0 mg/cm^2 or greater than 0.5% by weight) was identified in the building. The paint condition throughout the survey area was generally in good condition and intact, with some areas of deterioration throughout the buildings.

Refer to Attachment C for specific paint chip sample locations.

Introduction

On October 27, 2023, Jacob Pallach, a State of Michigan Licensed Lead Inspector/ Risk Assessor (P009680) conducted a lead-containing paint screening of the major paint surfaces of the building located at 5959 Woodward Avenue, Detroit, MI 48202. The scope of work involved collecting lead content data for the major paint/component/substrate surfaces that were encountered throughout the building.

This report establishes lead concentrations in painted surfaces as a general guidance tool for the purpose of conducting safe demolition activities in the building.

This report was prepared for the express use and benefit of Wayne State University, and its agents and employees. The information in this report or portions thereof may be required to be included in notifications to the occupants, employees, contractors, or other visitors to the building. This report is not intended to be used by the owner or its agents as a specification or work plan for any of the work suggested or recommended herein.

The screening did not include areas behind walls and/or columns, beneath flooring, under carpeting, above solid ceilings, underground or in any other inaccessible areas; furthermore, this was not intended to be a surface by surface, HUD style assessment. Only the major painted surfaces were screened for lead. Those paint types/surfaces that are not presented in this report should be considered to be lead-containing until they are tested and verified to be non-lead containing painted surfaces.

Survey Methodology

The screening involved collecting lead content data for specific painted surfaces of building components of varying color and substrate composition within the area of interest.

The lead content of painted surfaces was determined using a SCIAps X-550 x-ray fluorescence (XRF) analyzer. XRF instruments irradiate the paint on a given surface causing the lead in the paint, if present, to emit a characteristic frequency of x-ray radiation. The analyzer identifies and counts these x-rays to instantaneously determine the concentration in the paint film. The intensity of this radiation is measured by the detector and is proportional to the amount of lead in the paint. The results are reported in milligrams of lead per square centimeter of surface area (mg Pb/cm^2).

The instrument is a direct-read device, does not require substrate correction and does not report inconclusive results. The limit of detection is approximately 0.01 mg/cm^2.

Quality control for the analyzer involves on-site calibration. For each project, the analyzer is calibrated at the beginning and the end of the survey. In the event that a battery change is required during the survey, an additional calibration is taken before the battery is replaced. The lead analyzer calibration check readings were taken on a Standard Reference Material (SRM) paint film from the National Institute of Standards and Technology (NIST).

In order to obtain a reading, the face of the instrument is pressed flush against the surface to be tested. It is then held in place for the duration of the test. The test is complete when the measurement has reached an acceptable range of accuracy.

Paint determined to be non-detect by XRF analysis was sampled and submitted to the laboratory for further analysis. Paint chips were submitted to Apex Research in Brighton, MI. Apex is an NLLAP (National Lead Laboratory Accreditation Program) accredited laboratory.

Survey Results

The screening results are summarized in Attachment A. The “LBP (yes/no)” column in the table indicates whether the paint on the particular building component meets the Environmental Protection Agency (EPA) regulatory definition of lead-based paint (i.e., 1.0 mg/cm2 or >0.5% by weight). The “LBP or LCP (yes/no)” column in the table indicates whether the paint on the particular component meets the Occupational Health and Safety Administration (OSHA) regulatory definition of a lead containing paint (i.e., greater than 0.01 mg/cm^2). The actual value recorded for the paint is found in the next column (Lead; mg/cm2).

Discussion and Conclusions

Lead-containing and Lead-Based paint was identified on building components. Activities involving the disturbance of painted building materials at this site may entail compliance with one or more of the following Standards, depending upon the scope and intent of work to be performed.

The Construction Industry Standard for Lead (29 CFR 1926.62) applies to employers whose construction activities involve disturbance of lead-containing materials. It establishes a permissible exposure limit (PEL) of 50 micrograms per cubic meter of air (50 ug/m^3) averaged over an eight-hour period. An action level (AL) of 30 ug/m^3 has also been established.

The quantity of lead found in the paint has no bearing on an employer's compliance requirement with the Standard. This is because the Standard requires compliance with an occupational exposure to *airborne* lead concentrations, regardless of the quantity of lead in the paint. Occupational overexposures may occur when using certain work practices on surfaces that contain lead in quantities less than 1.0 mg/cm^2.

Other requirements, such as preliminary exposure assessment, written compliance plan, worker training and medical evaluation are also included in the Standard. An employer may be exempt from many of the Standard's requirements if objective data is available demonstrating that employee exposures for a given activity will not exceed the action limit.

Please note that demolished building components with lead-containing paint can be disposed at a facility licensed to accept construction debris.

For those surfaces that the State of Michigan Lead Abatement Act and Lead Hazard Remediation Rules apply to (i.e., lead content greater than 1.0 mg/cm^2), the rules establish requirements for performing lead abatement activities. Work must be performed by certified lead abatement workers and certified lead abatement supervisors if the work is determined to constitute a lead abatement activity. Lead abatement is defined as "any measure or set of measures designed to permanently remove or cover lead-based paint or lead-based paint hazards. Abatement includes but is not limited to: (1) The removal of paint and dust, the permanent enclosure or encapsulation of lead-based paint, the replacement of painted surfaces or fixtures, or the removal or permanent covering of soil, when lead-based paint hazards are present in such paint, dust or soil; and (2) all preparation, cleanup, disposal, and post-abatement clearance testing activities associated with such measures".

Abatement does not include renovation, remodeling, landscaping or other activities, when such activities are not designed to permanently eliminate lead-based paint hazards, but are designed to repair, restore, or remodel a given structure or dwelling, even though these activities may incidentally result in a reduction or elimination of lead-based paint hazards. Furthermore, abatement does not include interim controls, operations and maintenance activities, or other measures and activities designed to temporarily, but not permanently, reduce lead-based paint hazards.

ATTACHMENT A

Lead-Containing Paint
Screening Results

Summary of Lead Containing/Lead Based Paint Screening Results

Sample Number	Sample Location/Room Designation	Substrate/ Component	Paint Color	XRF Readings (mg/cm^2)	Paint Chip Results (% by weight)	Lead Based Paint (LBP*) or Lead Containing Paint (LCP*)
1 (CAL)	Calibration	NA	NA	1.13	NA	NA
2 (CAL)	Calibration	NA	NA	1.08	NA	NA
3 (CAL)	Calibration	NA	NA	1.10	NA	NA
4 (CAL AVG)	Calibration Average	NA	NA	1.10	NA	NA
5	**FS 29**	**CMU/Wall**	**White**	**0.15**	**NA**	**LCP**
6	**FS 29**	**Drywall/Wall**	**White**	**0.01**	**NA**	**LCP**
7	**FS 29**	**Wood/Door Frame**	**White**	**0.04**	**NA**	**LCP**
8	**FS 29**	**Wood/ Door**	**White**	**0.01**	**NA**	**LCP**
9	**FS 29**	**Metal/ Radiator**	**White**	**0.02**	**NA**	**LCP**
10	**FS 18**	**Metal/ Pipe**	**White**	**0.66**	**NA**	**LCP**
11 (1)	FS 3	Wood/ Door	Blue	0.00	<0.02%	NA
12 (2)	**FS 3**	**Wood/ Window Frame**	**White**	**0.00**	**0.06%**	**LCP**
13	**FS 4**	**Plaster/ Wall**	**White**	**0.26**	**NA**	**LCP**
14	**FS 18**	**CMU/ Wall**	**Cream**	**0.01**	**NA**	**LCP**
15	**FS 18**	**Metal/ Duct**	**Cream**	**0.02**	**NA**	**LCP**
16	**FS 18**	**Metal/ Door Frame**	**Cream**	**0.01**	**NA**	**LCP**
17	**FS 18**	**Metal/ Pannel**	**Cream**	**0.01**	**NA**	**LCP**
18 (3)	FS 24	Wood/ Wall Pannel	Whit	0.00	<0.01%	NA
19	**FS 28**	**Metal/ Pipe**	**Aqua**	**0.01**	**NA**	**LCP**
20 (4)	**FS 28**	**Concrete/ Floor**	**Blue**	**0.00**	**0.02%**	**LCP**
21	**FS 27**	**Metal/ Beam**	**White**	**2.01**	**NA**	**LBP**
22	**FS 29**	**Wood/ Window Frame**	**White**	**0.1**	**NA**	**LCP**
23	**FS 29**	**Wood/ Window Pane**	**White**	**0.10**	**NA**	**LCP**
24	**FS 1**	**Brick/ Wall**	**Cream**	**0.01**	**NA**	**LCP**

Summary of Lead Containing/Lead Based Paint Screening Results

Sample Number	Sample Location/Room Designation	Substrate/ Component	Paint Color	XRF Readings (mg/cm^2)	Paint Chip Results (% by weight)	Lead Based Paint (LBP*) or Lead Containing Paint (LCP*)
25	**FS 1**	**Concrete/ Window Sill**	**Cream**	**0.02**	**NA**	**LCP**
26	**FS 1**	**Metal/ Fence**	**Black**	**0.02**	**NA**	**LCP**
27 (5)	FS 1	Metal/ Door	Cream	0.00	<0.02%	**NA**
28	**FS 1**	**Metal/ Pannel**	**Cream**	**0.02**	**NA**	**LCP**
29 (CAL)	Calibration	NA	NA	1.11	NA	NA
30 (CAL)	Calibration	NA	NA	1.07	NA	NA
31 (CAL)	Calibration	NA	NA	1.07	NA	NA
32 (CAL)	Calibration Average	NA	NA	1.08	NA	NA
33	FS 30 (Attic)	Metal/ Beam	Red	NA	Not Sampled due to elevation	Assumed LCP/LBP
34	FS 30 (Attic)	Metal/ Deck	Red	NA	Not Sampled due to elevation	Assumed LCP/LBP
35	FS 27	Metal/ Deck	White	NA	Not Sampled due to elevation	Assumed LCP/LBP
36	FS 1	Metal/ Windowpane	Black	NA	Not Sampled due to Fense around Window	Assumed LCP/LBP

Summary of Lead Containing/Lead Based Paint Screening Results

Sample Number	Sample Location/Room Designation	Substrate/ Component	Paint Color	XRF Readings (mg/cm^2)	Paint Chip Results (% by weight)	Lead Based Paint (LBP*) or Lead Containing Paint (LCP*)
37	FS 1	Metal/ Window Frame	Black	NA	Not Sampled due to fence around window	Assumed LCP/LBP

Notes:

*LBP is defined by the EPA as 1.0 mg/cm2 or >0.5% by weight
**LCP is defined as >0.01 mg/cm2 or greater than the reporting limit (>0.01% - >0.02% by weight) (any concentration of lead)

ATTACHMENT B

Laboratory Analysis – Paint Chips

Certificate of Analysis - Metals in Paint

Method: EPA SW846-7420M

Project: 5959 Woodward - Limited LBP Survey

Project#: 60545-14

Report to:

Mr. Joe Konrad

Testing Engineers and Consultants, Inc.

1343 Rochester Road

Troy, MI 4083-6015

ARL Report #: 23-L23805

Date Sampled: 10/27/23

Date Received: 10/30/23

Date Analyzed: 10/31/23

Date Reported: 11/02/23

Laboratory ID:	Client ID:	Reporting Limit:	Lead:
L23805-01	LBP-01 Wood-Door-Blue	0.02%	**Pb** - < 0.02%
L23805-02	LBP-02 Wood-Window Frame-Blue	0.02%	**Pb** - 0.06%
L23805-03	LBP-03 Wood-Wall-White	0.01%	**Pb** - < 0.01%
L23805-04	LBP-04 Concrete-Floor-Blue	0.01%	**Pb** - 0.02%
L23805-05	LBP-05 Metal-Door-Cream	0.02%	**Pb** - < 0.02%

Reporting Limit of 0.01% is based on minimum sample weight of 100mg per our SOP, and may vary based on smaller sample size. APEX Research is not responsible for sample collection activities, and results apply to samples as received. Methods have been slightly modified. Samples received in acceptable condition unless otherwise noted. This certificate of analysis relates only to the samples tested and to ensure the integrity of the results, may only be reproduced in full. Liability limited to cost of analysis. APEX Research, Inc. (Laboratory ID# 227441) is accredited by the AIHA Laboratory Accreditation Programs, LLC (AIHA LAP,LLC) in the Environmental Lead Laboratory Accreditation Program for Lead in Paint as documented by the Scope of Accreditation Certificate and associated Scope.

Robert T. Letarte Jr., Laboratory Director

Apex # **L23805**

Testing Engineers and Consultants, Inc.
1343 Rochester Road
Troy, Michigan 4083-6015
Phone: 248.585.6200; Fax 248.585.9519

CHAIN OF CUSTODY

Client Name: Wayne State University
Address: 5454 Cass Avenue
City, St., Zip Detroit, MI 48202

Date of Survey: 10/27/2023
Project Name: 5959 Woodward - Limited LBP Survey
Project Number: 60545-14
Contact Person: see circled below*

TURN AROUND TIME

Rush		24 Hour	
48 Hour	✓	72 Hour	
Other		TTP	

Analytical Method(s) Requested:

Asbestos:	Bulk		Wipe		Pnt. Cnt.		PCM						
Lead:	Bulk		Wipe		Air		Paint	✓	Soil		% By Weight		
Mold:	Bulk		Tape		BioCell		BioSis		Other				
TEM:	AHERA	7400		Bulk/NOB		EPA	Level II						

Lab ID#	Client ID #	Material/Description	Volume/Area/Location	Results
	LBP-01	Wood-Door-Blue		
	LBP-02	Wood-Window Frame-Blue		
	LBP-03	Wood-Wall-White		
	LBP-04	Concrete-Floor-Blue		
	LBP-05	Metal-Door-Cream		

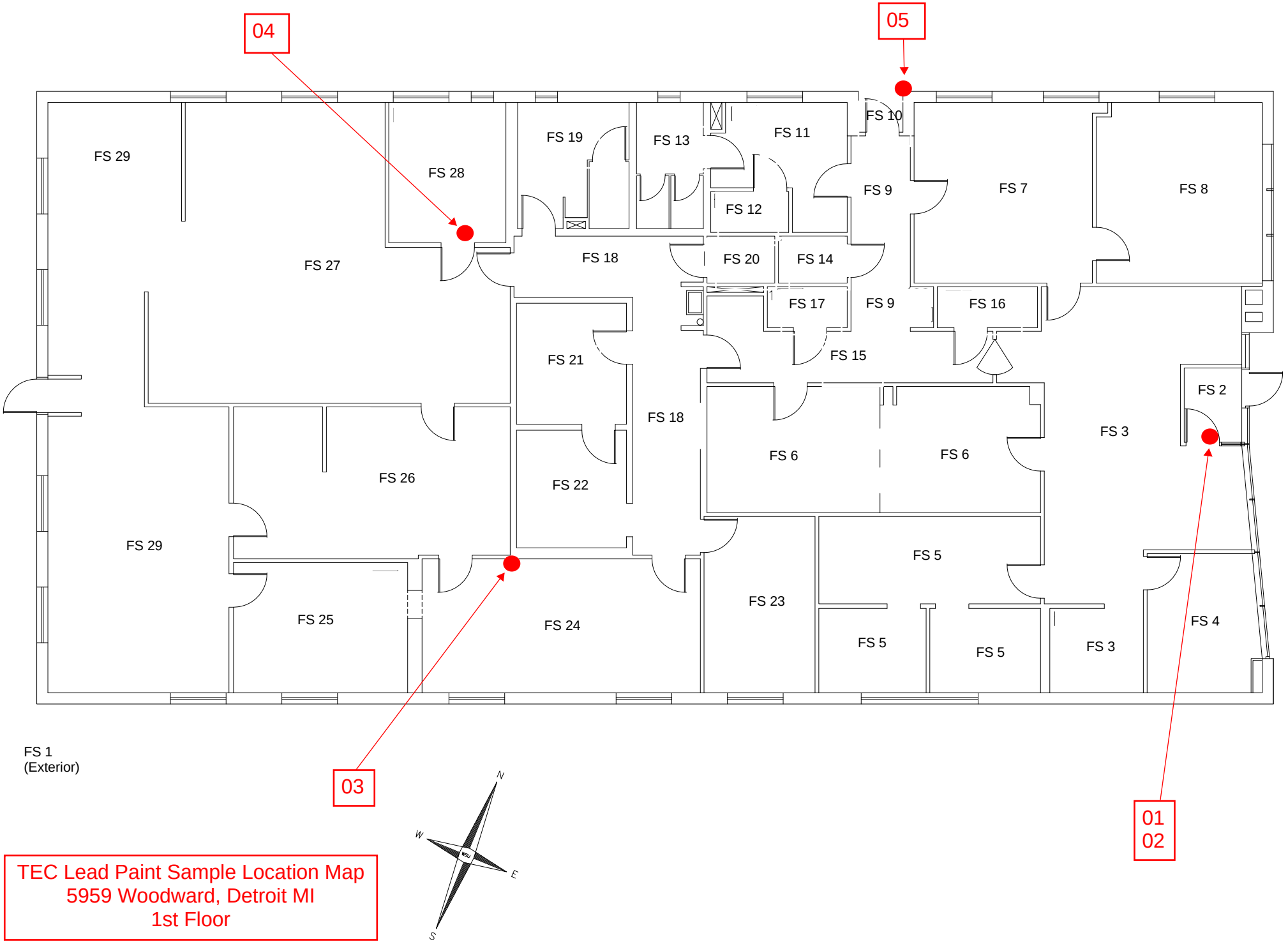
RECEIVED
OCT 30 2023
APEX RESEARCH

Relinquished By: [signature] **Date:** 10/30/2023
Received By: KD **Date:** 11:01
Relinquished By: _____ **Date:** _____
Received By: _____ **Date:** _____

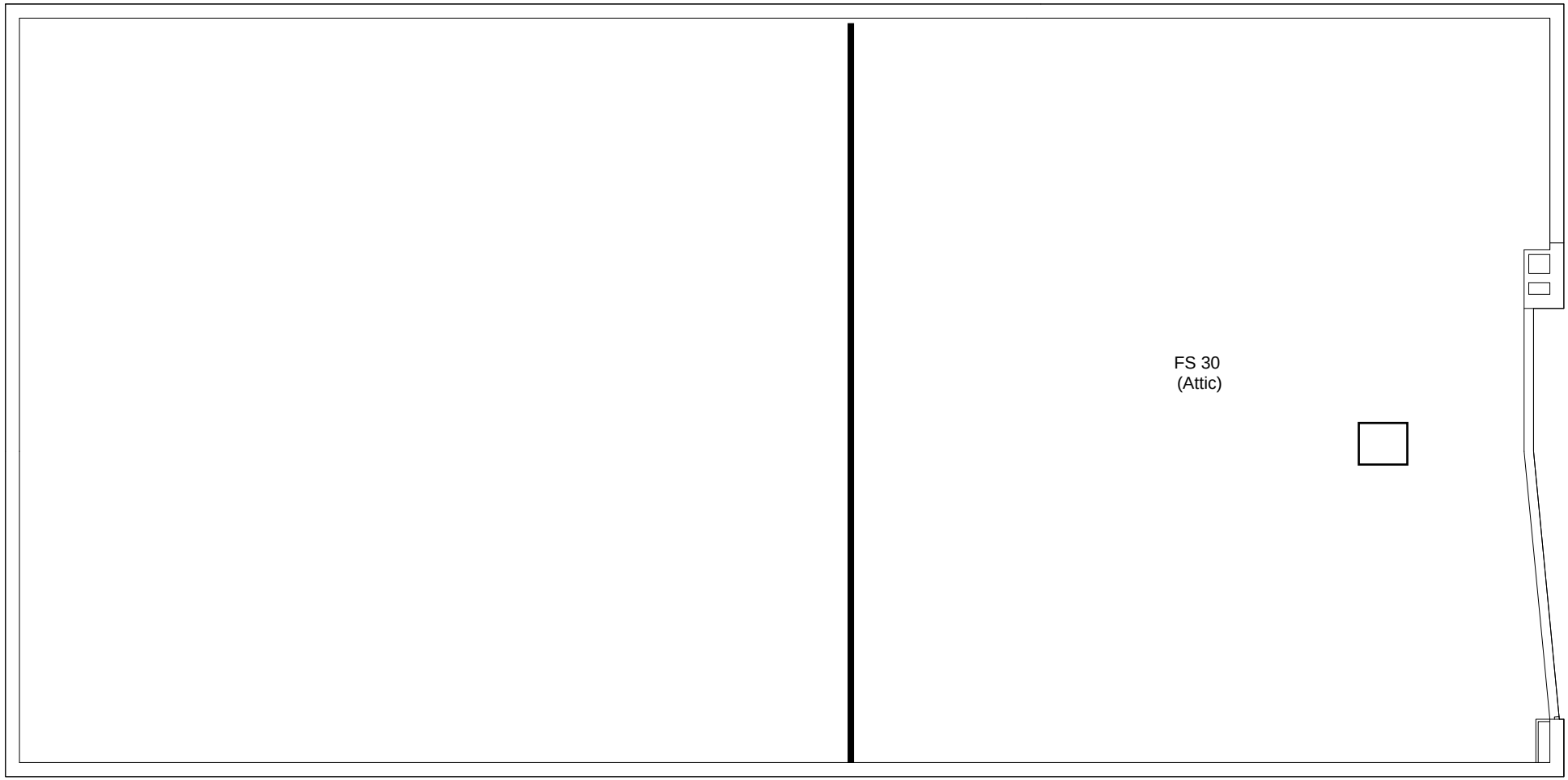
*jkonrad@tectest.com; mkonrad@tectest.com; jlkonrad@tectest.com; jpallach@tectest.com; ekliemann@tectest.com; ihdepartment123456@gmail.com
smarshall@tectest.com

ATTACHMENT C

Paint Chips – Sample Location Map



TEC Lead Paint Sample Location Map
5959 Woodward, Detroit MI
1st Floor



TEC Lead Paint Sample Location Map
5959 Woodward, Detroit MI
Attic