Division of Finance and Business Affairs

Wayne State University

400 Mack - Parking Lot Reconstruction

WSU Project Number 592-411403

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:
Spalding DeDecker
119 State Street, Suite 500
Detroit, MI 48226

July 9, 2025

TABLE OF CONTENTS

INFORMATION FOR BIDDERS

OWNER:	Board of Governors Wayne State University
PROJECT:	**400 Mack - Parking Lot Reconstruction** Project No. **592-411403**
LOCATION:	Wayne State University **400 Mack Avenue, Detroit, MI 48201** 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:	**Spalding DeDecker** **119 State Street, Suite 500** **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: July 9, 2025

BIDDING: Bidding documents may be obtained by vendors from the University Purchasing Web Site at http://go.wayne.edu/bids beginning **July 9, 2025**. 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.

Mandatory Pre-Bid Conference: To participate, it is **Mandatory** that you and/or responsible representatives of your organization attend our pre-bid conference, to be held on **July 16, 2025, 9:00 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
Join the meeting now
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.

Attendance will be taken during the Prebid Meeting.

OPTIONAL Site Visit (if needed): A Site visit may be scheduled at the conclusion of the pre-bid meeting, at the discretion of the project manager. The tentative date for Site Visit is **July 17, 2025 at 11:00 am - Meet on the south side of the building (parking lot surrounds the building)**.

DUE DATE FOR QUESTIONS: Due Date for questions shall be **July 21, 2025 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 **August 5, 2025,** 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 **July 9, 2025**. 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: **400 Mack - Parking Lot Reconstruction**
Project No. **592-411403**

LOCATION: Wayne State University
400 Mack Avenue, Detroit, MI 48201,
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 **August 5, 2025**, 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 **July 9, 2025.** 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 **July 9, 2025** 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.

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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 Mandatory Pre-Bid Conference

PROJECT: **400 Mack - Parking Lot Reconstruction**,

PROJECT NOS.: **WSU PROJECT NO. 592-411403**

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

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
Join the meeting now
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.

Attendance will be taken during the Prebid Meeting.

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 **July 21, 2025,** 12:00 noon.

IV. Minimum Participation

A. If less than 3 individual contractor firms attend the **Mandatory** 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).

B. 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: **August 5, 2025**, 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 August 5, 2025,** 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 **July 9, 2025**.

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: **400 Mack - Parking Lot Reconstruction**

PROJECT NO.: WSU PROJECT NO. **592-411403**

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

EBID MEETING: Did your company attend the **Mandatory** Pre-Bid Conference?
Yes _____ No _____

SE PROPOSAL:

The undersigned agrees to enter into an Agreement to complete the entire work of the **400 Mack - Parking Lot Reconstruction** project (WSU Project No. **592-411403**) in accordance with the Bidding Documents for the following amounts:

_____ $_____ Dollars

Base Bid Estimated working days: _____ (all phases)

ALTERNATES: The following alternates to the base proposal(s) are required to be offered by the respective bidder. The undersigned agrees that the following amounts will be added to or deducted from the base bid as indicated, for each alternate which is accepted.

ALTERNATE NO. C-1:

The undersigned agrees to enter into an agreement to complete the Alternate # 1 work of the _____ project and to provide all labor and material associated with the work in accordance with the Bidding Documents for the following amounts:

(select one) ADD _____ $ _____ Dollars

or

DEDUCT _____ $ _____ Dollars

This alternate includes items noted in the base bid, plus excavation and removal of sufficient base and subgrade materials to install the full pavement section (including new 21AA aggregate base) indicated for Alternate C-1 on sheet C4.1. Work shall also include impact with contaminated soils, disposal of those soils, and following the requirements outlined in the Due Care Plan. The cost indicated for the Alternate C-1 demolition shall be the additional cost over and above the base bid cost.

ALTERNATE NO. C-2:

The undersigned agrees to enter into an agreement to complete the Alternate # 2 work of the _____ project and to provide all labor and material associated with the work in accordance with the Bidding Documents for the following amounts:

(select one) ADD _____ $ _____ Dollars

or

DEDUCT _____ $ _____ Dollars

This alternate includes items noted in the base bid, plus excavation and removal of sufficient base and subgrade materials to install the full pavement section (including new 21AA aggregate base) and the sand subbase indicated for Alternate C-2 on sheet C4.1. Work shall also include impact with contaminated soils, disposal of those soils, and following the requirements outlined in the Due Care Plan.
The cost indicated for the Alternate C-2 demolition shall be the additional cost over and above the base bid cost.

ALTERNATE NO. C-3:

The undersigned agrees to enter into an agreement to complete the Alternate # 2 work of the _____ project and to provide all labor and material associated with the work in accordance with the Bidding Documents for the following amounts:

This alternate includes the installation of conduit for extension of power to future automated gate controls. Work shall also include proper bedding and placement of compacted sand backfill in the conduit trenches, as well as impact with contaminated soils, disposal of those soils, and following the requirements outlined in the Due Care Plan.

(select one) ADD _____ $ _____ Dollars

or

DEDUCT _____ $ _____ Dollars

ALTERNATES:

A. The Alternate Work Items listed on the following pages (as well as on the plans) identify potential changes in the Work under consideration for this Contract. The Owner reserves the right to accept any or all of the listed Alternates, regardless of the order of their listing. Alternate items may also be selected and incorporated into the Project with increased or decreased quantities from those listed, to best suit the Owner's needs.

B. For each of the Alternates listed, state the complete additional price (above the base bid amount) if the individual Alternate is selected for inclusion in the Contract scope. Amount shown shall include all costs to perform the Work; no extras will be permitted for failure to include, but not limited to, such items as: extra permits, overtime, weather protection, materials, labor, supervision, general conditions, overhead, and profit for general contractor and/or subcontractors, shoring, and other related items.

C. Alternates may be accepted by Owner after initial award. Contractor shall hold prices stated below for possible incorporation into the Project at a later date during construction as determined by the Owner. Alternate Work must be accepted in writing by WSU PM prior to beginning any Work.

D. Any additional Temporary Signage, Temporary Barriers, or Traffic Markings required to properly perform any selected Alternate Work shall be incidental, regardless of the amount of Alternate Work selected.

Allowance:

Subgrade Undercutting Allowance –Base Bid – 1,000 CYDS allowance and material to be added in the following amount as per Specification Section 012100. The allowance expenditure must be accounted for and approved **in advance** by WSU and the architect during the construction phase of the project:

$ _____ Dollars

TOTAL BASE PROPOSAL WITH ALLOWANCE:

$ _____ Dollars

Allowance includes excavation and removal from site of unsuitable aggregate base and/or subgrade material, and import, placement, and compaction of 21AA limestone. Allowance is to be included in the contractor's Base Bid cost. Additions, deductions or material substitutions will be made based on the unit pricing provided, with payment to contractor being based on actual quantities and materials used.

UNIT PRICES

(Provide unit prices below for adds/deducts)

Sawcut and remove concrete sidewalk full depth (s.f.)	$ _____
Sawcut and remove concrete curb and gutter (l.f.)	$ _____
Undercut and dispose of existing aggregate base and/or subgrade (c.y.)	$ _____
Backfill and compact undercut area with 21AA limestone (c.y.)	$ _____
Backfill and compact undercut area with 1x3 crushed concrete (c.y.)	$ _____
Backfill and compact undercut area with 21AA crushed concrete (c.y.)	$ _____
Install geotextile fabric for undercutting (s.y.)	$ _____
Install geogrid (Tensar TriAx) for undercutting (s.y.)	$ _____
6" concrete curb and gutter (l.f.)	$ _____
4" concrete sidewalk (s.f.)	$ _____
6" concrete sidewalk (s.f.)	$ _____
6" concrete sidewalk with thickened edge (s.f.)	$ _____
Install concrete bollard (each)	$ _____
Install 6" linear HDPE underdrain underneath pavement (l.f.)	$ _____

DESCRIPTION OF ABBREVIATIONS:

L.F. = Lineal Feet L.S. = Lump Sum
Ea. = Each S.F. = Square Feet
C.Y. = Cubic Yard Incidental = Not a separate pay item

UNIT PRICES:

The following schedules of unit prices shall be filled out and submitted as part of the Proposal. Failure to fill in all unit prices may result in disqualification of Bidder.

Unit prices stated by Bidder shall include all materials and Work installed and completed in place in accordance with all applicable portions of the Drawings and Specifications, and shall include all costs associated with such items including, but not limited to: materials, labor, supervision, overhead, and profit for General Contractor and/or subcontractors, general conditions, permits, shoring, and other related items.

Each Bidder is responsible for verifying all quantities and shall base his Bid thereon.

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.).

LIST OF SUBCONTRACTORS Contractor shall fill in following table listing ALL proposed subcontractors.

LIST OF SUBCONTRACTORS / INSTALLERS

WORK SCOPE:	COMPANY:
_______________________________	_______________________________
_______________________________	_______________________________
_______________________________	_______________________________
_______________________________	_______________________________
_______________________________	_______________________________

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 **December 15, 2025.**

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 **$500.00 per day**, and therefore the contractor shall pay as liquidated damages to the Owner the sum of **$500.00 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):

_____

_____

Local, Michigan Based, and Small Business Spend: In addition, please let us know if any of the following apply to your company

- Detroit Based Company _____
- Metro Detroit Based Company _____
- Michigan Based Company _____
- Certified Small Business _____

A Certified Small Businesses are those that have registered as such with the US General Services Administration. Information on how to register can be found on their website at https://www.gsa.gov/sell-to-government/step-2-compete-for-a-contract/certify-as-a-small-business.

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 ninety (90) 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 employment practices 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 local business, such as Detroit or Michigan based, 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 its level of spend with geographically local suppliers and certified small businesses. This includes 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. **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.

2. **Certified Small Business:** Certified Small Businesses are those that have registered as such with the US General Services Administration. Information on how to register can be found on their website at https://www.gsa.gov/sell-to-government/step-2-compete-for-a-contract/certify-as-a-small-business.

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**

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 – PLEASE NOTE

- Each Pay Application is to be organized into the sections below; Payment Application, Sworn Statements, Certified Payroll, and Additional Supporting Documentation.
- These Documents are to be combined into a single PDF document, and is not to be combined with other Pay Applications.

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. 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.

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 Local, Michigan Based, and Small Business Business Participation

The University makes a continuous effort to strongly encourage use of local, Michigan based, and small business contractors and suppliers 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 Detroit-based, Metro Detroit-Based, and Michigan-based or Certified Small Business Subcontractors and suppliers of goods and services in connection with performance of this Contract. Certified Small Businesses are those that have registered as such with the US General Services Administration. Information on how to register can be found on their website at https://www.gsa.gov/sell-to-government/step-2-compete-for-a-contract/certify-as-a-small-business.

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 Affairs 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 Affairs Wayne State University (VPFBA).

8.10.2 Review by Vice-President for Finance and Business Affairs

The Vice-President for Finance and Business Affairs (VPFBA) 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 VPFBA shall render a decision within forty-five days of the completion of any submissions by the parties. The decision of the VPFBA 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: _____ Signature	by: _____ signature
Name: _____ Print or type name here	Name: Bethany Gielczyk
Title: _____	Title: Senior Vice President for Finance and Business Affairs; Chief Financial Officer; Treasurer
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 Affairs - The Vice President of Finance and Business Affairs 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 equal opportunity employer. The University has a strong commitment to the principle of equal opportunity 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 Affairs.

7.09.3 Review Vice-President of Finance and Business Affairs

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 Affairs 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 Affairs 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 Affairs 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.

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The Technical Specifications dated **July 9, 2025** 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

PROJECT: 400 Mack - Parking Lot Reconstruction

WSU PROJECT NO.: 592-411403

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 **Reconstruct the parking lot. This includes select curb repairs, reconstruction of ADA entrance into building, salvage and reinstallation of existing light poles, infrastructure for future card readers, reconstruction of main pedestrian pathway in parking area, and reconstruction of curbs around islands.**.

3. The building is located at

   Wayne State University
   400 Mack Avenue, Detroit, MI 48201
   Detroit, Michigan 48202

WAYNE STATE UNIVERSITY
400 MACK AVENUE PARKING LOT RECONSTRUCTION

PROJECT PLANS AND TECHNICAL SPECIFICATIONS:

The following construction plans are included as part of the bid and contract documents for this project:

C1.0 – COVER
C2.1 – TOPOGRAPHIC SURVEY
C3.1 – DEMOLITION PLAN
C4.1 – PAVING PLAN
C4.2 – PAVING DETAILS
C5.1 – GRADING
C6.1 – SOIL EROSION AND SEDIMENTATION CONTROL PLAN

The following Technical Specifications are included as part of the bid and contract documents for the project:

31 1000 - Site Clearing
31 1012 - Fine Grading
31 1018 - Soil Erosion Control
31 2000 - Earth Moving
32 1216 - Hot-Mix Asphalt Concrete Paving
32 1313 - Cement Concrete Pavements, Curbs and Gutters
32 1415 - Pavement Marking
33 4100 - Storm Sewers, Underdrains and Drainage Structures

31 1000 - SITE CLEARING

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.

B. CAD files will be made available for use in construction staking. Contact the engineer regarding applicable fee and requirements for signing of the CAD File Transfer Agreement.

1.2 SUMMARY

A. This Section includes the following:

1. Protecting existing trees, shrubs and other vegetation to remain.
2. Removing existing trees, shrubs and other vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above-grade and below-grade site improvements.
6. Disconnecting, capping or sealing, and abandoning site utilities in place or removing site utilities.
7. Temporary erosion and sedimentation control measures.

B. Related Sections include the following:

1. Division 31 2000 Section "Earth Moving" for soil materials, excavating, backfilling, and site grading.

1.3 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other nonsoil materials.

B. Tree Protection Zone: Area surrounding individual trees or groups of trees to be protected during construction, and defined by the drip line of individual trees or the perimeter drip line of groups of trees, unless otherwise indicated.

1.4 MATERIAL OWNERSHIP

A. Except for stripped topsoil or other materials indicated to remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site unless otherwise noted on the plans.

1.5 SUBMITTALS

A. Photographs or videotape, sufficiently detailed, of existing conditions of trees and plantings, adjoining construction, and site improvements that might be misconstrued as damage caused by site clearing.

B. Record drawings, according to Division 01 7700 Section "Closeout Procedures."

1. Identifying and accurately locating capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.6 QUALITY ASSURANCE

A. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 3100 Section "Project Management and Coordination."

1.7 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by owner or authorities having jurisdiction.

B. Salvable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises where indicated.

C. Utility Locator Service: Notify utility locator service for area where Project is located before site clearing.

D. Do not commence site clearing operations until temporary erosion and sedimentation control measures are in place.

PART 2 - PRODUCTS

2.1 SOIL MATERIALS

A. Satisfactory Soil Materials: Requirements for satisfactory soil materials are specified in Division 31 2000 Section "Earth Moving."

1. Obtain approved borrow soil materials off-site when satisfactory soil materials are not available on-site. Contractor is responsible for doing an independent earthwork computation and including all necessary import and/or export of materials in their bid.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction. If said points will be disturbed, establish new points prior to removal.

B. Locate and clearly flag trees and vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion and sedimentation control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction and the sediment and erosion control drawings, whichever is more stringent.

B. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

C. Remove erosion and sedimentation controls only after all areas are restored and stabilized.

3.3 TREE PROTECTION

A. Erect and maintain temporary fencing around tree protection zones before starting site clearing. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within fenced area.
2. Do not permit vehicles, equipment, or foot traffic within fenced area.
3. Maintain fenced area free of weeds and trash.

B. Do not excavate within tree protection zones, unless otherwise indicated.

C. Where excavation for new construction is required within tree protection zones, hand clear and excavate to minimize damage to root systems. Use narrow-tine spading forks, comb soil to expose roots, and cleanly cut roots as close to excavation as possible.

1. Cover exposed roots with burlap and water regularly.
2. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.
3. Coat cut faces of roots more than 1-1/2 inches in diameter with emulsified asphalt or other approved coating formulated for use on damaged plant tissues.
4. Backfill with soil as soon as possible.

D. Repair or replace trees and vegetation indicated to remain that are damaged by construction operations, in a manner approved by Architect.

3.4 UTILITIES

A. Owner will arrange for disconnecting and sealing indicated utilities that serve existing structures before site clearing, when requested by Contractor.

1. Verify that utilities have been disconnected and capped before proceeding with site clearing.

B. Locate, identify, disconnect, and seal or cap off utilities indicated to be removed.

1. Arrange with utility companies to shut off indicated utilities.
2. Owner will arrange to shut off indicated utilities when requested by Contractor.

C. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect not less than two days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

D. Excavate for and remove underground utilities indicated to be removed.

E. Removal of underground utilities is included in Division 33 Sections “Common Work Results for Utilities.” for covering site utilities.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, grass, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Cut minor roots and branches of trees indicated to remain in a clean and careful manner where such roots and branches obstruct installation of new construction.
3. Grind stumps and remove roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.
4. Use only hand methods for grubbing within tree protection zone.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil to whatever depths are encountered in a manner to prevent intermingling with underlying subsoil or other waste materials.

1. Remove subsoil and nonsoil materials from topsoil, including trash, debris, weeds, roots, and other waste materials.

C. Stockpile topsoil materials away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile topsoil material in locations approved by the Owner or Architect.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut length of existing pavement to remain before removing existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain to prevent corrosion.

3.8 DISPOSAL

A. Disposal: Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, other vegetation and waste materials including trash and debris, and legally dispose of them off Owner's property.

1. Burning of materials on project property is prohibited.

END OF SECTION 31 1000

31 1012 - FINE GRADING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Attention is directed to Bidding and Contract Requirements, and General and Supplemental Requirements which are hereby made a part of this section.

B. CAD files will be made available for use in construction staking. Contact the engineer regarding applicable fee and requirements for signing of the CAD File Transfer Agreement.

1.2 SUMMARY

A. Work included: All labor, materials, necessary equipment and services to complete the Fine Grading work, as indicated on the drawings, as specified herein or both, except as for items specifically indicated as not in contract on the plans.

B. Related work specified elsewhere:

1. Division 31 2000 Section “Earth Moving.”
2. Division 32 9200 Section “Turfs and Grasses.”

1.3 SITE INSPECTION

A. The Contractor shall visit the site and acquaint himself with all existing conditions. The Contractor shall be responsible for his own subsurface investigations, as necessary, to satisfy requirements of this Section. All subsurface investigations shall be performed only under time schedules and arrangements approved in advance by the landscape Architect or Owner's Representative.

1.4 UTILITIES

A. Before starting site operations verify that the earlier Contractors have disconnected all temporary utilities which might interfere with the fine grading work.

B. Locate all existing, active utility lines traversing the site and determine the requirements for their protection. Preserve in operating condition all active utilities adjacent to or transversing the site that are designated to remain.

C. Observe rules and regulations governing respective utilities in working under requirements of this section. Adequately protect utilities from damage, remove or relocate as indicated, specified or required. Remove, plug or cap inactive or abandoned utilities encountered in excavation. Record location of active utilities.

D. Contact “Miss Dig” for existing utilities survey confirmation.

1.5 QUALITY ASSURANCE

A. Requirements of all applicable building codes and other public agencies having jurisdiction upon the work.

B. Primary emphasis should be given to the aesthetic appearance and functioning of berming and swales, as directed by the Landscape Architect or Owner's Representative. The Contractor shall employ skilled personnel and any necessary equipment to insure that finish grading is smooth, aesthetically pleasing, drains well and is ideal for receiving sod and plant materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Existing Soil:

1. Strip existing topsoil for new construction unless otherwise directed by Owner's Representative, free from debris, sod, biodegradable materials and other deleterious materials. The Contractor shall insure that all existing soil has sufficient percolation and surface drainage to support grasses and plant material and that extreme compaction occurs only in areas to receive paving.
2. In areas to receive seed, verify that soil is scarified to depth of 3 inches and that soil contains enough organic matter to support and encourage rooting of seeded lawn.

PART 3 - EXECUTION

3.1 EXAMINATION

B. Job Conditions

1. Dust control: Use all means necessary to prevent dust from construction operations from being a nuisance to adjacent property owners and from damaging finish surfaces on adjacent building, paving, etc. Methods used for dust control are subject to approval by the Architect or Owner's Representative.
2. Burning: On-site burning will not be permitted.
3. Protection: Use all means necessary to protect curbs, gutters, sprinklers, utilities and vegetation designated to remain, and, in the event of damage, immediately make all repairs, replacements and dressings to damaged plants necessary to the approval of the Landscape Architect. Contractor shall incur all cost for the replacement of damaged objects and vegetation.

3.2 SCHEDULING

A. Schedule all work in a careful manner with all necessary consideration for adjoining property owners and the public.

B. Coordinate schedule with other Contractors to avoid conflicts with their work.

3.3 EXCAVATION

A. Excavate where necessary to obtain subgrades, percolation and surface drainage as required.

B. Materials to be excavated are unclassified.

C. Remove entirely any existing obstructions after approval by the Architect's or Owner's Representative.

D. Remove from site and dispose of debris and excavated material not required.

3.4 GRADING

A. The Contractor shall establish finished grades as shown on the construction plans and as directed by the Architect, including areas where the existing grade has been disturbed by other work.

B. Finished grading shall be smooth, aesthetically pleasing, drain well and ready to receive sod and other plant material to full satisfaction of the Owner's Representative, Architect and Construction Manager.

3.5 COMPACTION

A. Compact each layer of fill in designated areas with approved equipment to achieve a maximum density at optimum moisture, AASHTO T 180 - latest edition.

1. Under buildings, roadways, curbs, walks and other paved areas: compaction shall be to 95% of maximum density.
2. Under landscaped area, compaction shall not exceed 85% of maximum density.

B. No backfill shall be placed against any masonry or other exposed building surface until permission has been given by the Owner's Representative, and in no case until the masonry has been in place seven days.

C. Compaction in limited areas shall be obtained by the use of mechanical tampers or approved hand tampers. When hand tampers are used, the materials shall be deposited in layers not more than four inches thick. The hand tampers used shall be suitable for this purpose and shall have a face area of not more than 100 square inches. Special precautions shall be taken to prevent any wedging action against masonry or other exposed building surfaces.

3.6 CORRECTION OF GRADE

A. Bring to required grade levels areas where settlement, erosion or other grade changes occur. Adjust grades as required to carry drainage away from buildings and to prevent ponding around the buildings and on pavements.

B. Remove all rock or objectionable material larger than 1 inch in any direction prior to commencing landscaping.

C. Contractor shall be responsible for stabilizing grades by approved methods prior to landscaping, and shall be responsible for correction of grades as mentioned above, and clean up of any wash outs or erosion.

END OF SECTION 31 1012

31 1018 - SOIL EROSION CONTROL

PART 1 - GENERAL

1.1 RELATED REQUIREMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

B. CAD files will be made available for use in construction staking. Contact the engineer regarding applicable fee and requirements for signing of the CAD File Transfer Agreement.

1.2 SUMMARY

A. The work under this Section includes, but not limited to all work necessary for effective soil erosion control in conformance with Part 91, Act 451, PA 1994, the Soil Erosion and Sedimentation Control Act, Michigan Department of Natural Resources Environmental Protection Act guidelines and all pertinent local enforcing agency rules and regulations, having jurisdiction.

B. Related Sections include the following:

1. Division 31 2000 Section “Earth Moving.”

1.3 STANDARDS

A. General: Perform all work under this Section in accordance with all pertinent rules and regulations, including, but not necessarily limited to those mentioned above and these Specifications.

B. Conflicts: Where provisions of pertinent rules and regulations conflict with these Specifications, the more stringent provisions shall govern.

PART 2 - PRODUCTS

2.1 SEED, FERTILIZER, MULCH

A. Refer to other Specification Section in Part 3.

PART 3 - EXECUTION

3.1 GENERAL

A. Standards: Provide all materials and promptly take all actions necessary to achieve effective erosion control in accordance with the Soil Erosion and Sedimentation Control Act, Michigan Department of Natural Resources guidelines, local enforcing agency guidelines and these Specifications.

B. Site evaluation: Prior to start of the Work, conduct a field evaluation of the site along with representatives of the Engineer/Architect and the local enforcing agency.

C. Permits: Contractor is responsible for obtaining all pertinent permits including a Soil Erosion Control Permit if required from the county or local enforcing agency. Submit the NPDES Notice of Coverage when the soil erosion permit is received if not already done.

3.2 SEEDING AND MULCHING

A. General

1. All bare soil, unless otherwise required by the Contract Documents, shall be seeded, fertilized and mulched to create a protected condition. Use seed mix as indicated on the plans (if different seed mixes are indicated on the civil and landscape plans, the mix indicated on the landscape plans shall override). Critical areas shall be sodded as approved by the Engineer/Architect and as shown on the plans.
2. Seeding and mulching shall be performed immediately upon completion of a phase or section of the Work or as approved by the Engineer/Architect.
3. In all cases, seeding and mulching shall be performed within thirty (30) calendar days from the time the area was first disturbed.
4. During any period of time which the soil is unprotected, provide erosion control structures as necessary to minimize erosion and to keep any eroded soils on the site and out of ditches, rivers, storm sewers and wetlands.
5. Refer to the plans for notes regarding the use of turf reinforcement matting and/or mulch blankets (on all slope exceeding 1 vertical to 10 horizontal).

B. Seed: Seed shall be applied uniformly at a minimum rate of 48 pounds per acre.

C. Fertilizer: Fertilizer shall be applied uniformly at a minimum rate of 250 pounds per acre.

D. Mulch: Mulch shall be uniformly applied at a rate of two (2) tons per acre, or equal, on all seeded areas that have a slope of less than 1 vertical to 10 horizontal. Refer to note A5. above for additional slope stabilization requirements.

3.3 DITCH AND RIVERS

A. When reasonably possible, banks of ditches and rivers disturbed under this Work shall be protected within 24 hours of disturbance, but in no case shall banks be left unprotected more than 7 calendar days.

3.4 STEEP SLOPES

A. Emulsion

1. On slopes greater than 10%, use erosion control blankets or turf reinforcement matting to hold seed in place. Refer to plan notes.

B. Other methods: Chemical self-adhering mulch and other mulch anchoring methods may be used as approved by the Engineer/ Architect.

3.5 SITE IMPROVEMENTS CONSTRUCTION

A. During construction of the site improvements 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. Provide ground cover, even if only temporary, so as to stabilize an area and minimize erosion.
4. As much as practicable, direct storm water away from the construction area. Direct diverted storm water to any stable area.
5. Collect runoff from the site in sediment basins, traps or through filters.
6. Establish an inspection and maintenance schedule, paying special attention to the beginning of the various stages of construction. Employ a certified storm water operator and keep a log of the soil erosion and sedimentation control measures in accordance with the NPDES requirements.
7. Keep in mind that the primary objective is to keep the soil on the site.
8. Once final stabilization of the site is complete, and the governing agency has granted its approval, remove all temporary erosion control structures.
9. Control site runoff during all periods of site construction to ensure that excess surface runoff does not reach adjacent properties. This is especially critical during stages when the land has been stripped but not yet graded.

3.6 CLEANING

A. Perform cleaning of all areas affected by work under this section and leave the site in a neat and tidy state. Contractor shall keep Adjacent Roads clean and free of debris.

END OF SECTION 31 1018

31 2000 – EARTH MOVING

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.

B. All earthwork operations shall confirm to the current Michigan Department of Transportation standards and specifications.

C. CAD files will be made available for use in construction staking. Contact the engineer regarding applicable fee and requirements for signing of the CAD File Transfer Agreement.

1.2 SUMMARY

A. This Section includes the following:

1. Preparing subgrades for slabs-on-grade, walks, pavements, lawns, and plantings.
2. Subbase course for concrete walks and pavements.
3. Base course for asphalt paving.
4. Excavation and backfill for utility trenches.

B. Related Sections include the following:

1. Division 31 1000 Section "Site Clearing" for site stripping, grubbing, removing topsoil, and protecting trees to remain.
2. Division 32 9200 Section “Turfs and Grasses” for finished and fine grading, including placing and preparing topsoil for lawns and plantings.
3. Division 33 4100 Section “Storm Sewers, Underdrains, and Drainage Structures” for storm drainage system.

1.3 DEFINITIONS

A. Backfill: Soil materials used to fill an excavation.

B. Base Course: Layer placed between the subbase course and asphalt paving.

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

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

E. Drainage Course: Layer supporting slab-on-grade used to minimize capillary flow of pore water.

F. Engineered Fill: Fill placed and compacted to densities specified herein, in a controlled manner using lift thickness limited herein, monitored and tested by the Testing Agency or independent Geotechnical Inspector.

G. Excavation: Removal of material encountered above subgrade elevations.

H. Fill: Soil materials used to raise existing grades.

I. Rock: Rock material in beds, ledges, unstratified masses, and conglomerate deposits and boulders of rock material 3/4 cu. yd. (0.57 cu. m) or more in volume.

J. Structures: Buildings, footings, foundations, retaining walls, slabs, tanks, curbs, mechanical and electrical appurtenances, or other man-made stationary features constructed above or below the ground surface.

K. Subbase Course: Layer placed between the subgrade and base course for asphalt paving, or layer placed between the subgrade and a concrete pavement or walk.

L. Subgrade: Surface or elevation remaining after completing excavation, or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.

M. Undercutting: Necessary excavation of poor quality soils which occur below the existing Topsoil and any uncontrolled fill soils as described in the Geotechnical Investigation.

N. Utilities include on-site underground pipes, conduits, ducts, and cables, as well as underground services within buildings.

1.4 SUBMITTALS

A. Product Data: For the following:
1. Drainage fabric if required for the project .
2. Separation fabric if required for the project.

B. Test Reports: Testing Agency shall submit the following reports directly to the architect and shall copy the contractor:

1. Analysis of soil materials, whether procured on or off site, and including fill, backfill, and borrow materials.
2. In-place density test reports.
3. Moisture-density relationship test reports.
4. Compressive strength or bearing test reports.

C. Material Test Reports: Interpreting test results for compliance of the following with requirements indicated:

1. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.

1.5 QUALITY ASSURANCE

A. Testing Agency Services

1. The Owner will secure and pay for the services of a qualified, independent geotechnical engineer to classify existing soil materials, to recommend and to classify proposed borrow materials when necessary, to verify compliance of materials with specified requirements, and to perform required field and laboratory testing. Geotechnical engineer shall be acceptable to the architect and the owner and shall be licensed to practice in the state in which the project is located.

B. Pre-excavation Conference: Conduct conference at Project site to comply with requirements in Division 01 3100 Section "Project Management and Coordination" for meetings.

1.6 PROJECT CONDITIONS

A. Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted in writing by Architect or Owner and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than three (3) calendar days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's or Owner's written permission.
3. Contact utility-locator service for area where Project is located before excavating.

B. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies to shut off services if lines are active.

PART 2 – PRODUCTS

2.1 SOIL MATERIALS

A. General: Provide borrow soil materials without additional cost to Owner when sufficient satisfactory soil materials are not available from excavations. Contractor is responsible for doing an independent earthwork calculation and including any import of appropriate fill material required to bring the site to the proposed grades.

B. Satisfactory Soil Material (ASTM D 2487): Free of stones larger than 2 inches in any dimension, trash, debris, organic material, other objectionable material and classified as follows:

1. GP (poorly graded gravel).
2. GM (silty gravel).
3. GC (clayey gravel).
4. SW (well-graded sand).
5. SP (poorly graded sand).
6. SM (silty sand).

C. Unsatisfactory Soil Material (ASTM D 2487):

1. SC (clayey sand).
2. CL (lean clay).
3. ML (silt).
4. OL (organic clay).
5. OL (organic silt).
6. CH (fat clay).
7. MH (elastic silt).
8. OH (organic clay).
9. OH (organic silt).
10. PR (peat).

D. Backfill and Fill: Satisfactory soil materials.

E. Subbase: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; Generally either an MDOT Class II sand or 21AA gravel will meet this requirement.

F. Base: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; Generally either an MDOT Class II sand or 21AA gravel will meet this requirement.

G. Engineered Fill: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; ASTM D 2940; Generally either an MDOT Class II sand or 21AA gravel will meet this requirement.

1. Clean granular fill meeting MDOT Class II grading requirements.
2. On-site granular deposits within the excavation can be used as engineered fill if approved by the geotechnical engineer and if selective excavation procedures are employed to manage existing clay deposits.
3. Import fill as required to make-up volumes necessary to raise the building site.

H. Bedding: Naturally or artificially graded mixture of natural or crushed gravel, crushed stone, and natural or crushed sand; Generally either an MDOT 3G, 5G, 6A, or 34R will meet this requirement. Bedding requirements of the agencies having jurisdiction over the utility installation take precedence over these specifications.

I. Drainage Fill: Washed, narrowly graded mixture of crushed stone, or crushed or uncrushed gravel; ASTM D 448; Generally either an MDOT 6A or 34R will meet this requirement. Refer to the plans for specific requirements.

J. Impervious Fill: Clayey gravel and sand mixture capable of compacting to a dense state.

2.2 ACCESSORIES

A. Drainage Fabric: Nonwoven geotextile, specifically manufactured as a drainage geotextile; made from polyolefins, polyesters, or polyamides; with minimum properties determined according to ASTM D 4759 and referenced standard test methods.

B. Separation Fabric: Woven geotextile, specifically manufactured for use as a separation geotextile; made from polyolefins, polyesters, or polyamides; with minimum properties determined according to ASTM D 4759 and referenced standard test methods.

PART 3 – EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.

C. Provide erosion-control measures approved by agency having jurisdiction to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 EXPLOSIVES

A. Explosives: Explosives are prohibited for use on the Project site.

3.4 EXCAVATION, GENERAL

A. General: Excavation includes the removal of any materials necessary to achieve the required subgrade elevations and includes reuse or disposal of such materials.

B. Unnecessary Excavation: The expense of excavation of materials outside of limits indicated or ordered in writing by the architect and the correction thereof to the satisfaction of the architect shall be borne by the contractor.

1. Unnecessary excavation under footings: Either deepen footings to bear on actual subgrade elevation without changing top elevations or place concrete fill up to required elevation, as required by the architect.
2. Unnecessary excavation other than under footings: Either place compacted fill or otherwise correct conditions, as required by the architect.

C. Approval of Subgrade: Notify the Testing Agency when required elevations have been reached.

1. When required by the architect due to the unforeseen presence of unsatisfactory materials or other factors, perform additional excavation and replace with approved compacted fill material in accordance with the architect's or geotechnical engineer's instructions.
2. Payment for unforeseen additional work will be made in accordance with established unit prices or, if none, in accordance with provisions for changes in the work. No payment will be made for correction of subgrades improperly protected against damage from freeze-thaw or accumulation of water, or for correction of otherwise defective subgrades.

D. Excavation Stabilization: Slope faces of excavations to maintain stability in compliance with requirements of governing authorities. Do not use shoring and bracing where faces can be sloped.

3.5 EXCAVATION FOR STRUCTURES

A. Do not proceed with excavations for building structures until Subgrade Preparation operations are complete and tested.

B. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch (25 mm). Extend excavations a sufficient distance from structures for placing and removing concrete formwork, for installing services and other construction, and for inspections.

1. Excavations for Footings and Foundations: Do not disturb bottom of excavation. Excavate by hand to final grade just before placing concrete reinforcement. Trim bottoms to required lines and grades to leave solid base to receive other work.
2. Pile Foundations: Stop excavations from 6 to 12 inches (150 to 300 mm) above bottom of pile cap before piles are placed. After piles have been driven, remove loose and

displaced material. Excavate to final grade, leaving solid base to receive concrete pile caps.

3. Excavation for Underground Tanks, Basins, and Mechanical or Electrical Utility Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch (25 mm). Do not disturb bottom of excavations intended for bearing surface.

C. Coordinate excavations with Dewatering operations as required to allow construction of foundations to dry.

3.6 EXCAVATION FOR WALKS AND PAVEMENTS

A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

3.7 EXCAVATION FOR UTILITY TRENCHES

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

B. Excavate trenches to uniform widths to provide a working clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches (300 mm) higher than top of pipe or conduit, unless otherwise indicated.

C. Trench Bottoms: Excavate and shape trench bottoms in accordance with the plans and standard details. Excavate trenches a minimum 4 inches (100 mm) deeper than bottom of pipe elevation to allow for bedding course (excavate deeper as required by the regulating agency). Hand excavate for bell of pipe. Remove projecting stones and sharp objects along trench subgrade.

1. Excavate trenches a minimum 4 inches (100 mm) deeper than bottom of pipe elevation to allow for bedding course (excavate deeper as required by the regulating agency). Hand excavate for bell of pipe. Remove projecting stones and sharp objects along trench subgrade. Provide bedding course per the plan notes and/or details.

3.8 SUBGRADE PREPARATION AND INSPECTIONS

A. Perform mass earthwork operations to remove all existing topsoil and other organic materials in their entirety within the footprint of the proposed building and pavement areas. Buried objects should be removed in their entirety.

B. Notify Testing Agency when excavations have reached required subgrade elevations.

C. Proof-roll subgrade in the presence of the Testing Agency to identify soft pockets and areas of excess yielding. Do not proof-roll wet or saturated subgrades.

1. Completely proof-roll subgrade in one direction repeating proof-rolling in direction perpendicular to the first direction. Limit vehicle speed to 3 mph.
2. Proof-roll subgrade with heavy pneumatic-tired equipment or loaded 10-wheel, tandem-axle truck weighing not less than 15 tons.
3. Excavate soft spots, unsatisfactory soils, and areas of excessive pumping or rutting, as determined by the Testing Agency, and replace with engineered fill as directed.

D. If Testing Agency determines that unsatisfactory soil is present, continue excavations and replace with compacted backfill or fill materials as directed.

1. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.

E. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities.

3.9 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill may be used at no additional cost to the Owner.

3.10 STORAGE OF SOIL MATERIALS

A. Stockpile borrow materials and satisfactory excavated soil materials. Stockpile soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

3.11 BACKFILL

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

1. Construction below finish grade including, where applicable, dampproofing, waterproofing, and perimeter insulation.
2. Surveying locations of underground utilities for record documents.
3. Inspecting and testing underground utilities.
4. Removing concrete formwork.
5. Removing trash and debris.
6. Removing temporary shoring and bracing, and sheeting.
7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

3.12 UTILITY TRENCH BACKFILL

A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

B. Place and compact initial backfill of subbase material, free of particles larger than 1 inch (25 mm), to a height of 12 inches (300 mm) over the utility pipe or conduit. All pipe backfill to be done according to the details shown on the plans or the requirements of the regulating agency.

C. Fill voids with approved backfill materials while shoring and bracing, and as sheeting is removed.

3.13 FILL

A. Preparation: Remove vegetation, topsoil, debris, unsatisfactory soil materials, obstructions, and deleterious materials from ground surface before placing fills.

B. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

C. Place and compact fill material in layers to required elevations as follows:

1. Under grass and planted areas, use satisfactory soil material.
2. Under walks and pavements, use satisfactory soil material as long as the geotechnical engineer deems the material to be suitable and the compaction requirements can be met.
3. Under steps and ramps, use engineered fill.
4. Under building slabs, use engineered fill.
5. Behind walls, use engineered drainage fill.
6. Under footings and foundations, use engineered fill.
7. Over excavated areas, use engineered fill or lean concrete.

3.14 MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within two (2) percent of optimum moisture content.

1. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice.

3.15 COMPACTION OF BACKFILLS AND FILLS

A. Place backfill and fill materials in layers not more than 8 inches (200 mm) in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches (100 mm) in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact soil to not less than the following percentages of maximum dry unit weight according to ASTM D 698 and ASTM D 1557:

1. Under structures, building slabs, steps, and pavements, scarify and recompact top 12 inches (300 mm) of existing subgrade and each layer of backfill or fill material at 95 percent.
2. Under walkways, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 95 percent.
3. Under lawn or unpaved areas, scarify and recompact top 6 inches (150 mm) below subgrade and compact each layer of backfill or fill material at 88 percent.

3.16 GRADING

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

1. Provide a smooth transition between adjacent existing grades and new grades.
2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish Subgrades to required elevations within plus or minus 1 inch.

C. Grading Inside Grading Lines: Finish subgrade to a tolerance of ½ inch, when tested with a 10 foot straight-edge.

D. Contractor shall confirm that the proposed grades shown on the plans will not create a ponding water condition (i.e. an unintended low spot or pavement grades of less than 1%).

3.17 SUBSURFACE DRAINAGE

A. Drainage Piping: Drainage pipe is specified in Division 33 Section “Subdrainage” for foundation drainage and under-slab drainage systems.

B. Subsurface Drain: Place a layer of drainage fabric around perimeter of drainage trench. Place a 6 inch course of filter material on drainage fabric to support drainage pipe. Encase drainage in a minimum of 12 inches of filter material and wrap in a drainage fabric, overlapping sides and ends at least 6 inches.

1. Compact each course of filter material to 95 percent of maximum dry unit weight according to ASTM D 698.

C. Drainage Backfill: Place and compact filter material over subsurface drain, in width indicated, to within 12 inches of final subgrade. Overlay drainage backfill with one layer of drainage fabric, overlapping sides and ends at least 6 inches.

1. Compact each course of filter material to 95 percent of maximum dry density according to ASTM D 698.

3.18 SUBBASE AND BASE COURSES

A. If indicated on the plans or deemed necessary by the geotechnical engineer, install separation fabric on prepared subgrade according to manufacturer’s written instructions, overlapping sides and ends.

B. Under pavements and walks, place subbase course on separation fabric according to fabric manufacturer’s written instructions if fabric is called for on the plan or deemed necessary by the geotechnical engineer.

C. Under pavements and walks, place base on prepared subbase or subgrade as follows:

1. Place base course material over subbase (or subgrade if subbase is not indicated).
2. Compact subbase and base courses at optimum moisture content to required grades, lines, cross sections, and thickness to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.
3. When thickness of compacted subbase or base course exceeds 6 inches, place materials in equal layers, with no layer more than 6 inches thick or less than 3 inches thick when compacted.

D. Pavement Shoulders: Place shoulders along edges of subbase and base course to prevent lateral movement. Construct shoulders, at least 12 inches wide, of satisfactory soil materials and compact simultaneously with each subbase and base layers to not less than 95 percent of maximum dry unit weight according to ASTM D 1557.

3.19 DRAINAGE COURSE

A. Under slabs-on-grade, if indicated on the plans, place drainage fabric on prepared subgrade according to manufacturer's written instructions, overlapping sides and ends.

B. Under slabs-on-grade, place drainage course on prepared subgrade and as follows:

1. Compact drainage course to required cross sections and thickness to no less than 95 percent of maximum dry unit weight according to ASTM D 698.
2. When compacted thickness of drainage course exceeds 6 inches, place materials in equal layers, with no more than 6 inches thick or less than 3 inches thick when compacted.

3.20 FIELD QUALITY CONTROL

A. Testing Agency: Construction Manager/Owner will engage a qualified independent Geotechnical engineering testing agency to perform field quality-control testing.

B. Allow testing agency to inspect and to test any subgrades and each fill or backfill layer. Proceed with subsequent earthwork only after test results for previously completed work. Comply with requirements.

C. Testing agency will test compaction of soils in place according to ASTM D 1556. ASTM D 2167, ASTM D 2922, and ASTM D 2937, as applicable.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate and remove and replace soil to depth required, recompact and retest until specified compaction is obtained.

3.21 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces becomes eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

C. Protect all existing trees, bushes, plants, etc. indicated to remain during construction activities.

3.22 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Unless otherwise indicated on the drawings, remove surplus satisfactory soil and waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property.

1. Do not burn materials on the Owner's property.

END OF SECTION 31 2000

32 1216 - HOT-MIX ASPHALT CONCRETE PAVING

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.

B. All paving materials and construction methods shall conform to the current standards and specifications of the Michigan Department of Transportation. Where these specifications are less stringent than the requirements of MDOT, the MDOT standards shall govern

C. Contractor shall refer to and familiarize themselves with the Central Michigan University Construction Standards. Where these specifications or the plans differ from the standard details or specifications of the university, the university standards shall apply.

1.2 SUMMARY

A. This Section includes installation of the following:

1. Hot-mix asphalt concrete paving.

B. Related Sections include the following:

1. Division 31 1415 Section "Pavement Markings."
2. Division 31 2000 Section "Earth Moving" for aggregate subase and base courses.

1.3 DEFINITIONS

A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

B. MDOT: Michigan Department of Transportation.

1.4 REQUIREMENTS

A. Provide hot-mix asphalt paving according to materials, workmanship, and other applicable requirements of MDOT'S most current Standard Specifications for Construction. Where notes in this specification section differ from the MDOT standards, the MDOT standards shall govern.

B. Do not place asphalt when ambient air or base surface temperature is less than 40 degrees F (4 degrees C), or surface is wet or frozen.

C. Place bitumen mixture when temperature is not more than 15 F degrees (8 C degrees) below bitumen supplier's bill of lading and not more than maximum specified temperature.

1.5 SUBMITTALS

A. Submit aggregate and bituminous mix designs for review. Contractor shall confirm that the materials provided meet the required specifications, and provide material certification to the engineer. Material certification shall state that the products meet or exceed the requirements indicated on the plans and the requirements of the regulating authority.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer.

1. Manufacturer shall be a paving-mix manufacturer registered with and approved by authorities having jurisdiction or the DOT of the state in which Project is located.

B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated, as documented according to ASTM E 548.

C. Regulatory Requirements: Comply with (MDOT) Michigan Department of Transportation's current Standard Specification for Construction for asphalt paving work.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp or if the following conditions are not met:

1. Prime and Tack Coats: Minimum surface temperature of 60 deg F.
2. Slurry Coat: Comply with weather limitations of ASTM D 3910.
3. Asphalt Base Course: Minimum surface temperature of 40 deg F and rising at time of placement.
4. Asphalt Surface Course: Minimum surface temperature of 60 deg F at time of placement.

B. Pavement-Marking Paint: Apply pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 40 deg F for oil-based materials, 50 deg F (10 deg C) for water-based materials, and not exceeding 95 deg F.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Asphalt Cement: ASTM D 946.

B. Aggregate for Base Course: Conform with requirements of agency having jurisdiction.

C. Aggregate for Leveling Course: Conform with requirements of agency having jurisdiction.

D. Aggregate for Wearing Course: Conform with requirements of agency having jurisdiction.

E. Fine Aggregate: Conform with requirements of agency having jurisdiction.

F. Mineral Filler: Conform with requirements of agency having jurisdiction.

G. Tack Coat: Conform with requirements of agency having jurisdiction.

2.2 ASPHALT MATERIALS

A. Asphalt Binder: Conform with requirements of agency having jurisdiction.

B. Asphalt Cement: Conform with requirements of agency having jurisdiction.

C. Prime Coat: Conform with requirements of agency having jurisdiction.

D. Prime Coat: Conform with requirements of agency having jurisdiction.

E. Tack Coat: Conform with requirements of agency having jurisdiction.

2.3 AUXILIARY MATERIALS

A. Paving Geotextile: AASHTO M 288, nonwoven polypropylene; resistant to chemical attack, rot, and mildew; and specifically designed for paving applications.

B. Joint Sealant: ASTM D 3405 or AASHTO M 301, hot-applied, single-component, polymer-modified bituminous sealant.

C. Pavement-Marking Paint: Refer to section 32 1415 “Pavement Marking”.

1. Color: As indicated on Drawings or in accordance with MDOT.

D. Wheel Stops (if indicated): Precast, air-entrained concrete, 2500-psi minimum compressive strength, 6 inches high by 9 inches wide by 84 inches long. Provide chamfered corners and drainage slots on underside and holes for anchoring to substrate.

1. Dowels: Galvanized steel, 3/4-inch diameter, 10-inch minimum length.

2.4 ASPHALT MIX DESIGNS

A. Hot-Mix Asphalt: Conform with requirements of agency having jurisdiction. Refer to notes and details on the plans.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that compacted subgrade is dry and in suitable condition to support paving and imposed loads.

B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction. Proof-roll as indicated in “Earth Moving” section 31 2000.

C. Verify that gradients and elevation of base are correct. Retain first subparagraph below, if applicable.

3.2 REPAIRS

A. Leveling Course: Install and compact leveling course consisting of hot-mix asphalt surface course to level sags and fill depressions deeper than 1 inch in existing pavements.

1. Install leveling wedges in compacted lifts not exceeding 3 inches thick.

B. Crack and Joint Filling: Remove existing joint filler material from cracks or joints to a depth of 1/4 inch minimum or as indicated.

1. Use hot-applied joint sealant to seal cracks and joints. Fill flush with surface of existing pavement and remove excess.

3.3 SURFACE PREPARATION

A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared compacted subgrade is ready to receive paving.

B. Tack Coat: Apply uniformly to surfaces of existing pavement at a rate of 0.05 to 0.15 gal./sq. yd.

3.4 HOT-MIX ASPHALT CONCRETE PLACING

A. Machine place hot-mix asphalt on prepared surface, spread uniformly, and strike off. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness when compacted.

1. Place hot-mix asphalt base course in number of lifts and thicknesses indicated.
2. Place hot-mix asphalt surface course in single lift.
3. Spread mix at minimum temperature of 250 deg F.
4. Install work in accordance with Michigan Department of Transportation (MDOT)..
5. Compact pavement by rolling to density specified. Re-roll as necessary to achieve even and smooth finish without roller marks.

B. Place paving in consecutive strips not less than 10 feet wide unless infill edge strips of a lesser width are required.

C. Promptly correct surface irregularities in paving course behind paver. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.5 JOINTS

A. Construct joints to ensure a continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.

1. Clean contact surfaces and apply tack coat to joints.
2. Construct transverse joints as described in AI MS-22, "Construction of Hot Mix Asphalt Pavements."

3.6 COMPACTION

A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers.

1. Complete compaction before mix temperature cools to 185 deg F.

B. Breakdown Rolling: Complete breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness.

C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density:

1. Average Density: 96 percent of reference laboratory density according to AASHTO T 245, but not less than 94 percent nor greater than 100 percent.
2. Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.

D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.

E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while asphalt is still hot; compact thoroughly.

F. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

G. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.7 INSTALLATION TOLERANCES

A. Thickness: Compact each course to produce the thickness indicated within the following tolerances:

1. Base Course: Plus or minus 1/2 inch.
2. Surface Course: Plus 1/4 inch, no minus.

B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas:

1. Base Course: 1/4 inch.
2. Surface Course: 1/8 inch.
3. Crowned Surfaces: Test with crowned template centered and at right angle to crown. Maximum allowable variance from template is 1/4 inch.

C. Confirm minimum 1% slopes on asphalt pavement surfaces. Notify engineer prior to asphalt placement if minimum 1% slope is not met in any areas.

3.8 PAVEMENT MARKING

A. Refer to specification section 32 1415 “Pavement Marking”.

3.9 FIELD QUALITY CONTROL

A. Testing and inspecting: Owner may secure a testing firm to perform and determine compliance with specified requirements and AI MS-2.

3.10 DISPOSAL

A. Except for material indicated to be recycled, remove excavated materials from Project site and legally dispose of them in an EPA-approved landfill.

1. Do not allow excavated materials to accumulate on-site.

END OF SECTION 32 1216

32 1313 - CEMENT CONCRETE PAVEMENTS, CURBS AND GUTTERS

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.

B. All paving materials and construction methods shall conform to the current standards and specifications of the Michigan Department of Transportation. Where these specifications are less stringent than the requirements of MDOT, the MDOT standards shall govern.

C. Contractor shall refer to and familiarize themselves with the Central Michigan University Construction Standards. Where these specifications or the plans differ from the standard details or specifications of the university, the university standards shall apply.

1.2 SUMMARY

A. This Section includes exterior cement concrete pavement for the following:
1. Curbs and gutters.
2. Sidewalks and platforms.

B. Related Sections include the following:

1. Division 31 1415 Section “Pavement Markings.”
2. Division 31 2000 Section “Earth Moving” for subgrade preparation, grading and subbase course.

1.3 PERFORMANCE REQUIREMENTS

A. Refer to MDOT’s current Standard Specifications for Construction.

1.4 SUBMITTALS

A. Submit aggregate and concrete mix designs for review. Contractor shall confirm that the materials provided meet the required specifications, and provide material certification to the engineer. Material certification shall state that the products meet or exceed the requirements indicated on the plans and the requirements of the regulating authority.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer with at least three (3) years in business who has completed pavement work similar in material, design, and extent to that indicated for this Project.

B. Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment and approved by authorities having jurisdiction or the DOT of the state in which Project is located.

1. Manufacturer must be certified according to the National Ready Mix Concrete Association's Plant Certification Program.

C. Testing Agency Qualifications: An independent testing agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 to conduct the testing indicated, as documented according to ASTM E 548.

D. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant and each aggregate from one source.

1.6 PROJECT CONDITIONS

A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

B. Do not place concrete when base surface temperature is less than 40 degrees F (4 degrees C) or surface is wet or frozen.

PART 2 - PRODUCTS

2.1 FORMS

A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.

1. Use flexible or curved forms for curved conditions.

B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, stain, or adversely affect concrete surfaces.

2.2 STEEL REINFORCEMENT

A. Plain-Steel Welded Wire Fabric: ASTM A 185, fabricated flat sheets, unfinished.

B. Reinforcement Bars: ASTM A 615/A 615M, Grade 60, deformed billet steel, unfinished.

C. Epoxy-Coated Reinforcement Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60, deformed bars.

D. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60, deformed bars; assembled with clips.

E. Joint Dowel Bars: Plain steel bars, ASTM A 615/A 615M, Grade 60. Cut bars true to length with ends square and free of burrs.

F. Epoxy-Coated Joint Dowel Bars: ASTM A 775/A 775M; with ASTM A 615/A 615M, Grade 60, plain steel bars.

G. Tie Bars: ASTM A 615/A 615M, Grade 60, deformed.

H. Hook Bolts: ASTM A 307, Grade A, internally and externally threaded. Design hook-bolt joint assembly to hold coupling against pavement form and in position during concreting operations, and to permit removal without damage to concrete or hook bolt.

I. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcement bars, welded wire fabric, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete or fiber-reinforced concrete of greater compressive strength than concrete.

J. Epoxy Repair Coating: Liquid two-part epoxy repair coating, compatible with epoxy coating on reinforcement.

2.3 CONCRETE MATERIALS

A. General: Use the same brand and type of cementitious material from the same manufacturer throughout the Project. All material to meet current MDOT specifications.

2.4 CURING MATERIALS

A. Absorptive Cover: AASHTO M 182, Class 2, burlap cloth made from jute or kenaf, weighing approximately 9 oz./sq. yd. dry where indicated on Contract Documents.

B. Evaporation Retarder: Waterborne, monomolecular film forming, manufactured for application to fresh concrete.

C. Clear Waterborne Membrane-Forming Curing Compound: ASTM C 309, Type 1, Class B.

2.5 RELATED MATERIALS

A. Expansion- and Isolation-Joint-Filler Strips: ASTM D 1751, asphalt-saturated cellulosic fiber.

1. Thickness: ½ inch minimum and thicker where indicated.

B. Coloring Agent: Where indicated, ASTM C 979, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, nonfading, and resistant to lime and other alkalis.

1. Color: n/a

C. Slip-Resistive Aggregate Finish: Factory-graded, packaged, rustproof, nonglazing, abrasive aggregate of fused aluminum-oxide granules or crushed emery with emery aggregate containing not less than 50 percent aluminum oxide and not less than 25 percent ferric oxide; unaffected by freezing, moisture, and cleaning materials.

D. Bonding Agent: ASTM C 1059, Type II, non-redispersible, acrylic emulsion or styrene butadiene.

E. Epoxy Bonding Adhesive: ASTM C 881, two-component epoxy resin, capable of humid curing and bonding to damp surfaces, of class and grade to suit requirements.

2.6 CONCRETE MIXES

A. Prepare design mixes, proportioned according to ACI 211.1 and ACI 301, for each type and strength of normal-weight concrete determined by either laboratory trial mixes.

B. Use a qualified independent testing agency for preparing and reporting proposed mix designs for the trial batch method.

C. Proportion mixes to provide concrete for driveways, roads, parking lots, curbs and gutters with the following properties:

1. Compressive Strength (28 Days): 3500 psi, unless otherwise indicated.
2. Maximum Water-Cementitious Materials Ratio: 40% by weight.
3. Slump Limit: 3 inches.
4. Maximum Aggregate Size: 1.5 inch (38 mm).

D. Sidewalks and platforms provide 3500 psi.

E. Cementitious Materials: Limit percentage, by weight, of cementitious materials other than portland cement according to ACI 301 requirements for concrete exposed to deicing chemicals.

F. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content of 2.5 to 4.5 percent.

G. Use appropriate treatment per MDOT specifications where concrete will be placed under freezing conditions. Obtain approval of architect prior to placing concrete in freezing conditions.

H. Coloring Agent: Where indicated, add coloring agent to mix according to manufacturer's written instructions.

2.7 CONCRETE MIXING

A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94 and ASTM C 1116.

1. When air temperature is between 85 deg F and 90 deg F, reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F, reduce mixing and delivery time to 60 minutes.

B. Project-Site Mixing: Comply with requirements and measure, batch, and mix concrete materials and concrete according to ASTM C 94. Mix concrete materials in appropriate drum-type batch machine mixer.

PART 3 - EXECUTION

3.1 PREPARATION

A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction and repair as required.

B. Verify that grades are correct.

3.2 EDGE FORMS AND SCREED CONSTRUCTION

A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement to required lines, grades, and elevations.

B. Clean forms after each use and coat with form release agent to ensure separation from concrete without damage.

3.3 STEEL REINFORCEMENT

A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating reinforcement and with recommendations in CRSI's "Placing Reinforcing Bars" for placing and supporting reinforcement.

B. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement.

C. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.

D. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities, or replace units as required before placement. Set mats for a minimum 2-inch overlap to adjacent mats.

3.4 JOINTS

A. General: Construct construction, isolation, and contraction joints and tool edgings true to line with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline, unless otherwise indicated.

B. At all locations where new concrete abuts existing concrete, building wall, or supported slabs, place expansion joint.

C. Construction Joints: Set construction joints at side and end terminations of pavement and at locations where pavement operations are stopped for more than one-half hour, unless pavement terminates at isolation joints.

1. Provide preformed galvanized steel or plastic keyway-section forms or bulkhead forms with keys, unless otherwise indicated. Embed keys at least 1-1/2 inches into concrete.

D. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where required.

E. Expansion Joints: Place 1 inch (25 mm) wide expansion joints at maximum 40 foot intervals, if not indicated on drawings. Joints to be full depth of pavement.

F. Install dowel bars and support assemblies at joints if indicated on the plans. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one side of joint.

G. Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas. Construct ¼ inch wide contraction joints for a depth equal to at least one-third of the concrete thickness. Maximum spacing of contractions joints shall be 8’.

1. Grooved Joints: Form contraction joints after initial floating by grooving and finishing each edge of joint with grooving tool to a 3/8-inch (10-mm) radius. Repeat grooving of contraction joints after applying surface finishes. Eliminate groover marks on concrete surfaces.
2. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch- wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
3. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt coat one-half of dowel length to prevent concrete bonding to one side of joint.

H. Edging: Tool edges of pavement, gutters, curbs, and joints in concrete after initial floating with an edging tool to the following radius.

1. Radius: 3/8 inch (10 mm).

3.5 CONCRETE PLACEMENT

A. Inspection: Before placing concrete, inspect and complete formwork installation, reinforcement steel, and items to be embedded or cast in. Notify other trades to permit installation of their work.

B. Remove snow, ice, or frost from subbase surface and reinforcement before placing concrete. Do not place concrete on frozen surfaces.

C. Do not add water to concrete during delivery, at Project site, or during placement.

D. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete according to recommendations in ACI 309R.

E. Cold-Weather Placement: Comply with ACI 306.1. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators, unless otherwise specified and approved in mix designs.

F. Hot-Weather Placement: Place concrete according to recommendations in ACI 305R when hot-weather conditions exist.

3.6 CONCRETE FINISHING

A. General: Wetting of concrete surfaces during screeding, initial floating, or finishing operations is prohibited.

B. Float Finish: Float surface with power-driven floats, or by hand floating if area is small or inaccessible to power units. Finish surfaces to true planes. Cut down high spots, and fill low spots.

1. Area Paving: Light broom, texture perpendicular to pavement direction.
2. Curbs and Gutters: Light broom, texture parallel to pavement direction.
3. Direction of Texturing: Parallel to pavement direction.

4. Inclined Vehicular Ramps: Heavy broomed perpendicular to slope.
5. Place sealer on exposed concrete surfaces immediately after finishing. Apply in accordance with manufacturer's instructions.

C. Provide detectable warning surface at all handicap ramps to meet ADA requirements in accordance with ANSI sections 406.13 and 705.

3.7 CONCRETE PROTECTION AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and follow recommendations in ACI 305R for hot-weather protection during curing.

B. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h (1 kg/sq. m x h) before and during finishing operations. Apply according to manufacturer's written instructions.

C. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions.

3.8 PAVEMENT TOLERANCES

A. Comply with tolerances of ACI 117 and as follows:

1. Elevation Variation: 1/4 inch.
2. Thickness: Plus 3/8 inch, minus 1/4 inch.
3. Surface Variation: Gap below 10-foot- long, unleveled straightedge not to exceed 1/4 inch.
4. Maximum cross slope for walks, ramps, platforms: 2%
5. Maximum longitudinal walk slopes not requiring landings and handrails: 5%
6. Maximum longitudinal ramp slopes: 8.33% (1 on 12 slope)

3.9 PAVEMENT MARKING

A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.

B. Allow concrete pavement to cure for 28 days and be dry before starting pavement marking.

C. Sweep and clean surface to eliminate loose material and dust.

D. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

1. If indicated on the plans, spread glass beads uniformly into wet pavement markings at a rate of 6 lb/gal.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified independent testing and inspection agency to sample materials, perform tests, and submit test reports during concrete placement according to requirements specified.

B. Testing Services: Testing shall be performed according to the following requirements:

1. Compression Test Specimens: ASTM C 31/C 31M; one set of four standard cylinders for each compressive-strength test. Cylinders shall be molded and stored for laboratory-cured test specimens unless field-cured test specimens are required.
2. Compressive-Strength Tests: ASTM C 39; one set for each day's pour of each concrete class exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. One specimen shall be tested at 7 days and two specimens at 28 days; one specimen shall be retained in reserve for later testing if required.

C. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 24 hours of testing. Reports of compressive-strength tests shall contain Project identification name and number, date of concrete placement, name of concrete testing agency, concrete type and class, location of concrete batch in pavement, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.

D. Additional Tests: Testing agency shall make additional tests of the concrete when test results indicate slump, air entrainment, concrete strengths, or other requirements have not been met. Testing agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed.

3.11 REPAIRS AND PROTECTION

A. Remove and replace concrete pavement that is broken, damaged, or defective, or does not meet requirements as directed by the Architect.

B. Remove and replace concrete sidewalks and/or ramps that do not comply with maximum slopes indicated in Section 3.8A above.

C. Protect concrete from damage. Exclude traffic from pavement for at least fourteen (14) calendar days after placement.

END OF SECTION 32 1313

32 1415 – PAVEMENT MARKING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions, apply to work of this section.

B. These specifications apply to private, on-site pavement marking. All pavement markings within public rights-of-way must comply with the standards of the regulating agency.

1.02 SUMMARY

A. The work under this section includes but is not necessarily limited to the furnishing and installation of all materials necessary for placing pavement markings as indicated on drawings and specifications.
   1. Markings on concrete pavement areas.
   2. Markings on asphalt pavement areas.
   3. Markings on existing concrete or asphalt areas.
   4. Markings on resurfaced existing pavements.

B. Related Sections include the following:
   1. Division 321216 Section “Hot-Mix Asphalt Concrete Paving.”
   2. Division 321313 Section “Cement Concrete Pavements, Curbs and Gutters.”

1.03 QUALITY ASSURANCE

A. MDOT Specifications: Unless otherwise indicated on drawings or herein specification, all work under this section shall be performed in accordance with the current MDOT Standard Specifications for Highway Construction.

B. Physically Handicapped: All marking shall be done in accordance with ADA Requirements.

C. Paint Containers: Each paint container shall be plainly marked, with a durable, weather-resistant marking, showing the name and address of manufacturer or vendor, description of material, batch number, date of packaging and volume and weight of contents.

D. Use only personnel completely trained and experienced in installation of materials and equipment.

1.04 SUBMITTALS

A. Product Data and shop drawing submittals are not required. The contractor shall confirm that the materials provided meet the required specifications and provide material certification to the engineer. Material certification shall state that the products meet or exceed the requirements indicated on the plans and the requirements of the regulating authority.

1.05 PRODUCT HANDLING

A. Protection: Use all means necessary to protect materials before, during and after installation and to protect the installed work and materials of all other trades.

B. Replacements: In the event of damage, immediately make all repairs and replacements necessary to the approval of the Engineer at no additional cost to owner.

PART 2 PRODUCTS

2.01 GENERAL

A. All materials and products for work under this section shall conform to current 1990 MDOT Standard Specifications for Highway Construction.

2.02 PAVEMENT MARKING PAINT

A. The parking and/or traffic lane marking paint shall have a chlorinated rubber base. The paint shall be factory mixed, quick drying and non-bleeding. FS TT-P-115C Type III.
   1. FS TT-P-1952 – Paint, Traffic Black, and Airfield Marking, Waterborne; Rev/ E, 2007
   2. FHWA MUTCD – Manual on Uniform Traffic Control Devices for Streets and Highways; U.S. Dept of Transportation, Federal Highway Administration; http://mutcd.fhwa.dot.gov; current edition

B. Manufacturers
   1. Sherwin Williams
   2. SealMaster

C. Colors
   1. Parking lot striping shall be painted yellow.
   2. Traffic land and traffic movement markings shall be painted yellow.
   3. Barrier free parking spaces and access aisles shall be painted barrier free blue.
   4. Barrier free curb cut/dub-downs shall be painted barrier free blue.
   5. Fire lane markings shall be painted red.

PART 3 EXECUTION

3.01 SURFACE CONDITIONS

A. Inspection: Prior to all the work of this section, carefully inspect installed work of all trades and verify all such work is complete to the point where installation may properly commence. Verify all pavement markings may be installed in accordance with all pertinent codes and regulations, authorities having jurisdiction and referenced standards.

B. Discrepancies: In the event of discrepancy, immediately notify the Engineer. Do not proceed with installation in areas of discrepancies until all has been fully resolved.

3.02 SURFACE PREPARATION

A. Cleaning: Prior to application of pavement marking, it shall be marking contractor's responsibility that pavement surfaces are clear, dry and free of all foreign materials.

B. New pavement curing new bituminous wearing surface shall be in place for period of not less than fourteen days prior to application of Fast Dry pavement markings.

3.03 CONSTRUCTION METHODS

A. Application: Pavement markings shall be solid 4" wide yellow lines and laid out as indicated on drawings. Paint shall be applied uniformly at a minimum rate of sixteen gallons per mile for a single 4" solid line. Markings shall be applied so that they adhere adequately to the surface.

B. Protection of wet paint shall be the responsibility of the contractor. Markings obliterated by traffic shall be retraced at the contractor’s expense.

3.04 DEFECTIVE WORK

A. Improper location: Improperly located markings shall be removed at contractor's expense in a manner acceptable to Engineer and reapplied in correct locations at contractor's expense.

B. Material shortage: Markings which are applied with material shortages shall be properly reapplied at the contractor's expense.

3.05 CLEAN UP

A. Upon completion of the work of this section, remove all rubbish, trash and debris resulting from the work of this section. Leave the site in neat and orderly condition.

END OF SECTION 32 1415

33 4100 STORM SEWERS, UNDERDRAINS AND DRAINAGE STRUCTURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 01 Specification sections, apply to work of this section. Where these specifications differ from the standard detail sheets included with the plans, the detail sheets shall govern.

1.2 SUMMARY

A. The work under this Section includes, but is not necessarily limited to, the furnishing and installation of all storm sewers, underdrains and drainage structures and leads and connections as indicated on the Drawings, herein specified and as necessary for the proper and complete performance of this Work for foundations and underslab areas.

1. Storm Sewer Pipe
2. Perforated Underdrain Pipe
3. Castings
4. Manhole Sections and Steps
5. Catch Basin
6. Brick and Concrete Block Masonry

B. Related Sections may include, but not be limited to, the following:

1. Division 31 2000 Section “Earth Moving” for excavation and backfill.

1.3 QUALITY ASSURANCE

D. Use only personnel completely trained and experienced in installation of the materials.

E. Compliance to City/Township Codes and all other agencies having jurisdiction shall govern material and installation procedures.

1.4 SUBMITTALS

A. Shop Drawings: Shop drawing submittals are not required for storm sewer materials. Contractor is expected to conform to the plans, specifications, and details for this work. Submit material certificates in lieu of shop drawings. Material certificates shall be signed by manufacturer and contractor certifying that each material item complies with or exceeds requirements.

1.5 PRODUCT HANDLING

A. Protection: Use all means necessary to protect the materials before, during and after installation.

B. Replacements: In the event of damage, immediately make all necessary repairs and replacements acceptable to the Engineer and at no additional cost to the Owner.

PART 2 - PRODUCTS

2.1 STORM SEWER PIPE

A. General: Storm sewer pipe material shall be as indicated on the plans. If indicated on the plans, pipe materials shall conform to the following requirements.

B. Reinforced Concrete Pipe

1. Reinforced concrete pipe shall conform to ASTM C-76.72A, Type III & Type IV.
2. Joints shall be premium rubber joint as acceptable to the Engineer unless otherwise specified on the drawings.

C. Corrugated Polyethelene Tubing (CPT)

1. Corrugated Polyethelene Tubing (CPT) shall conform to ASTM F405 and shall be perforated with sock where indicated on the plans.
2. Joints shall be secured with a factory made snap-on or screen-on coupler for 4" and 6" diameter. Joints for 8" diameter and larger shall be a factory made coupler ties, bolts or screws on.

D. Perforated Underdrain Pipe (PE or CPP)

1. Perforated underdrain pipe shall be perforated, corrugated polyethelene pipe.
2. The pipe shall have a factory installed geotextile pipe wrap.
3. Perforation shall meet the requirements of AASHTO M 278.

E. Polyethylene Pipe (PE): Polyethylene pipe and fittings shall be standard strength and conform to ASTM F 405 and AASHTO M 252.

F. Polyvinyl Chloride Pipe (PVC): Polyvinyl Chloride pipe and fitting shall be standard strength and conform to ASTM F 800.

G. Geotextile Pipe Wrap: Geotextile pipe wrap shall weigh at least 3.5 ounces per square yard and shall conform to AASHTO M 288. It shall not be ripped or torn. The minimum tensile strength shall be 100 pounds.

2.5 CASTINGS

A. General: All castings shall be of cast iron, conforming to ASTM A 48 unless otherwise indicated. Conform to details and notes indicated on the plans. Where details or notes are not indicated, conform with the following requirements.

B. Manhole frames and covers: Material shall be MDOT Type A with perforated covers.

C. Catch basins and inlet castings: Catch basin and inlet castings shall be MDOT Type K when located in curbs and gutter, MDOT Type E in non-paved locations, and MDOT Type A when located in paved areas.

2.6 MANHOLE SECTIONS

A. Manhole walls

1. Standard manhole walls shall be Precast concrete units conforming to ASTM C 478, or be concrete block masonry.

B. Manhole bases: Manhole bases shall be precast concrete units of the dimensions indicated on the

Drawings.

2.7 MANHOLE STEPS

A. Manhole steps shall be of cast iron conforming to ASTM A 48 or equal, and shall meet pertinent safety rules and regulations.

2.8 CATCH BASINS

A. Construct catch basins of brick, block, masonry, or Precast units. Precast concrete catch basin units, if used, shall have reinforcing steel conforming to ASTM C 76 II, Wall B.

2.9 INLETS

A. Construct inlets of brick, block, masonry, or Precast units. Precast inlet units, if used, shall have reinforcing steel conforming to ASTM C 76 II, Wall B.

2.10 CLEANOUTS

A. PVC Cleanouts: PVC body with PVC threaded plug. Include PVC sewer pipe fitting and riser to cleanout of same material as sewer piping.

2.11 MORTAR

A. Mortar for brick masonry or plastering manholes shall be made of one part Portland cement to two parts sand, and materials and mixing shall correspond, in general, to Division 04 2000 Section “Unit Masonry.”

2.12 BRICK

A. Brick Work shall meet the requirements of Medium Brick of ASTM C 13.

2.13 CONCRETE BLOCK MASONRY

A. Concrete block masonry shall conform to ASTM C 139.

2.14 OTHER MATERIALS

A. All other materials not specifically described but required for a complete and proper installation of the work of this Section, shall be new, first quality of their respective kinds, and as selected by the Contractor subject to review by the Engineer.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection

1. Verify that all work under this Section may be installed in accordance with all pertinent codes and regulations, the original design and the reference standards.
2. All materials shall be inspected immediately before installation, and if found defective, immediately removed from the site.

B. Discrepancies

1. In the event of discrepancy, immediately notify the Engineer.
2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 EARTHWORK

A. All earthwork required for the performance of the work of this Section shall be installed in accordance with Division 31 2000 Section “Earth Moving.”

3.3 INSTALLATION

A. General: Install all pipe and fittings in strict accordance with the manufacturer's recommendations as acceptable to the Engineer and other authorities having jurisdiction.

B. Handling

1. Distribute pipe and materials at the site as required, care to prevent damage to the pipe and materials.
2. Use proper tools and implements for safely handling and installing the pipe and other materials.
3. Protect the pipe and other materials from falling to the ground or into the trench.
4. Protect distributed pipe and materials from the public and passing vehicles.

C. Laying pipe

1. Lay all pipe true to line and grade with pipe ends abutting each other and the bell end facing the direction of laying.
2. Use laser alignment equipment to establish and maintain proper line and grade, unless otherwise directed.
3. Correct any deviation from line and grade at no additional cost to the Owner.
4. Protect workers at all times from cave-in and other hazardous conditions.

D. Joints: Inspect each joint immediately after being completed and, if defective, shall be corrected before any more pipe is laid.

E. Concrete encasement

1. Place concrete encasements in locations and to the form and dimensions indicated.
2. Concrete for encasements shall be Class SE with that below the pipe dry mixed.
3. Take particular care to place the concrete under the pipe, and lay pipe in fresh concrete so that a complete support of the pipe will be made. Encasement at the sides and top may be placed after the concrete under this pipe has been set.

F. Manholes

1. Construct manholes as indicated on the Drawings and Specifications.
2. Take special care in forming the channels in the concrete bottom and use wooden templates or half sewer pipe for this work.
3. Plaster masonry work and castings as indicated on the Drawings.
4. In precast concrete manholes, the bottom section shall have cast openings of sufficient size to receive the sewer pipe. If such openings are not provided, the bottom portion may be constructed of masonry work from the concrete base to at least 6" above the top of the largest pipe entering the manhole and Precast sections placed from the masonry to the desired top elevation.
5. All the annular space between the sewer pipe and the opening in the manhole section shall be filled with brick and/or masonry to provide a waterproof seal.
6. Place the manhole casting on a minimum of 3 courses of masonry brick and a maximum of 5 courses of manhole brick. Install bricks radially. Precast concrete adjusting rings may be used in place of brick.
7. Mortar joints have to be smooth tooled joints.

G. Catch basins and inlets

1. Construct catch basins and inlets as indicated on the Drawings and Specifications.
2. Place catch basin and inlet castings on a minimum of 3 courses of manhole brick and a maximum of 5 courses of manhole brick. Install brick radially. Precast concrete adjusting rings may be used in place of brick.

H. Trench bracing: Install trench bracing in accordance with safety and other pertinent rules and regulations, and Division 31 Section “Earth Moving.”

I. Erosion control and sedimentation: Contractor to provide erosion control to minimize introduction of sedimentation into the system.

3.4 CLEANING

A. Prior to acceptance of storm sewers, underdrains, manholes and drainage structures, thoroughly clean those structures and remove all dirt and debris of whatever nature from inside sewer pipes, manholes and the like, and leave the site in a neat and clean condition.

END OF SECTION 33 4100

MATERIALS TESTING CONSULTANTS

REPORT OF PAVEMENT INVESTIGATION

WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER

400 MACK AVENUE

DETROIT, MICHIGAN

Prepared For:

WAYNE STATE UNIVERSITY

Detroit, Michigan

Prepared By:

MATERIALS TESTING CONSULTANTS, INC.

January 2025

MTC Project No. 241763

January 8, 2025
Project No. 241763

Wayne State University
5454 Cass Avenue
Detroit, Michigan 48202

Attention: Ariel Suarez
Associate Project Manager

Reference: Report of Pavement Investigation
WSU Detroit Mack Health Center, 400 Mack Avenue
Detroit, Michigan

Dear Ariel:

We have completed a pavement investigation for the above-referenced project. The purpose of this investigation has been to identify the general subsurface soil conditions in the vicinity of the proposed construction, analyze the conditions relative to the planned construction and to provide recommendations for the design of pavements. This work has been performed as described in our proposal dated March 21, 2024.

Presented herein are descriptions of our understanding of the design considerations, the geotechnical investigation, encountered conditions and engineering recommendations. The Appendix contains the report limitations and boring log terminology, soil classification chart, boring logs and laboratory test data.

DESIGN CONSIDERATIONS

Available Information

We have been provided the following documents and information for use in this investigation:

- An ALTA/NSPS Land Title Survey showing the property and locations of parking lots and structures on site, prepared by Giffels Webster and dated May 17, 2021, received from Arial Suarez of Wayne State University on March 19, 2024.
- A map image showing the site location received from Arial Suarez of Wayne State University on March 19, 2024.
- Email correspondence with Arial Suarez of Wayne State University regarding the type of construction and scope of geotechnical investigation.

Project Description

The pavements under investigation are located at the Detroit Mack Health Center as shown on the attached Boring Location Plan, Figure No. 1. The site is located at address 400 Mack Avenue in Detroit, Michigan. The parking lots are bounded by Beaubien Boulevard to the east, Brush Street to the west, Erskine Street to the south and Mack Avenue to the north.

The construction will in general consist of pavement rehabilitation of the existing asphalt parking lot and drives. We understand the project may include either full depth reconstruction or partial depth mill and asphalt replacement.

Traffic is expected to consist of relatively light passenger vehicles with only occasional heavier axle wheel loading from trucks for deliveries, refuse pickup, etc. We have considered that the parking lot and entry drive will experience a design loading of no more than 200 vehicles per day.

We should be informed of any changes between the actual design conditions and those described herein as this information may affect our recommendations.

INVESTIGATION METHODOLOGY

Field Investigation

Subsurface conditions were investigated by 11 hand auger soil borings with planned depths of 5 ft. Borings were drilled through pavement with an accompanying pavement core. Borings B-3, B-5, B-7 and B-10 encountered shallow auger refusal due to possible coarse gravel, cobble or fill debris at depths ranging from 1.5 to 3.0 (els 617.4 to 619.9). Boring B-7 was re-attempted as Boring B-7A. Boring locations are shown on the attached plan, Figure No. 1.

MTC staked the approximate boring locations in the field. Boring elevations were approximated by GPS. The elevations used in this report are given in feet and are based on NAVD88 datum, with boring coordinates given in the Michigan State Plane South system. If more precise location and elevation data are desired, a registered professional land surveyor should be retained to locate the borings and determine their ground elevations.

The soil borings were generally drilled using the following procedure:

- Pavement cored with a 4-inch diameter core barrel
- Aggregate base sampled and the thickness measured
- US Army Corps of Engineers Dynamic Cone Penetrometer, ASTM D6951 (USACE DCP) performed to depths ranging from 2.2 to 2.7 ft
- Performance of hand auger borings with grab soil sampling to advance the boreholes

The boreholes were backfilled to the original ground surface after drilling completion and patched at the surface with cold patch after drilling completion. Recovered samples were sealed, labeled and transported to our laboratory. All soil samples will be discarded after sixty days unless a longer hold time is specifically requested.

Investigation procedures, soil classification information, boring logs, USACE DCP logs and pavement core photographs are provided in the Appendix.

The recovered soil samples were reviewed by an engineer and technically classified according to the methods of ASTM D2488 "Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)". Estimates of the unconfined compressive strength of the cohesive samples were made using a calibrated penetrometer. A copy of the test boring logs along with a description of the terminology used on the logs and a chart of the ASTM D2488 group symbol names are provided in the Appendix.

Borings were drilled and other sampling was conducted solely to obtain indications of subsurface conditions as part of a geotechnical exploration program. No services were performed to evaluate subsurface environmental conditions.

INVESTIGATION RESULTS

Regional Geology

The *Map of the Surface Formations of the Southern Peninsula of Michigan,* published by the State of Michigan, indicates the site is in an area of waterlaid moraines. Soil conditions typically are found to range from clay and silt to sand and gravel with possible cobble and boulder in this type of geologic area.

Site Conditions

Based on our review of historical aerial imagery going back to 1951, it appears the property previously contained several residences and surrounding pavements prior to 1999. Indications of previous structures such as abandoned foundations or slabs were not observed during our field staking activities. At the time of our field work, the site contained several existing structures and associated HMA-paved drives and parking lots, fencing, underground and overhead utilities and areas of cut grass lawn. The area of investigation was generally covered in asphalt pavement. The site, in general, was relatively flat with elevations generally within 1 ft of el 622.

Surface drainage for the lots and drives appeared to be directed to catch basins near the center of the existing parking lots and drives. Original design plans were not provided for the site.

Existing pavement in the HMA-paved parking lots and entry drive were generally observed to be in poor to very poor condition. Closely spaced block cracking was generally observed across the lots and alligator cracking and potholes were observed in the entry drive as well as the lots. Several patches were observed, and cracks were generally not sealed. Photographs of alligator cracking and block cracking in the lots are provided below.

Subsurface Conditions

The investigation, in general, encountered the following pavement sections at the surface:

Table 1. Encountered Pavement Sections

Boring	Location	HMA Thickness (in)	Base Thickness (in)	Base Material
B-1	Mack Ave Entry	4 ½	8	Gravel
B-2	North Parking Lot	3	9	Gravel
B-3	North Parking Lot	2 ¾	9	Gravel
B-4	North Parking Lot	3 ¾	8	Gravel
B-5	North Parking Lot	3 ¾	8	Gravel
B-6	Brush Street Entry	4 ½	8	Gravel
B-7	South Parking Lot	4 ¼	8	Gravel
B-7A	South Parking Lot	4	8	Gravel
B-8	South Parking Lot	5	7	Gravel
B-9	South Parking Lot	3 ½	8	Gravel
B-10	South Parking Lot	4	13	Gravel
B-11	South Parking Lot	3 ½	12	Rubblized Concrete

Pavement sections in the north parking lot, Mack Ave entry drive and Brush Street entry drive generally consisted of 3 ¾ to 4 ½ inches of HMA overlying 8 inches of gravel base, with the exception of Borings B-2 and B-3 which encountered 2 ¾ to 3 inches of HMA over 9 inches of gravel base. Pavement sections in the south parking lot were generally more variable and generally consisted of 3 ½ to 4 ¼ inches of HMA overlying 8 inches of gravel base, with the

exceptions of Boring B-8 which encountered 5 inches of HMA over 7 inches of gravel, Boring B-10 which encountered 13 inches of gravel base and Boring B-11 which encountered 12 inches of rubblized concrete base.

Beneath the pavement sections, Borings B-3 to B-6 and B-9 to B-11 generally encountered fill, consisting of very stiff to hard lean clay (CL) and clayey sand (SC) and appearing to contain asphalt, glass, brick and concrete debris, to depths ranging from 1.5 to 5 ft (els 615.6 to 619.9). Possible topsoil was occasionally encountered within the urban fill. Boring B-7 encountered urban fill, consisting of very stiff lean clay (CL), overlying peat (PT) to the explored depth of 2.2 ft (el 618.2). Boring B-7 was reattempted at Boring B-7A as the bottom of the encountered peat was not found. Boring B-7A encountered uncontrolled urban fill, consisting of stiff to hard lean clay (CL) and containing possible buried topsoil, to a depth of 2.5 ft (el 617.9) overlying hard lean clay (CL) to the explored depth of 5 ft (el 615.4). Due to the possible topsoil and debris encountered, we have considered this urban fill was likely placed in an uncontrolled manner.

Beneath the pavements and uncontrolled urban fill, Borings B-1 encountered poorly graded sand with silt (SP-SM) to a depth of 2 ft (el 619.7) and very stiff to hard lean clay (CL) to the explored depth of 5 ft (el 616.7). Boring B-2 encountered poorly graded sand with varying amounts of clayey and silty fines (SP-SC, SM) to the explored depth of 5 ft (el 616.9). Borings B-4, B-6, B-7A and B-8 generally encountered medium stiff to hard lean clay (CL) to the explored depths of 5 ft (el 614.7 to 616.6).

US Army Corps of Engineers Dynamic Cone Penetrometer (USACE DCP) Testing was performed in Borings B-1 to B-11 to depths of up to 2.7 ft below the ground surface. The USACE DCP data was correlated to California Bearing Ratio (CBR) values. Beneath the existing parking lots, the correlated CBR values generally ranged from 6 to 100 percent near the top of subgrade elevations. Logs containing USACE DCP data and the correlated CBR data are provided in the Appendix.

The consistency of cohesive soil is based on estimates of the unconfined compressive strength obtained with a calibrated penetrometer.

Groundwater was encountered during the drilling activities in Borings B-7 and B-7A at 1 ft (els 619.4), perched above clay layers within the gravel base. Groundwater levels may fluctuate due to seasonal variations such as precipitation, snowmelt, nearby river or lake levels and other factors that may not be evident at the time of measurement. Groundwater levels may be different at the time of construction.

This section has provided a generalized description of the encountered subsurface soil conditions. The boring logs located in the Appendix should be reviewed for detailed soil descriptions. Some variation between boring locations may be expected.

CONCLUSIONS AND RECOMMENDATIONS

During our investigation, pavement in poor to very poor condition was encountered throughout the site. Due to the existing pavement conditions and considering long term pavement performance is desired (15 to 25 years), a full-depth replacement of the pavement section, including the replacement of the aggregate base, is recommended for the drives and parking areas.

Since the aggregate base may not meet MDOT 21AA requirements, leaving the existing aggregate base in place presents some risk of poor drainage beneath the pavement which can result in premature pavement deterioration. If the Owner can accept the risk of future poor pavement performance and a pavement life of less than 15 to 25 years, they may consider re-use of the existing aggregate base with a full-depth asphalt replacement.

Additionally, the frequent fill with debris, peat and buried topsoil in conjunction with the poor to very poor pavement condition indicates likely poor subgrade conditions. Subgrade evaluation is via proof rolling is described herein, and extensive subgrade remediation is expected to be required.

Pavement rehabilitation options such as a partial depth asphalt mill and overlay, chip sealing or any other nonstructural overlay are not expected to provide significant extension of pavement life in areas of poor pavement condition (parking and drive areas). In addition, for any overlay, the cracking in pavement that is left in place would be expected to reflect upward through the overlay.

It is important that the recommendations of this report, in particular those pertaining to subgrade preparation, construction observation and testing, be implemented during design and construction.

Pavement Rehabilitation

Full-Depth Reconstruction of Asphalt Pavement Section and Construction of New Pavements

Full-depth reconstruction involves removal of existing asphalt and aggregate base and replacement of the entire pavement section. Subgrade preparation in reconstructed pavement areas should be as described in the "Site and Subgrade Preparation" section of this report. The pavement sections recommended in this section are based on procedures contained in the 1993 AASHTO Guide for Design of Pavement Structures.

The following flexible pavement sections are recommended:

Table No. 2 - Flexible Pavement Section

Traffic Condition	Standard Duty	Heavy Duty
Sand subbase thickness, inches	10.0	12.0
Aggregate base thickness, inches	6.0	10.0
Bituminous leveling course thickness, inches	2.0	3.0
Bituminous wearing course thickness, inches	1.5	2.0

The following materials are recommended:

Table No. 3 - Flexible Pavement Materials

Material	Standard Duty	Heavy Duty
Sand subbase	MDOT Class II granular	MDOT Class II granular
Aggregate base	MDOT 21AA Natural Aggregate	MDOT 21AA Natural Aggregate
Bituminous leveling	MDOT 13A	MDOT 3C
Bituminous wearing	MDOT 36A	MDOT 4C
Minimum Binder Grade	PG 58-28	

Sand subbase material should be laboratory tested to confirm MDOT Class II grading requirement. MDOT standard specifications for materials and placement should be observed. We recommend a maximum of 17 percent recycled asphalt pavement (RAP), measured as a percent of asphalt replacement, be utilized in HMA mixes. Air voids should be field regressed to 3.5 percent using liquid asphalt cement.

A natural aggregate base product, often consisting of crushed limestone, is recommended relative to crushed concrete aggregate base products considering the long-term performance risk crushed concrete presents due to potential hydration of free cement and decreased permeability over time.

Construction procedures and workmanship are of key importance with respect to pavement appearance and long-term pavement performance. Key components of workmanship include appropriate joint construction resulting in sufficient density, prevention of segregation, and maintaining a minimum temperature during placement. At a minimum, the procedures outlined in Section 501 of the 2020 MDOT Specifications should be followed with respect to equipment, placement, and temperatures. Compaction of the asphalt courses should range between 92 and 96 percent of the Theoretical Maximum Density (TMD) based on MDOT requirements.

It is recommended that cracks that may develop in the pavement be quickly and properly sealed through a regular maintenance program. Also, the subgrade should be sufficiently sloped to provide drainage within the sand subbase and underdrains should be provided within the subbase, at catch basins and pavement edges, to facilitate drainage. At each catch basin, four underdrains with a watertight connection should extend out radially at least 20 ft.

A suitable rubberized asphalt sealant should be placed between all concrete curb/HMA joints immediately after paving.

Site and Subgrade Preparation

All topsoil, vegetation, roots, and any other miscellaneous debris should be removed from within the proposed construction areas. The limits of the proposed construction area, prior to the placement of any pavements or engineered fill material, should be proofrolled by the Contractor and, where granular soil is present, compacted to at least 95 percent of the soil's maximum ASTM D1557 dry density. Proofrolling is defined as the passing of relatively heavy construction equipment over the soil subgrade under observation by the Geotechnical Engineer. The response of the soil, when subjected to the applied load, is subjectively evaluated by qualified geotechnical personnel with respect to its ability to support the overlying soil or structure. In areas where excessive deflection is observed, special subgrade preparation measures may be recommended to provide an acceptable subgrade condition. These measures may consist of compaction of the subgrade at moisture contents close to the optimum value, undercutting affected areas and replacing with engineered fill, cement- or lime-stabilization, use of a geotextile separation fabric or some combination of these measures.

Unstable or pumping subgrade is a high risk for this site, as fill with debris, organic soil or shallow groundwater conditions were encountered in Borings B-3 to B-6, B-7, B-7A and B-9 to B-11. Remediation of unstable subgrade should be expected. Test pits are recommended in any unstable areas after proof rolling to determine the extent of the unstable soil. Care should be taken during construction to protect the subgrade during periods of precipitation.

Frost-susceptible soil may adversely affect pavement performance through expansion and contraction during freeze-thaw cycles. Per the MDOT Geotechnical Manual, frost susceptible soil is composed of silts, fine silty sand and clays with a high percentage of silt particles. Frost heave textured material is defined as soil with 50 percent silt particles or more and a plasticity index less than 10 and requires removal within the frost penetration depth. Silty sand (SM) was encountered at depths ranging from 2.3 to 5 ft (els 616.9 to 619.6) in Boring B-2 and may present a moderate frost susceptibility risk. Where frost susceptible soil is encountered, we recommend removal of this soil to a depth below frost penetration (42 inches) and replacement with MDOT Class II engineered fill.

Engineered fill is approved on-site or imported soil placed in uniform layers and compacted to a minimum required density. Generally, on-site soil with a group symbol of SP-SM is expected to be suitable for engineered fill. Imported engineered fill should meet the requirements for MDOT Class II granular material.

Granular engineered fill and backfill should be compacted to at least 95 percent of the soil's maximum dry density as determined by the Modified Proctor test (ASTM D1557). Vibratory compaction methods are typically found to be most effective in granular soils; however,

relatively light equipment should be used adjacent to retaining or basement walls to avoid overstressing the walls.

The fill should be placed and compacted in horizontal layers not exceeding 9 inches. Field density tests should be taken on each lift, as the fill is being placed, to verify compliance with compaction specifications. If the earthwork takes place during winter months, fill must not be placed on frozen ground and fill with frozen conglomerations of soil must not be used.

Groundwater

Perched groundwater was encountered within the gravel base above clay in Borings B-7 and B-7A at depths of 1 ft (els 619.4). Generally, control of groundwater is not expected to be a concern for paving operations with the exception of areas near Boring B-7. Groundwater may also be a concern if undercuts are performed due to failing proofrolls. Suitable control of groundwater should be anticipated and planned for accordingly before the start of construction. The Contractor should be responsible for selecting and implementing an appropriate groundwater control system. The Contractor should have previous dewatering experience on sites with similar conditions. Suitable silt and sediment traps should be incorporated into the dewatering system.

CLOSURE

In this report, descriptions of the pavement investigation, encountered conditions, and recommendations for pavement rehabilitation have been provided. The limitations of this study are described in the Appendix.

The recommendations presented in this report are based upon a limited number of subsurface samples obtained from various sampling locations. The samples may not fully indicate the nature and extent of the variations that actually exist between sampling locations. For that reason, among others, we strongly recommend that a qualified geotechnical firm be retained to observe earthwork construction. If variations or other latent conditions become evident during construction, it will be necessary for us to review these conditions and our recommendations as appropriate.

We appreciate this opportunity to provide this service to you on this project. Please contact our office should you have any questions or require further assistance.

Sincerely,

MATERIALS TESTING CONSULTANTS, INC.

Ryan D. Starcher, P.E.
Project Manager

Robert J. Warren, P.E.
Senior Project Manager

Attachments: Figure No. 1 - Boring Location Plan
Appendix
- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- USACE Dynamic Cone Penetrometer (DCP) Reports
- Core Photograph Log

TITLE: BORING LOCATION PLAN		PROJECT: WAYNE STATE UNIVERSITY DETROIT MACK HEALTH CENTER, 400 MACK AVENUE	
SCALE: AS SHOWN	DATE: 01/08/2025	PROJECT NO.: 241763	MTC MATERIALS TESTING CONSULTANTS
FIG. NO.: 1	DR. BY: SS	REV. BY: RS	

APPENDIX

- Limitations
- Test Drilling and Sampling Procedures
- Boring Log Terminology and Classification Outline
- Boring Logs
- USACE Dynamic Cone Penetrometer (DCP) Reports
- Core Photograph Log

LIMITATIONS

Soil Variations

The recommendations in this report are based upon the data obtained from the soil borings. This report does not reflect variations which may occur between these borings, and which would not become evident until construction. If variations then become evident, it would be necessary for a re-evaluation of recommendations of this report, after performing on-site observations.

Warranties

We have prepared this report in accordance with generally accepted soil and foundation engineering practices. We make no other warranties, either expressed or implied, as to the professional advice provided under the terms of our agreement and included in this report. This report is prepared exclusively for our client and may not be relied upon by other parties without written consent from our office.

Boring Logs

In the process of obtaining and testing samples and preparing this report, we follow reasonable and accepted practice in the field of soil engineering. Field logs maintained during drilling describe field occurrences, sampling locations, and other information. The samples obtained in the field are subjected to additional testing in the laboratory and differences may exist between the field logs and the final logs. The engineer reviews the field logs and laboratory test data, and then prepares the final boring logs. Our recommendations are based on the contents of the final logs.

Review of Design Plans and Specifications

In the event that any changes in the design of the building or the location, however slight, are planned, our recommendations shall not be considered valid unless modified or approved in writing by our office. We recommend that we be provided the opportunity to review the final design and specifications in order to determine whether changes in the original concept may have affected the validity of our recommendations, and whether our recommendations have, in fact, been implemented in the design and specifications.

TEST DRILLING AND SAMPLING PROCEDURES

Test Drilling Methods:

_____ Hollow stem auger, ASTM D6151
_____ Mud rotary, ASTM D5783
_____ Casing advancer, ASTM D5872
_____ Rock coring, ASTM D2113
__X__ Core/Hand Auger

Note: Cone penetration test data can be used to interpret subsurface stratigraphy and can provide data on engineering properties of soils. The ASTM procedure does not include a procedure for determining soil classification from CPT testing. Soil classifications shown on CPT logs are based on published procedures and are not based on physical ASTM soil classification tests.

Sampling Methods:

_____ SPT, ASTM D1586, Auto hammer (140 lb., 30" drop, 2" OD split spoon sampler)
__X__ Grab Samples

Note: The number of hammer blows required to drive the SPT sampler 12 inches, after seating 6 inches, is termed the soil N-value and provides an indication of the soil's relative density and strength parameters at the sample location. SPT blow counts in 6 inch increments are recorded on the boring logs.

Drill Rig:

_____ CME 55 (ATV)
_____ Acker Renegade (ATV)
_____ CME 45 Truck
_____ Geoprobe 7822 (ATV)
_____ Geoprobe Rotary Sonic

Boreholes Backfilled With:

__X__ Excavated soil
_____ Cement bentonite grout
_____ Piezometer or Monitoring Well (see notes on logs)
__X__ Concrete or asphalt patch where appropriate

Sample Handling and Disposition:

__X__ Samples labeled, placed in jars, returned to MTC Laboratory
__X__ Discard after 60 days

BORING LOG TERMINOLOGY AND ASTM D 2488 CLASSIFICATION OUTLINE

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE-GRAINED SOILS (major portions retained on No. 200 sieve): includes (1) clean gravel and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density as determined by laboratory tests or standard penetration resistance tests.

Descriptive Terms	Relative Density	SPT Blow Count
Very loose	0 to 15 %	< 5
Loose	15 to 35 %	5 to 10
Medium dense	35 to 65 %	10 to 30
Dense	65 to 85 %	30 to 50
Very dense	85 to 100 %	> 50

Per ASTM D2487, the following conditions must be met based on laboratory testing to justify the label 'well graded' in a soil description.

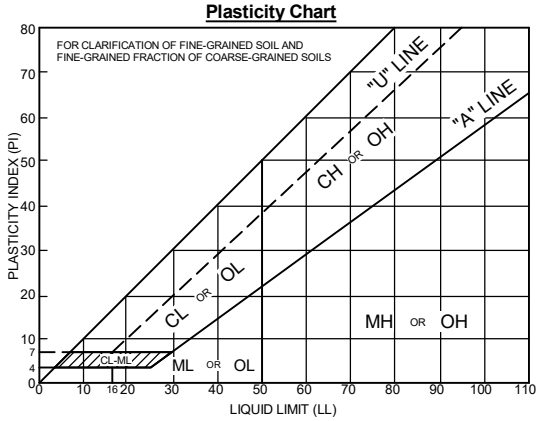
Gravel: $C_U = \frac{D_{60}}{D_{10}}$ greater than 4; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

Sand: $C_U = \frac{D_{60}}{D_{10}}$ greater than 6; $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ between 1 and 3

FINE-GRAINED SOILS (major portions passing on No. 200 sieve): includes (1) inorganic and organic silts and clays, (2) gravelly, sandy, or silty clays, and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings, SPT blow count, or unconfined compression tests.

Descriptive Terms	Unconfined Compressive Strength TSF	SPT Blow Count
Very soft	< 0.25	< 2
Soft	0.25 to 0.5	2 to 4
Medium stiff	0.5 to 1.0	4 to 8
Stiff	1.0 to 2.0	8 to 15
Very stiff	2.0 to 4.0	15 to 30
Hard	> 4.0	> 30

Plasticity Chart



MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL-GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP-SM		POORLY-GRADED SANDS WITH SILT WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CH		INORGANIC CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
HIGHLY ORGANIC SOILS			PT/OL		PEAT AND OTHER HIGHLY ORGANIC SOILS

GENERAL NOTES

1. Classifications are based on the United Soil Classification System and include consistency, moisture, and color. Field descriptions have been modified to reflect results of laboratory tests where deemed appropriate.

2. "Grades with" or "Grades without" may be used to describe soil when characteristics vary within a stratum.

3. Preserved soil samples will be discarded after 60 days unless alternate arrangements have been made.

GROUNDWATER OBSERVATIONS:

During - indicates water level encountered during the boring
End- indicates water level immediately after drilling
Date and Depth - Measurements at indicated date

SAMPLE TYPES AND NUMBERING

S	SPT, split barrel sample, ASTM D1586
U	Shelby tube sample, ASTM D1587
R	Rock core run
*S	Other than 2" split barrel sample
L	SPT with liner, ASTM D1586
A	Auger cuttings
G	Geoprobe liner

MINOR COMPONENT QUANTIFYING TERMS

Less than 5%	TRACE
5 to 10%	FEW
15 to 25%	LITTLE
30 to 40%	SOME
50 to 100%	MOSTLY

GRAIN SIZE

BOULDER	>12"
COBBLE	12" to 3"
COARSE GRAVEL	3" to 0.75"
FINE GRAVEL	0.75" to No. 4
COARSE SAND	No. 4 to No. 10
MEDIUM SAND	No. 10 to No.40
FINE SAND	No. 40 to No. 200

LOG OF BORING

Project No.: 241763
Boring No.: B-1
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=312177.5 E=13478428.2 (MI South ift)
Elevation: 621.7 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.5	0.25					4 1/2" HMA				
621.2	0.50					0.4				
621.0	0.75					8" Gravel Base				
620.7	1.00					1.0				
620.5	1.25	A-1			SP-SM	Brown poorly graded SAND with silt; mostly coarse to fine sand, few silty fines, trace coarse to fine gravel, moist				
620.2	1.50									
620.0	1.75									
619.7	2.00					2.0				
619.5	2.25	A-2			CL	Gray lean CLAY; mostly clayey fines, trace coarse to fine sand, moist	3.0			
619.2	2.50									
619.0	2.75									
618.7	3.00					3.0				
618.5	3.25	A-3			CL	Gray lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist	2.5			
618.2	3.50									
618.0	3.75									
617.7	4.00					4.0				
617.5	4.25	A-4			CL	Brown-gray lean CLAY; mostly clayey fines, few coarse to fine sand, trace coarse to fine gravel, moist	4.0			
617.2	4.50									
617.0	4.75									
616.7	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-2
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=312067 E=13478466 (MI South ift)
Elevation: 621.9 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/19/2024 Date End: 12/19/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.7	0.25					3" HMA 0.3				
621.4	0.50					9" Gravel Base 1.0				
621.2	0.75									
620.9	1.00									
620.7	1.25	A-1			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, trace coarse to fine gravel, moist 2.3				
620.4	1.50									
620.2	1.75									
619.9	2.00									
619.7	2.25									
619.4	2.50	A-2			SM	Brown silty SAND; mostly coarse to fine sand, little silty fines, moist 5.0				
619.2	2.75									
618.9	3.00									
618.7	3.25									
618.4	3.50									
618.2	3.75									
617.9	4.00									
617.7	4.25									
617.4	4.50									
617.2	4.75									
616.9	5.00					End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-3
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311932.8 E=13478532.1 (MI South ift)
Elevation: 621.4 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/19/2024 Date End: 12/19/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 3.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.2	0.25					2 3/4" HMA 0.2				Fill: 0.0' to 3.0'
620.9	0.50					9" Gravel Base				
620.7	0.75									
620.4	1.00					1.0				
620.2	1.25	A-1			CL	Brown lean CLAY; mostly clayey fines, trace coarse to fine gravel, moist, Fill with brick pieces	4.0			
619.9	1.50									
619.7	1.75					1.8				
619.4	2.00	A-2			CL	Dark brown lean CLAY; mostly clayey fines, few coarse to fine gravel, few coarse to fine sand, moist, Fill	3.5			
619.2	2.25									
618.9	2.50									
618.7	2.75									Auger refusal at 3.0' due to possible coarse gravel / COBBLE / brick debris
618.4	3.00					3.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-4
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=312130.2 E=13478570.6 (MI South ift)
Elevation: 621.6 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/19/2024 Date End: 12/19/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.4	0.25					3 3/4" HMA (0.3)				Fill: 0.0' to 3.0'
621.1	0.50					8" Gravel Base (1.0)				
620.9	0.75									
620.6	1.00									
620.4	1.25	A-1			CL	Gray lean CLAY; mostly clayey fines, trace coarse to fine gravel, moist, Fill (1.5)	4.0			
620.1	1.50									
619.9	1.75	A-2			SC	Dark gray clayey SAND with gravel; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist with possible intermixed topsoil, Fill (2.0)				
619.6	2.00									
619.4	2.25	A-3			CL	Dark gray lean CLAY with sand; mostly clayey fines, little coarse to fine sand, trace coarse to fine gravel, moist, Fill (3.0)	3.0			
619.1	2.50									
618.9	2.75									
618.6	3.00									
618.4	3.25	A-4			CL	Brown-gray lean CLAY; mostly clayey fines, trace coarse to fine sand, moist (5.0)	4.5			
618.1	3.50									
617.9	3.75									
617.6	4.00									
617.4	4.25									
617.1	4.50									
616.9	4.75									
616.6	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-5
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=312039.2 E=13478566.9 (MI South ift)
Elevation: 621.4 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 1.5 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.2	0.25					3 3/4" HMA (0.3)				Fill: 0.0' to 1.5'
620.9	0.50					8" Gravel Base (1.0)				
620.7	0.75									
620.4	1.00									
620.2	1.25	A-1			CL	Gray lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist, Fill with brick pieces (1.5)	3.5			Auger refusal at 1.5' due to possible coarse gravel / COBBLE / brick pieces
619.9	1.50					End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-6
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311904.9 E=13478645.5 (MI South ift)
Elevation: 622.1 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
621.9	0.25					4 1/2" HMA (0.4)				Fill: 0.0' to 3.5'
621.6	0.50									
621.4	0.75					8" Gravel Base (1.0)				
621.1	1.00									
620.9	1.25	A-1			SP-SC	Brown poorly graded SAND with clay; mostly coarse to fine sand, few clayey fines, moist, Fill (1.8)				
620.6	1.50									
620.4	1.75									
620.1	2.00	A-2			CL	Dark brown lean CLAY; mostly clayey fines, moist with possible buried topsoil, Fill (2.8)	2.0			
619.9	2.25									
619.6	2.50									
619.4	2.75									
619.1	3.00	A-3			CL	Dark brown lean CLAY; mostly clayey fines, trace coarse to fine gravel, trace organics, moist, Fill (3.5)	2.5			
618.9	3.25									
618.6	3.50									
618.4	3.75	A-4			CL	Brown-gray lean CLAY; mostly clayey fines, trace coarse to fine sand, moist (5.0)	4.5			
618.1	4.00									
617.9	4.25									
617.6	4.50									
617.4	4.75									
617.1	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-7
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311955.7 E=1347870.4 (MI South ift)
Elevation: 620.4 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	1.0
Sampler	Hand Auger	3 1/4"	End	1.0
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.2 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
620.2	0.25					4 1/4" HMA				Fill: 0.0' to 1.5'
619.9	0.50					0.4				
619.7	0.75					8" Gravel Base				
619.4	1.00					1.0				
619.2	1.25	S-1			CL	Brown-gray lean CLAY; mostly clayey fines, trace coarse to fine sand, trace coarse to fine gravel, moist, Fill	3.5			
618.9	1.50					1.5				
618.7	1.75	S-2			PT	Black fibrous PEAT; wet with wood fragments				
618.4	2.00					2.2				
						End of Boring				Auger refusal at 2.2' due to caving soil

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-7A
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311955.7 E=1347870.4 (MI South ift)
Elevation: 620.4 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	1.0
Sampler	Hand Auger	3 1/4"	End	1.0
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
620.2	0.25					4" HMA (0.3)				Fill: 0.0' to 2.5'
619.9	0.50					8" Gravel Base (1.0)				
619.7	0.75									
619.4	1.00									
619.2	1.25	A-1			CL	Gray lean CLAY; mostly clayey fines, few coarse to fine gravel, trace coarse to fine sand, moist, Fill (1.5)	4.0			
618.9	1.50									
618.7	1.75	A-2			CL	Gray lean CLAY with sand; mostly clayey fines, some coarse to fine sand, trace coarse to fine gravel, moist, Fill with possible intermixed buried topsoil (2.5)	1.0			
618.4	2.00									
618.2	2.25									
617.9	2.50									
617.7	2.75	A-3			CL	Brown lean CLAY; mostly clayey fines, few medium to fine sand, trace coarse to fine gravel, moist (5.0)	4.5			
617.4	3.00									
617.2	3.25									
616.9	3.50									
616.7	3.75									
616.4	4.00									
616.2	4.25									
615.9	4.50									
615.7	4.75									
615.4	5.00									
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-8
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311841.5 E=13478801.8 (MI South ift)
Elevation: 619.7 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/18/2024 Date End: 12/18/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	N/A
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
619.5	0.25					5" HMA				
619.2	0.50					0.4				
619.0	0.75					7" Gravel Base				
618.7	1.00					1.0				
618.5	1.25	A-1				Brown lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist	4.0			
618.2	1.50									
618.0	1.75									
617.7	2.00									
617.5	2.25	A-2					3.5			
617.2	2.50									
617.0	2.75									
616.7	3.00				CL					
616.5	3.25									
616.2	3.50									
616.0	3.75									
615.7	4.00									
615.5	4.25									
615.2	4.50									
615.0	4.75									
614.7	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-9
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: IB Rev. By: RS
Coordinates: N=311778.3 E=13478869.3 (MI South ift)
Elevation: 620.6 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/17/2024 Date End: 12/17/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
620.4	0.25					3 1/2" HMA (0.3)				Fill: 0.0' to 5.0'
620.1	0.50					8" Gravel base (0.9)				
619.9	0.75									
619.6	1.00									
619.4	1.25	A-1			CL	Brown lean CLAY with sand; mostly clayey fines, little coarse to fine sand, trace coarse to fine gravel, moist, Fill with occasional asphalt and concrete debris	4.5			
619.1	1.50									
618.9	1.75									
618.6	2.00									
618.4	2.25	A-2				Grades dark brown	4.0			
618.1	2.50					(2.5)				
617.9	2.75	A-3			CL	Brown and gray lean CLAY; mostly clayey fines, few coarse to fine sand, trace fine gravel, moist, Fill	4.0			
617.6	3.00									
617.4	3.25									
617.1	3.50									
616.9	3.75	A-4					3.5			
616.6	4.00									
616.4	4.25									
616.1	4.50									
615.9	4.75									
615.6	5.00					(5.0)				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-10
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates: N=311672 E=13478882.9 (MI South ift)
Elevation: 620.0 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/17/2024 Date End: 12/17/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 2.6 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
619.8	0.25					4" HMA (0.3)				Fill: 0.0' to 2.6'
619.5	0.50					13" Gravel Base (1.4)				
619.3	0.75									
619.0	1.00									
618.8	1.25									
618.5	1.50									
618.3	1.75	A-1			SC	Brown clayey SAND; mostly coarse to fine sand, little clayey fines, few coarse to fine gravel, moist with intermixed brick and concrete debris, Fill Occasional glass fragments observed at 2.0' (2.6)				
618.0	2.00									
617.8	2.25									
617.5	2.50									
						End of Boring				Hand auger refusal at 2.6' due to possible coarse gravel / COBBLE

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

LOG OF BORING

Project No.: 241763
Boring No.: B-11
Sheet: 1 of 1

Project: WSU Pavement Investigation, 400 Mack
Client: Wayne State University
Location: Detroit, Michigan
Drill Type: Hand Auger
Crew Chief: Field Eng.: BG Rev. By: RS
Coordinates: N=311671.8 E=13478763.6 (MI South ift)
Elevation: 620.9 ft Datum: NAVD 88 (GPS Observation)
Notes:

Plugging Record: Backfilled borehole with compacted cuttings, patched pavement with cold patch.

Date Begin: 12/17/2024 Date End: 12/17/2024

Tooling	Type	Dia.	Groundwater, ft.	
Casing			During	None
Sampler	Hand Auger	3 1/4"	End	NA
Core			Seepage	
Tube			Date	Depth, ft.
SPT Hammer				

Depth Drilled: 5.0 ft.

Component Percentages: Trace < 5%, Few 5-10%, Little 15-25%, Some 30-45%, Mostly 50-100%

QP = Calibrated Penetrometer (tons/sq. ft.)

Elev. FT.	Depth FT.	Sample Number	Recov. FT.	Dyn. Cone Eq. "N": ASTM STP 399	*USCS Group Symbol	*DESCRIPTION	QP tsf	MST %	DD pcf	REMARKS
620.7	0.25					3 1/2" HMA 0.3				Fill: 0.0' to 5.0'
620.4	0.50					12" Rubblized Concrete Gravel Base 1.3				
620.2	0.75									
619.9	1.00									
619.7	1.25									
619.4	1.50									
619.2	1.75	A-1				Dark gray lean CLAY with sand; mostly clayey fines, little coarse to fine sand, moist, Fill with occasional asphalt debris	4.0			
618.9	2.00									
618.7	2.25									
618.4	2.50									
618.2	2.75									
617.9	3.00									
617.7	3.25				CL					
617.4	3.50									
617.2	3.75									
616.9	4.00									
616.7	4.25									
616.4	4.50									
616.2	4.75									
615.9	5.00					5.0				
						End of Boring				

* Visual estimate following ASTM D 2488 unless laboratory testing has been performed. Stratification changes are approximated between samples.

MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-1 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/18/2024 **Core Location:** B-1

Field Eng: IB

Elevation: 621.7

Depth to Start of Test From Surface (in): 8.3 **Total Depth of Test (in):** 31.3 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	8.3	--	--	--	
2	59	59	30	10.7	1	30	6	
2	104	45	23	12.4	1	23	9	
2	159	55	28	14.6	1	28	7	
2	231	72	36	17.4	1	36	5	
1	329	98	98	21.3	1	98	1.7	
1	386	57	57	23.5	1	57	3.2	
1	431	45	45	25.3	1	45	4.1	
2	501	70	35	28.1	1	35	5	
2	584	83	42	31.3	1	42	4.4	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

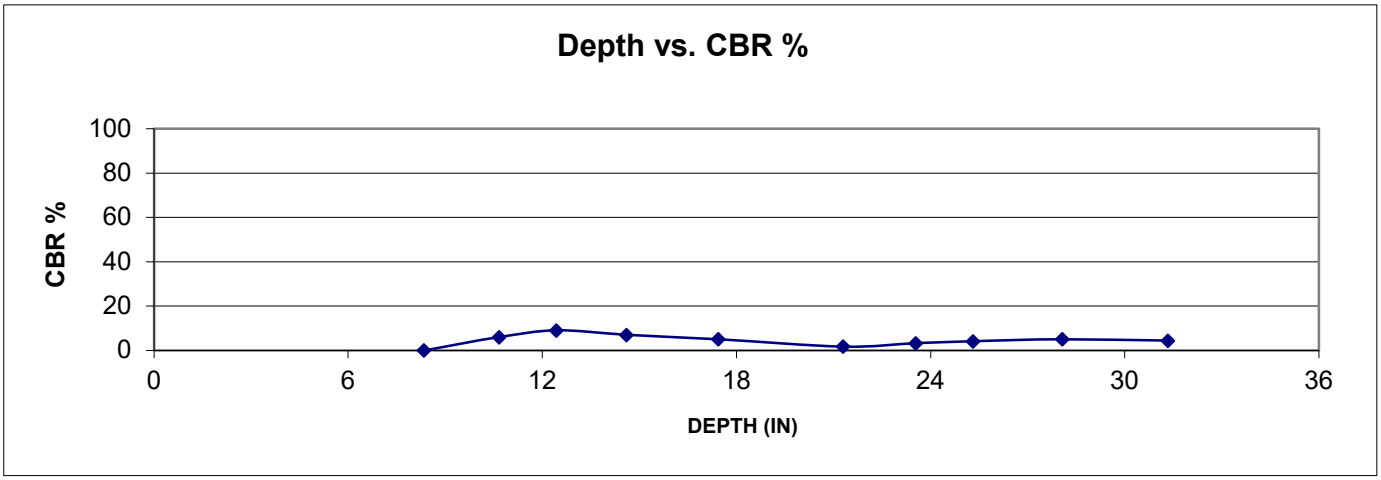
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-2 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/19/2024 **Core Location:** B-2

Field Eng: IB

Elevation: 621.9

Depth to Start of Test From Surface (in): 5.1 **Total Depth of Test (in):** 32.6 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	5.1	--	--	--	
25	47	47	2	7.0	1	2	100	
21	99	52	2	9.0	1	2	100	
14	152	53	4	11.1	1	4	60	
7	199	47	7	13.0	1	7	35	
6	247	48	8	14.8	1	8	30	
7	306	59	8	17.2	1	8	30	
8	357	51	6	19.2	1	6	40	
8	405	48	6	21.1	1	6	40	
10	456	51	5	23.1	1	5	50	
7	507	51	7	25.1	1	7	35	
8	561	54	7	27.2	1	7	35	
7	613	52	7	29.3	1	7	35	
7	667	54	8	31.4	1	8	30	
7	699	32	5	32.6	1	5	50	

[A] Number of hammer blows between test readings

[B] Cumulative penetration after each set of hammer blows

[C] Difference in cumulative penetration (Footnote B) between readings

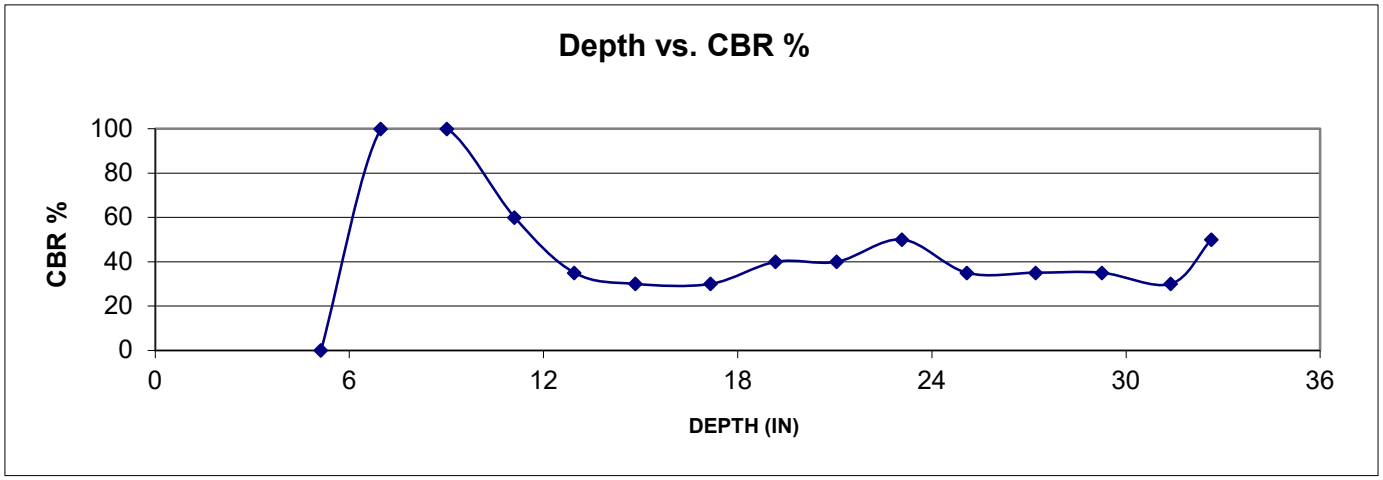
[D] Footnote C divided by Footnote E

[E] Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer

[F] Footnote D X Footnote E

[G] From CBR versus DCP Index correlation

*[H] Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-3 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/19/2024 **Core Location:** B-3

Field Eng: IB

Elevation: 621.4

Depth to Start of Test From Surface (in): 6.2 **Total Depth of Test (in):** 31.7 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	6.2	--	--	--	
4	58	58	15	8.5	1	15	14	
2	149	91	46	12.0	1	46	4	
1	213	64	64	14.6	1	64	2.8	
1	249	36	36	16.0	1	36	5	
3	336	87	29	19.4	1	29	7	
2	421	85	43	22.8	1	43	4.3	
5	460	39	8	24.3	1	8	30	
4	515	55	14	26.5	1	14	15	
10	558	43	4	28.1	1	4	60	
9	611	53	6	30.2	1	6	40	
13	648	37	3	31.7	1	3	100	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

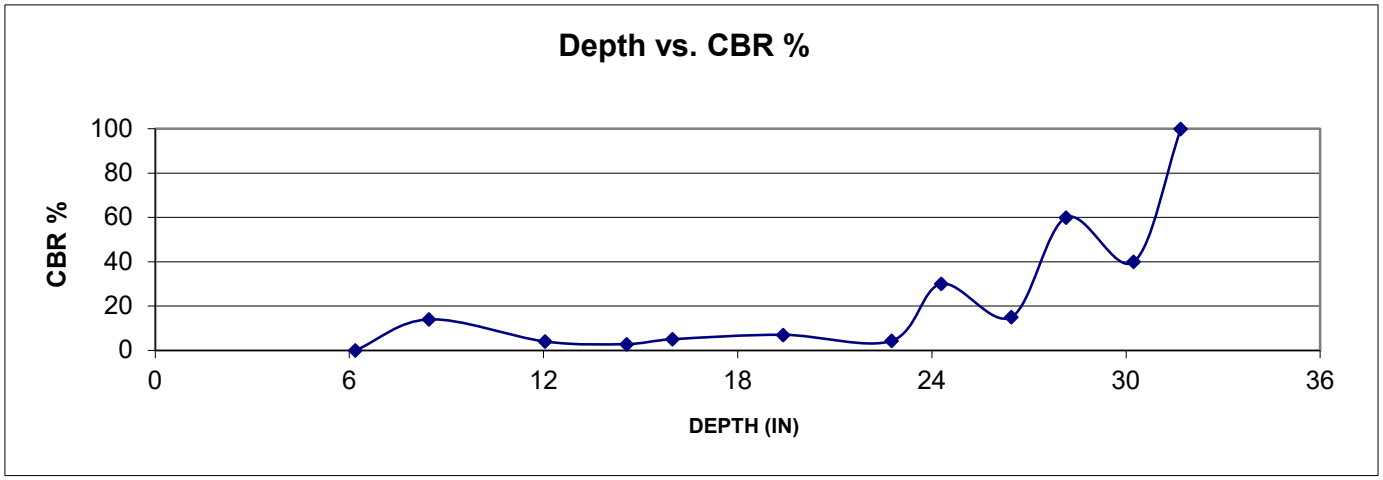
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-4 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/19/2024 **Core Location:** B-4

Field Eng: IB

Elevation: 621.6

Depth to Start of Test From Surface (in): 6.1 **Total Depth of Test (in):** 30.2 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	6.1	--	--	--	
4	62	62	16	8.5	1	16	13	
2	115	53	27	10.6	1	27	7	
1	156	41	41	12.2	1	41	4.6	
2	232	76	38	15.2	1	38	5	
1	258	26	26	16.3	1	26	8	
3	307	49	16	18.2	1	16	13	
3	375	68	23	20.9	1	23	9	
1	408	33	33	22.2	1	33	6	
2	459	51	26	24.2	1	26	8	
3	506	47	16	26.0	1	16	13	
4	560	54	14	28.1	1	14	15	
4	613	53	13	30.2	1	13	16	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

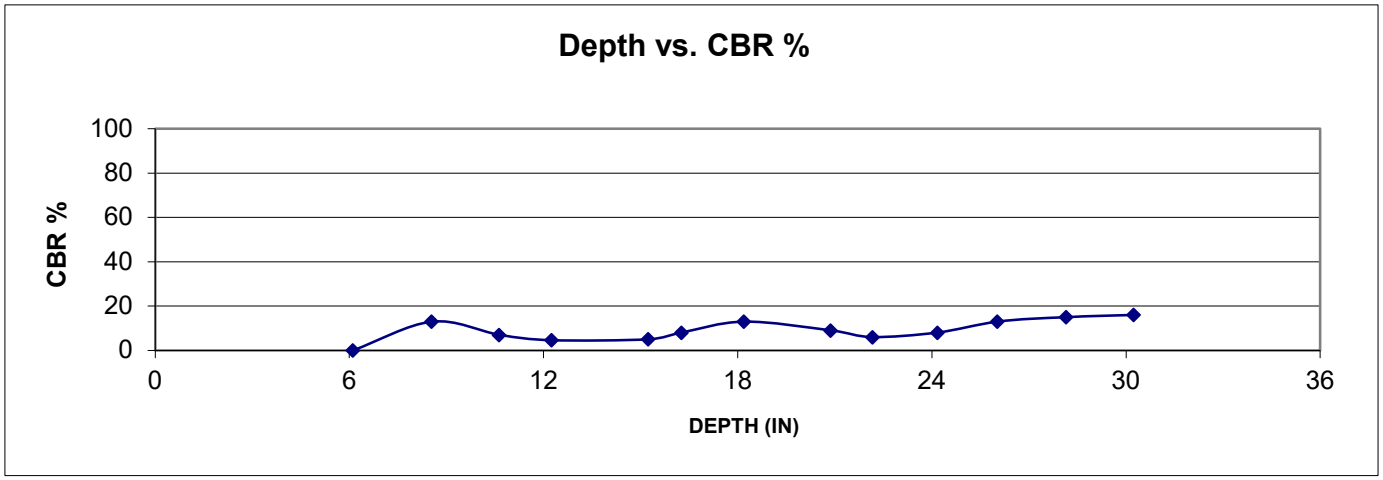
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-5 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/19/2024 **Core Location:** B-5

Field Eng: IB

Elevation: 621.4

Depth to Start of Test From Surface (in): 5.9 **Total Depth of Test (in):** 31.5 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	5.9	--	--	--	
3	75	75	25	8.9	1	25	8	
1	108	33	33	10.2	1	33	6	
3	188	80	27	13.3	1	27	7	
1	219	31	31	14.5	1	31	6	
2	277	58	29	16.8	1	29	7	
1	307	30	30	18.0	1	30	6	
2	360	53	27	20.1	1	27	7	
5	406	46	9	21.9	1	9	25	
8	462	56	7	24.1	1	7	35	
4	515	53	13	26.2	1	13	16	
2	584	69	35	28.9	1	35	5	
1	613	29	29	30.0	1	29	7	
2	651	38	19	31.5	1	19	11	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

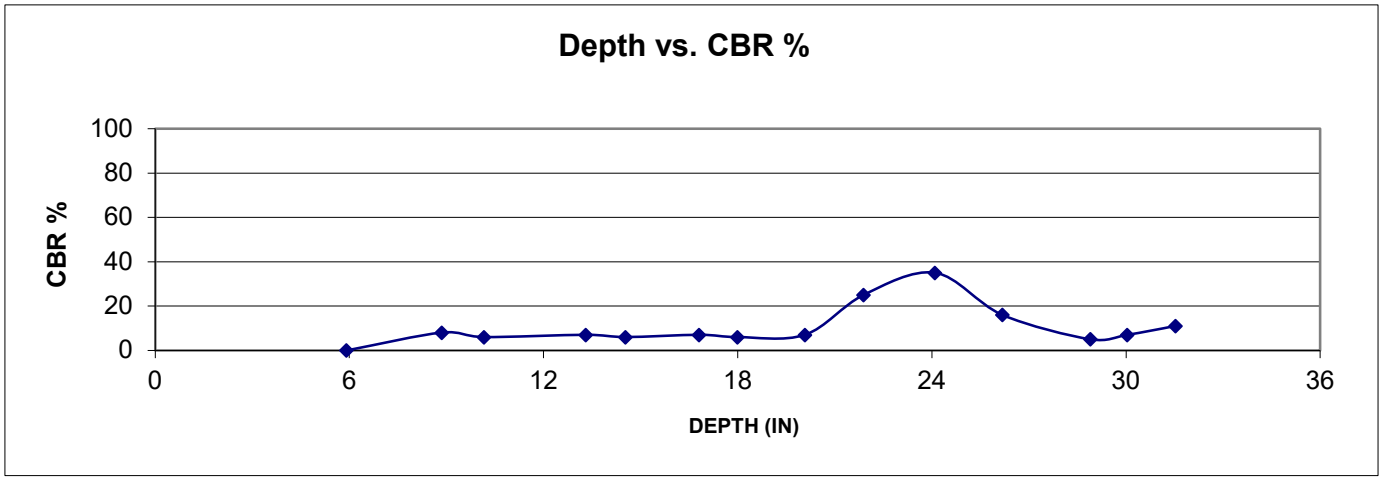
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-6 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/18/2024 **Core Location:** B-6

Field Eng: IB

Elevation: 622.1

Depth to Start of Test From Surface (in): 6.1 **Total Depth of Test (in):** 31.8 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	6.1	--	--	--	
8	62	62	8	8.5	1	8	30	
6	103	41	7	10.1	1	7	35	
4	160	57	14	12.4	1	14	15	
3	210	50	17	14.3	1	17	12	
5	266	56	11	16.5	1	11	20	
4	318	52	13	18.6	1	13	16	
2	363	45	23	20.4	1	23	9	
2	415	52	26	22.4	1	26	8	
2	471	56	28	24.6	1	28	7	
1	509	38	38	26.1	1	38	5	
2	572	63	32	28.6	1	32	6	
1	617	45	45	30.4	1	45	4.1	
1	653	36	36	31.8	1	36	5	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

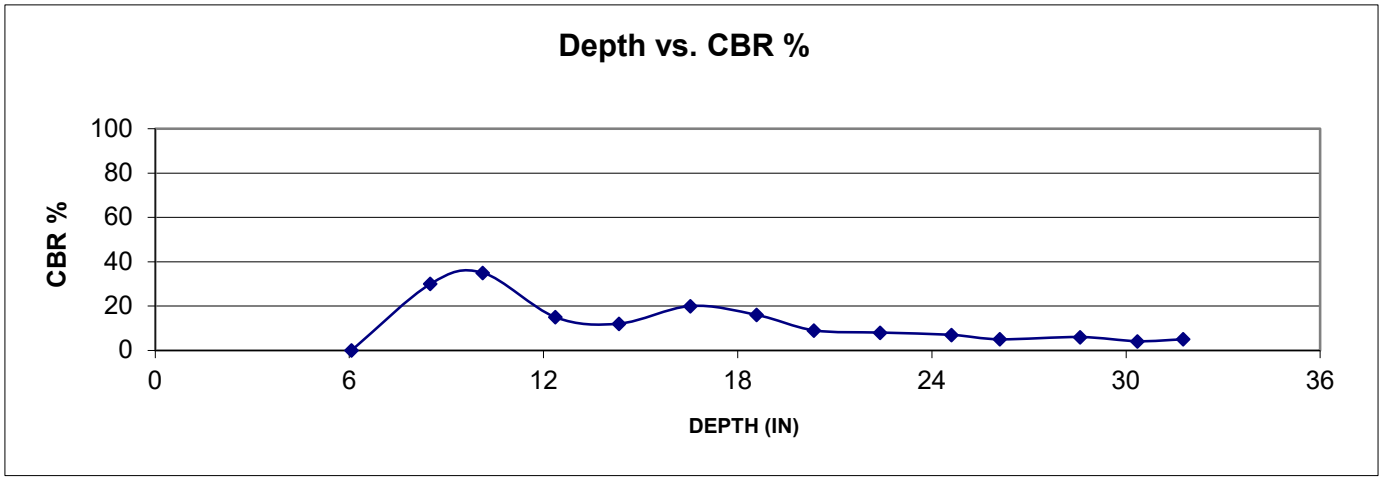
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-7 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/18/2024 **Core Location:** B-7

Field Eng: IB

Elevation: 620.4

Depth to Start of Test From Surface (in): 6.9 **Total Depth of Test (in):** 32.4 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	6.9	--	--	--	
3	47	47	16	8.7	1	16	13	
3	117	70	23	11.5	1	23	9	
1	188	71	71	14.3	1	71	2.5	
1	224	36	36	15.7	1	36	5	
1	252	28	28	16.8	1	28	7	
3	300	48	16	18.7	1	16	13	
7	354	54	8	20.8	1	8	30	
14	404	50	4	22.8	1	4	60	
8	452	48	6	24.7	1	6	40	
26	505	53	2	26.8	1	2	100	
22	557	52	2	28.8	1	2	100	
10	617	60	6	31.2	1	6	40	
9	647	30	3	32.4	1	3	80	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

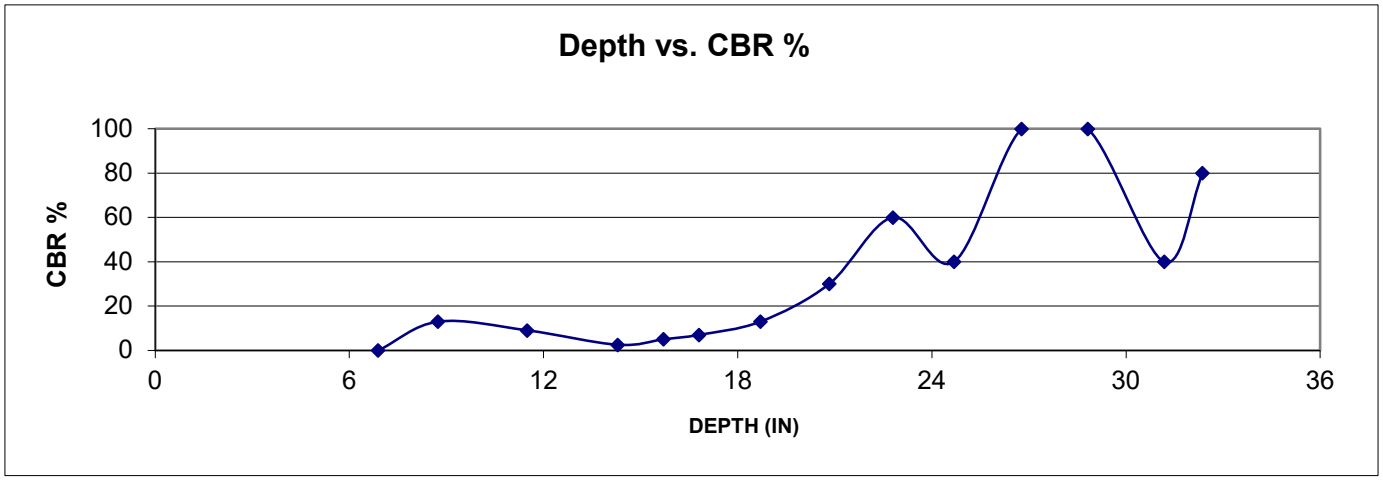
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-8 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/18/2024 **Core Location:** B-8

Field Eng: IB

Elevation: 619.7

Depth to Start of Test From Surface (in): 7.9 **Total Depth of Test (in):** 30.9 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	7.9	--	--	--	
3	85	85	28	11.3	1	28	7	
1	155	70	70	14.0	1	70	2.5	
1	213	58	58	16.3	1	58	3.1	
2	298	85	43	19.6	1	43	4.3	
2	363	65	33	22.2	1	33	6	
3	425	62	21	24.6	1	21	10	
3	475	50	17	26.6	1	17	12	
3	532	57	19	28.9	1	19	11	
2	584	52	26	30.9	1	26	8	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

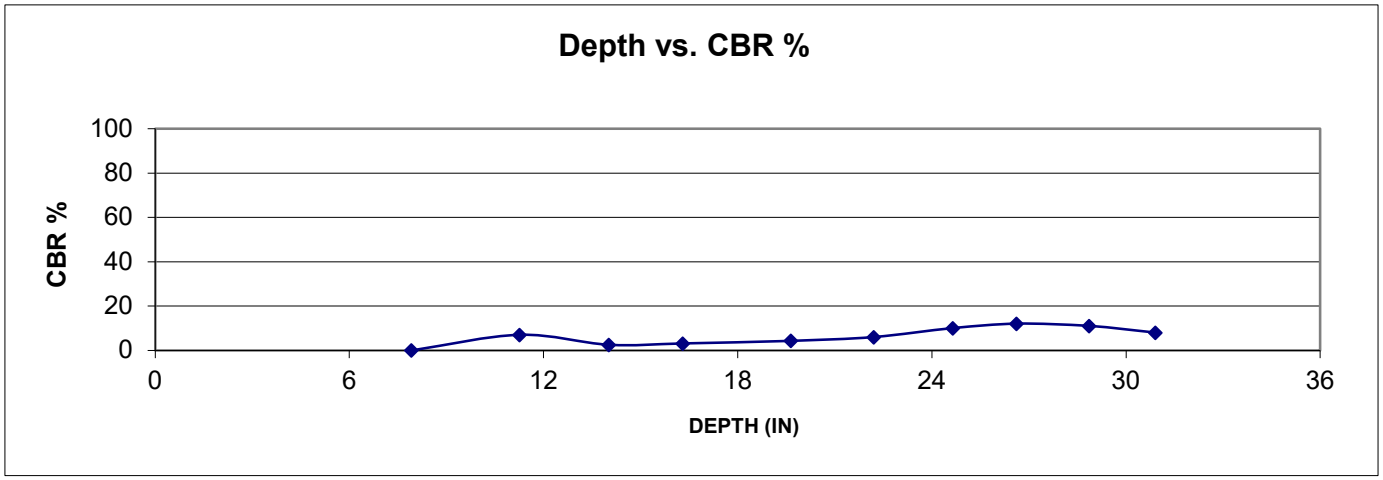
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-9 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/17/2024 **Core Location:** B-9

Field Eng: BG

Elevation: 619.7

Depth to Start of Test From Surface (in): 8.0 **Total Depth of Test (in):** 32.0 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	8.0	--	--	--	
4	56	56	14	10.2	1	14	15	
3	106	50	17	12.1	1	17	12	
3	158	52	17	14.2	1	17	12	
3	211	53	18	16.3	1	18	11	
4	262	51	13	18.3	1	13	16	
3	306	44	15	20.0	1	15	14	
3	365	59	20	22.3	1	20	10	
2	415	50	25	24.3	1	25	8	
2	469	54	27	26.4	1	27	7	
2	520	51	26	28.4	1	26	8	
2	559	39	20	30.0	1	20	10	
3	611	52	17	32.0	1	17	12	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

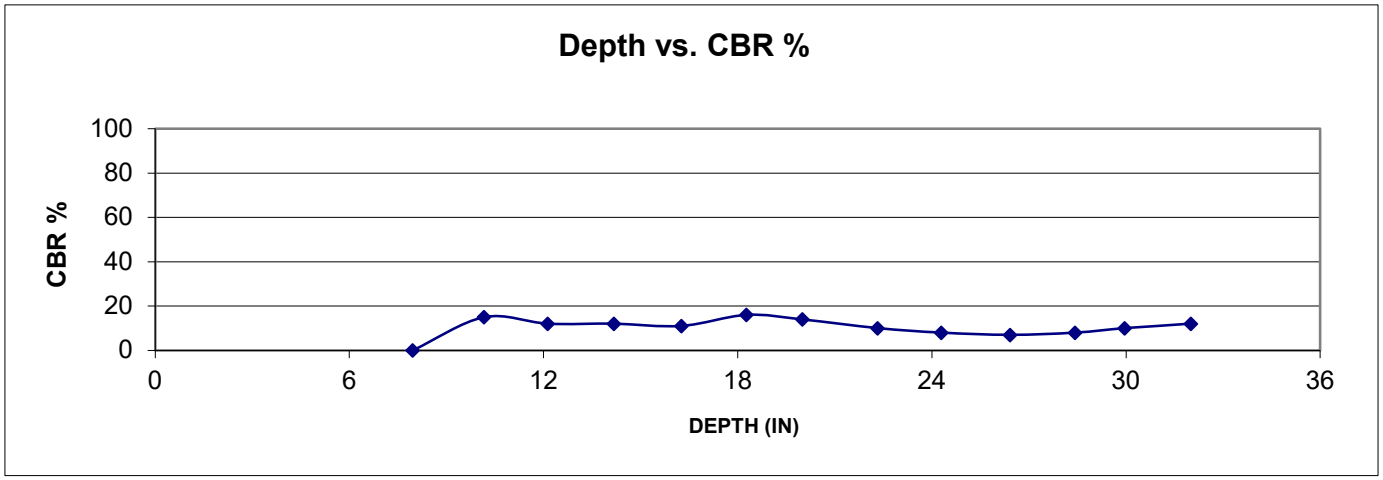
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-10 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/17/2024 **Core Location:** B-10

Field Eng: BG

Elevation: 620

Depth to Start of Test From Surface (in): 5.7 **Total Depth of Test (in):** 31.8 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	5.7	--	--	--	
27	50	50	2	7.6	1	2	100	
24	105	55	2	9.8	1	2	100	
8	152	47	6	11.7	1	6	40	
5	219	67	13	14.3	1	13	16	
4	253	34	9	15.6	1	9	25	
14	305	52	4	17.7	1	4	60	
8	360	55	7	19.8	1	7	35	
8	411	51	6	21.9	1	6	40	
3	464	53	18	23.9	1	18	11	
2	526	62	31	26.4	1	31	6	
1	663	137	137	31.8	1	137	1.2	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

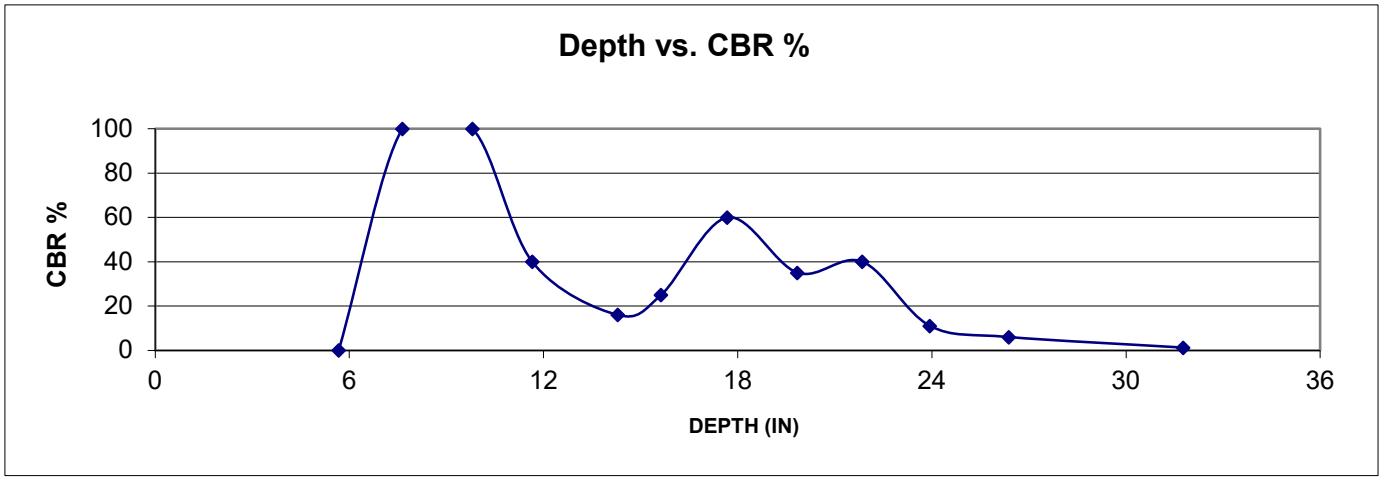
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MATERIALS TESTING CONSULTANTS, INC.	USACE DCP DATA SHEET	Project No.: 241763 DCP/Core No.: B-11 Sheet: 1 of 1

Project: Wayne State University Pavement Investigation, 400 Mack **Client:** Wayne State University

Location: Detroit, Michigan

Date: 12/17/2024 **Core Location:** B-11

Field Eng: BG

Elevation: 620.9

Depth to Start of Test From Surface (in): 18.0 **Total Depth of Test (in):** 32.1 **Depth to Groundwater(in):** None

Number of Blows[A]	Cumulative Penetration (mm)[B]	Penetration Between Readings (mm)[C]	Penetration Per Blow (mm)[D]	Depth from Surface (in)	Hammer Factor[E]	DCP Index mm/blow[F]	CBR %[G]	Comments
--	0	--	--	18.0	--	--	--	
2	47	47	24	19.8	1	24	8	
3	107	60	20	22.2	1	20	10	
2	138	31	16	23.4	1	16	13	
4	202	64	16	25.9	1	16	13	
3	258	56	19	28.1	1	19	11	
2	307	49	25	30.1	1	25	8	
2	359	52	26	32.1	1	26	8	

[A] *Number of hammer blows between test readings*

[B] *Cumulative penetration after each set of hammer blows*

[C] *Difference in cumulative penetration (Footnote B) between readings*

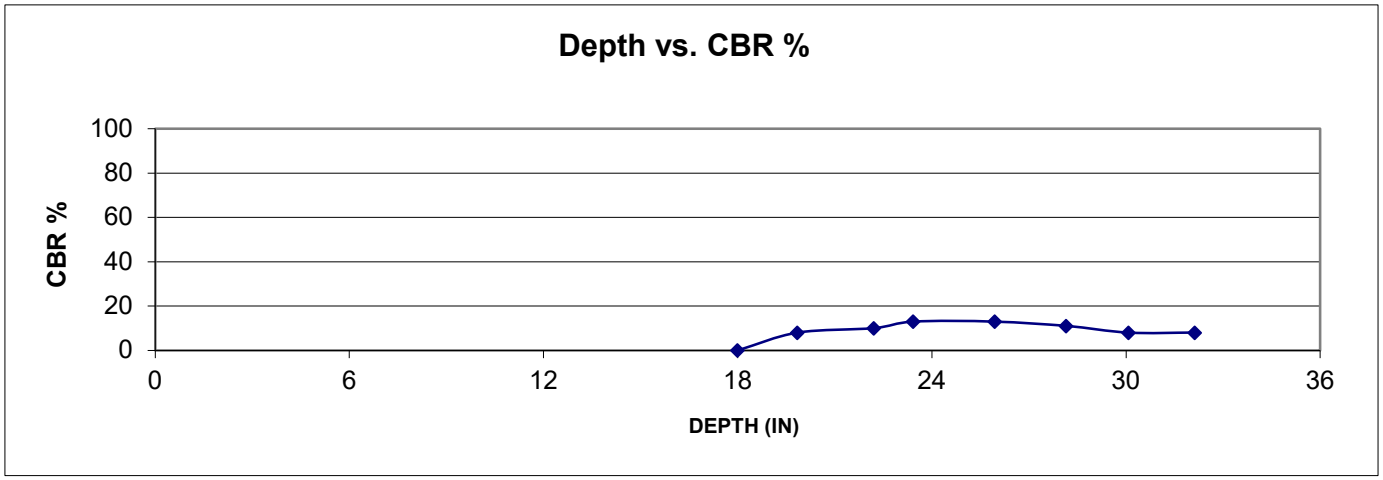
[D] *Footnote C divided by Footnote E*

[E] *Enter 1 for 8-kg (17.6lb) hammer; 2 for 4.6-kg (10.8lb) hammer*

[F] *Footnote D X Footnote E*

[G] *From CBR versus DCP Index correlation*

[H] *Adjusted CBR for CL soil w/ CBR <10 as recommended by USACE: CBR = 1/(0.017019*DCPindex)^2*



MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-1

BORING B-2

MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-3

BORING B-4

MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-5

BORING B-6

MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-7

BORING B-7A

MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-8

BORING B-9

MTC MATERIALS TESTING CONSULTANTS

Project Name: WSU PAVEMENT INVESTIGATION, 400 MACK

Client: WAYNE STATE UNIVERSITY Project No.: 241763

Recorded By: RS Date: 12/30/2024

BORING B-10

BORING B-11

TEG
Environmental Services, Inc.

"The bridge between a cleaner environment and revitalized communities"

DUE CARE PLAN

For:

COMMERCIAL BUILDING PROPERTY@
400 MACK AVENUE & 3515 BEAUBIEN STREET
DETROIT, WAYNE COUNTY
MICHIGAN 48202

Prepared For:

WAYNE STATE UNIVERSITY
5454 CASS AVENUE, RM. 138
DETROIT, MICHIGAN 48202

Prepared by:

TEG Environmental Services, Inc.
423 N. Hamilton
Ypsilanti, MI 48197

May 17, 2021

TEG Project No: 21-628-005-DCP

TABLE OF CONTENTS

APPENDICES

1.0 Introduction

On behalf of Wayne State University (Client), TEG Environmental Services, Inc. (TEG) has prepared this Due Care Plan (DCP) for an unnamed commercial property building and associated lands located at 400 Mack Avenue and 3515 Beaubien, in the City of Detroit, Wayne County, Michigan. This DCP has been prepared to pursuant to the rules promulgated by Natural Resources and Environmental Act (NREPA) 1994 PA 451, as amended Section 20107a and Section 21304c. The 4.5-acre subject property consist of a single 2-story with basement commercial building that occupies approximately 51,350 square feet (sq ft), and associated parking lot areas. The most recent use of the subject building and associated property appears to be for medical administrative offices that support the adjacent Detroit Medical Center

TEG conducted its initial Phase I Environmental Site Assessment (ESA) on May 15, 2019, and a subsequent update completed on March 17, 2021. During the performance of TEG's initial ESA, historical research documented several Historic Recognized Environmental Conditions (HRECs) associated with the subject property that were identified in several ESAs and Phase II Soil Investigations (PhIIs) conducted by other firms circa 1996-97 and 2016. As a result of the detection of select heavy metals, polynuclear aromatic compounds (PNAs) and other regulated compounds in subsurface soils during the PhII episodes, two (2) separate Baseline Environmental Assessments (BEAs) were prepared for the subject property in 1999 and 2016. The BEAs were prepared to provide liability protection from pre-existing areas of soil contamination for the prospective new purchasers and/or occupiers of the subject property. In both instances, the BEAs confirmed that the subject property is a "Facility", as defined by NREPA, 1994 PA 451, as amended (Part 201).

- According to Section 20101(1)(s) of Part 201 of NREPA (1994 P.A. Act 451, as amended), "Facility means any area, place, parcel or parcels of property, or portion of a parcel of property where hazardous substance in excess of concentrations that satisfy the cleanup criteria for unrestricted residential use has been released, deposited, disposed of, or otherwise comes to be located."

The Client anticipates finalizing the acquisition the subject property by June 2021. The NREPA requires that a person who owns or operates property that he/she has knowledge is a "Facility" must do adhere to the following, even if they are not liable for the pre-existing subsurface soil contamination:

1. Undertake measures as are necessary to prevent exacerbation.

2. Exercise due care by undertaking response activity necessary to mitigate unacceptable exposure to hazardous substances, mitigate fire and explosion hazards due to hazardous substances, and allow for the intended use of the property in a manner that protects the public health and safety.

3. Take reasonable precautions against the reasonably foreseeable acts or omissions of a third party and the consequences that could result from those acts or omissions.

4. Provide reasonable cooperation, assistance, and access to the persons that are authorized to conduct response activities at the property.

5. Comply with appropriate land use or resource use restrictions established or relied on in connection with the response activities.

6. Not impede the effectiveness or integrity of appropriate land use or resource use restriction.

This DCP outlines how the proposed activities at the subject property will satisfy the requirements of the NREPA and the associated administrative rules on behalf of the Client. For the foreseeable future the subject property will continue to be utilized for administrative office purposes. No demolition or other potential disturbance of the site subsurface soils is planned for the property by the Client at this time. A current site layout has been presented in **Appendix A** of this DCP document. Should the property use change or any construction and/or demolition occur on the property, the methods of compliance with due care responsibilities should be reviewed and this DCP should be updated. If the property is sold again in the future, this DCP and all other relevant environmental reports should be provided to the new property owner.

2.0 Detailed Characteristics of Property Use

2.1 Location and Legal Description

The 400 Mack Avenue and 3515 Beaubien subject property is located on the south side of Mack Avenue, between Brush and Beaubien Streets, in the medical and university districts of the City of Detroit, Wayne County, Michigan. Legal descriptions for the subject property may be found in Appendix **10.5** of TEG's ESA, a copy of which has been included in Appendix **B** of this DCP document. A site location map may be found in **Appendix A, Site Diagrams** of this DCP. A property overview has been provided, as follows:

Address	Parcel ID	Area (acres)
400 Mack	01003830-6	3.788
421 Eliot	01000867	0.076
429 Eliot	01000868	0.076
437 Eliot	01000869	0.076
3515 Beaubien	010003720-2	0.594

2.2 Site and Vicinity General Characteristics

The subject property consists of a single 2-story with a small basement, brick construction commercial office building with associated parking lot areas to the north, south and east sides of the structure. The rectangular-shaped property occupies approximately 4.5-acres of land. The proximate adjacent property uses were observed to be vacant parcels, medical care facilities, some abandoned commercial structures and some residential buildings. The subject property is located immediately south, across Mack Avenue from the Detroit Medical Center. The entire property is surrounded by 6-feet high black metal fencing, which provides access to private parking areas associated with the main building.

2.3 Historical Property Uses

Historical use of the subject property was determined by TEG after review of several sources, including but not limited to Fire Insurance Maps (FIMs), City Directory (CD) listings and municipal records sources, i.e., Building Dept, Assessors Office, etc.

- **1897**: Most of the subject property area was depicted as occupied by residential building structures. A furniture upholstering business was located at 3515-17 Beaubien aka 641 Beaubien (address was changed at a later date).

- **1921**: An on site Detroit Edison substation is illustrated at 400 Mack; an on site garage is depicted at 422 Benton. On site stores were indicated on Beaubien at 2401-07, 3433-39 and 3535-17. A church was also located at 3501 Beaubien/461 Eliot.

- **1951**: An onsite gas station is depicted at 400 Mack; a structure labeled "Fuel" was illustrated at the rear of 421 Eliot; a store at 420 Eliot; other stores listed at 3490-92 Brush; a suspected gas station with three (3) storage tanks is dcpicted at 3450 Brush; a hand laundry was located in a flat at 3426 Brush; a factory is depicted at 422-28 Benton, and a store at 421 Erskine; stores were also depicted at 3511-21 Beaubien.

- **1988**: A significant number of buildings that were illustrated in prior maps were no longer present within the subject property area in 1988 or had been marked for demolition. The onsite factory at 422-26 Benton is listed as vacant; it appears as though the gas station building was still present at 400 Mack, however there is no indication that the tanks were still there.

- **1991**: The FIM prepared for this year is almost identical to the 1988 map.

- **2002**: All remaining structures from previously reviewed FIMs are marked as having been demolished and the current subject building is depicted.

City Directory research indicated that the following business operations had historically occupied portions of the subject property: food markets, beauty shops, a dry cleaners, a laundry, a tailor, a dentist office, a chiropractor, a real estate office, a cobbler, gas stations, an auto repair shop and other unspecified business offices.

2.4 Property Features

The subject property covers an area of approximately 4.5-acres and contains a 51,350 sq ft office building that is currently occupied by several medical administration offices. The subject property building contains conference and meeting rooms, individual offices, training rooms and demonstration space. The main building on the subject property contains a natural gas powered air handling system with a single, large boiler located in the basement of the facility. Sewage disposal and potable water are supplied from the City of Detroit municipal services. Entrance into the subject grounds is accessed by gates that front onto Brush to the west and Beaubien to the east.

2.5 Current Property Uses

Please see the previous **Section 2.4**. Additionally, the prospective new purchaser of the property, Wayne State University, does not expect to change the current utilization of the subject property and does not plan on use or storage of significant quantities of hazardous substances.

3.0 Summary of Environmental Investigations

3.1 Earth Tech (1995-99)

Select heavy metals and polynuclear aromatic compounds were identified at the subject property above Michigan Dept of Environmental Quality (MDEQ) Part 201 Generic Residential Cleanup Criteria (GRCC) in 1996. The parameter concentrations above MDEQ Part 201 GRCC represent a past release at the property. As a result, a BEA was filed on behalf of the then prospective owner, Hospice of Michigan. In summation, the following environmental reports were prepared on the 400 Mack Avenue/3515 Beaubien Street subject property by the consultant firm Earth Tech:

- Phase I ESA, Brush Park Project, A 3-Block Area Bounded by Mack Avenue, Brush, Beaubien and Erskine Streets, Detroit, Michigan, December 22, 1995;
- EM-31 Survey, Brush Park, Parcels 20, 22 and 28, Detroit, Michigan, June 12, 1996;
- Phase II ESA of Parcels 11, 20, 22 and 28 for Brush Park Rehabilitation Project Area, Detroit, Michigan, September 23, 1996;
- BEA, Hospice of Michigan, Brush Park Rehabilitation Project Area, Detroit, Michigan, December 13, 1999.

Copies of the Earth Tech ESA, PhII and BEA reports may be found in **Appendix B** of this DCP.

3.2 ASTI (2016)

A former auto service and fueling station was formerly located at 400 Mack Avenue and it was determined to have adversely impacted the site soils in the vicinity of the northwest corner of the site during PhII activities conducted by the consulting firm ASTI in 2016. This prompted the filing of the 2nd BEA for the subject property, specific to this portion of the site. Select heavy metals and PNA compounds were detected in subsurface soils as the contaminants of concern in this area.

In summation, the following environmental reports were prepared on the 400 Mack Avenue/3515 Beaubien Street subject property by the consultant firm ASTI:

- Phase I ESA, Medical Office Building, 400 Mack Avenue, Detroit, Michigan, prepared for Olympia Group, LLC & The Private Bank, May 16, 2016;
- Geophysical Survey Report, 400 Mack Avenue, Detroit, Michigan, June 10, 2016;
- Phase II ESA of 400 Mack Avenue, Detroit, Michigan, June 13, 2016;
- BEA, 400 Mack Avenue, Detroit, Michigan, June 28, 2016.

Copies of the ASTI ESA, PhII and BEA may be found in **Appendix B** of this DCP.

3.3 Phase I Environmental Site Assessment - TEG

TEG was contracted by the prospective new purchaser, Wayne State University, to conduct an ESA in May of 2019 on the 400 Mack and 3515 Beaubien subject property. TEG updated that ESA report in March of 2021. The TEG ESA did not reveal any new RECs that had not been previously detailed in the Earth Tech and ASTI investigations, with the exception of the following:

- No evidence that a Due Care Plan (DCP) had ever been prepared to address the confirmed contamination of subsurface soils at select locations within the 400 Mack and 3515 Beaubien subject property boundaries. Hence the preparation of this DCP, at the request of the prospective new purchaser of the property, Wayne State University.

4.0 Exposure Pathway Evaluation

A pathway evaluation was conducted to determine which risk-based criteria are relevant and applicable at the property. The property use, geologic and hydrogeologic conditions are used in this evaluation.

4.1 Property Use Plan

The prospective new purchaser of the property, WSU, does not plan to significantly change the current use of the site as an office building. Thus, in accordance with NREPA, the appropriate exposure scenarios would be consistent with *Nonresidential land use*.

4.2 Geologic and Hydrogeologic Conditions

The geologic conditions at the subject property have been summarized in both the Earth Tech and ASTI report documents, copies of which may be found in **Appendix B** of this DCP. Generally, the subsurface soils at the site consisted of a surface layer of topsoil or asphalt, followed by approximately 3 to 6 feet of fill soils, made up of brick, coal, glass and slag. A limited number of soil boring locations encountered pockets of perched water, but these are believed to have been the result of either underground storage tank (UST) or other building footer removal from the site, as the groundwater table in this portion of Detroit is indicated at a depth of at least 25 feet below surface.

4.3 Analysis of Exposure and Migration Pathways

Part 201 allows for evaluation of relevant pathways of exposure. A pathway is considered relevant when the exposure route exists, even if exposure controls are or will be relied upon to prevent or mitigate exposure, and even when if detected contaminant concentrations are less than applicable criteria. As part of the pathway evaluation, the geologic and hydrogeologic characteristics of the property may be considered when evaluating if a pathway is relevant. Depending on site-specific factors (e.g., soil and groundwater conditions), certain pathways may be eliminated; that is, the pathways may be determined to not be relevant, and thus not applicable to risk assessment at the property.

If a pathway is relevant, the corresponding Part 201 cleanup criteria are applicable to evaluate risk at the property unless the pathway is reliably restricted. The potential pathways of migration and exposure that are considered relevant for the 400 Mack and 3515 Beaubien subject property include the following:

- Direct contact (including soil ingestion) with impacted soil;
- Inhalation of impacted particulate (soil) and/or volatilized compounds from soil and/or groundwater

A discussion of the relevance of each pathway at the property and a conclusion as to the applicability for risk assessment purposes is presented below.

Direct Contact with Soil Pathway

This pathway relates to human dermal contact with or ingestion of contaminated soil. The direct contact with soil pathway is relevant for all land uses, and as such the Direct Contact Criterion is applicable for the BEA contaminants of concern: benzo(a)pyrene, dibenzo(a,h)anthracene, benzo(a)anthracene, naphthalene, n-propylbenzene, arsenic and mercury.

Inhalation of Impacted Particulate and/or Volatilized Compounds Pathway

This pathway relates to contaminants volatilizing from the soil, migrating through the vadose zone soils, and either venting to the atmosphere or into enclosed spaces (e.g. basements, utility trenches, building foundations, etc.) and then being inhaled. This exposure pathway also relates to soil particles with absorbed contaminants becoming airborne and being inhaled. The soil particulate pathway and the ambient air inhalation pathways are relevant for all land uses. As such, the Particulate Soil Inhalation Criterion and the Volatile Soil Inhalation Criterion to ambient air are applicable.

The 400 Mack subject property contains a main building structure that contains offices, research areas and demonstration spacing, which validates the inhalation of compounds volatilized to the indoor air pathway as relevant for the property. It should be noted that the subject building is less than 25 years old, with a solid concrete foundation with no obvious signs of cracks or other breaches of integrity.

Summary of Relevant Pathways and Applicable Criteria

Based on the pathway evaluation, the following pathways are considered relevant to evaluating risk at the subject property. Based on the property uses, a Nonresidential land use category is appropriate. The following Part 201 Generic Nonresidential Cleanup Criterion and Screening Levels associated with each relevant pathway are considered applicable for compliance with Michigan regulations, as follow:

- Direct Contact With Soil – Soil Direct Contact (DC)

- Inhalation of Impacted Particulate and/or Volatilized Compounds Pathway – a) Particulate Soil Inhalation Criteria (PSIC); b) Volatile Soil Inhalation Criteria (VSIC); c) Soil Volatilization to Indoor Air Inhalation Criteria (SVIIC) for facility determination, and the Vapor Intrusion Screening Levels for supplemental risk evaluation.

5.0 Hazardous Substance Information and Criterion of Concern

Criteria of concern are those that are applicable and those which are exceeded by contaminant concentrations detected at the subject property. The hazardous substances detected during the Earth Tech and ASTI PhIIs were compared to the Part 201 Generic Nonresidential Cleanup Criteria and Screening Levels identified in the previous section as being applicable for due care risk evaluation based on the current and potential future uses of the property.

The comparison to the applicable Part 201 Generic Nonresidential Cleanup Criteria is presented in the NTH BEA, a copy of which may be found in **Appendix B**. The comparison that only the following contaminants were detected in soil samples above the applicable Generic Nonresidential Criteria, which is appropriate for the use as a commercial property that is not contiguous to a residential property:

Contaminant	CAS No.	Soil Boring Location	Criterion Exceeded
Benzo(a)pyrene	50328	11-B	DC
Benzo(a)anthracene	1718532	22-A	DC
Dibenzo(a,h)anthracene	224419	22-A	DC
Napthalene	104518	GP-8, GP-10	DWP/GSIP
N-propylbenzene	10365	GP-8, GP-10	DWP/GSIP
Arsenic	7440382	11-B, GP-5	DWP/GSIP
Mercury	7439976	GP-10	DC

Note 1: Please see Appendix A, Site Diagrams for copies of the Earth Tech and ASTI soil boring location maps.
Note 2: Soil boring location designation: GP-#=ASTI; Number-letter=Earth Tech.
Note 3: DC=Direct Contact; DWP=Drinking Water Protection; GSIP=Groundwater Surface Interface Protection.

Applicable Criteria of Concern

- Applicable criteria of concern are those for which pathways are both relevant and where contamination is present above the corresponding criterion. Based on the pathway analysis and the contaminants identified as being present, the following are the applicable criteria of concern at the subject property:

- Particulate Soil Inhalation Criterion (PSIC) and the Volatile Soil Inhalation Criterion (VSIC)
- Direct Contact (DC)

6.0 PLAN FOR RESPONSE ACTIVITIES

The purpose of the proposed response activities is to satisfy the due care obligations of the purchaser of the 400 Mack Avenue and 3515 Beaubien subject property, Wayne State University. The response activities described herein are based on the intentions of the Client to continue the operation of the subject property as an office building.

- *Take precautions against the reasonably foreseeable acts or omissions of a third party:* The notifications indicated in **Section 6.1** will serve to comply with this requirement.

- *Prevent exacerbation of the pre-existing areas of contamination:* The measures described in **Section 6.2** serve to comply with this requirement. Based on available information, no redevelopment of the subject property that would involve the disturbance of the identified areas of subsurface soils impacted with the contaminants of concern has been proposed in the foreseeable future by the Client.

- Eliminate unacceptable exposures: Based on the current property use described in **Section 2.0**, the exposure pathway evaluation in **Section 4.0** and the hazardous substance evaluation I **Section 5.0**, the criteria/pathway of concern for human exposure is DC, PSIC and VSIC.

To address exceedances of the DC, PSIC and VSIC, an exposure barrier consisting of either asphalt, concrete or other suitable landscape materials will be maintained at the subject property, particularly in the near vicinity of the impacted soil boring locations, as indicated in both the Earth Tech and ASTI site diagrams.

6.1 Third Party Notifications

Reasonable precautions against the acts of a third party will be taken by providing a written notice of the general nature and extent of contamination at the subject property and potential unacceptable exposures to easement holders of existing utilities at the site. This notice will be provided by sending a copy of the Construction & Utility Worker Information Sheet that has been provided in **Appendix C** with a cover letter from the Client.

If there is transfer of an interest in the property, the Client will provide copies of all previously completed environmental reports conducted on the subject property, and also indicate that the property is a contaminated "Facility".

6.2 Controls During Construction

Not applicable to the 400 Mack Avenue and 3515 Beaubien subject property, as no new construction is currently planned for the target parcel. However, in the event of future redevelopment of the subject property, the following measures should be considered, as warranted.

Health and Safety Plan

A copy of this DCP should be provided to any construction and/or utility contractors who may have a potential to be exposed to contaminated soil during future construction activities. Based on the information contained in this DCP, each contractor shall be responsible to develop their own site-specific Health and Safety Plan (HASP) in accordance with applicable regulatory requirements. The site-specific HASP will outline measures to be taken to protect workers during construction activities. Should unknown conditions be encountered during the on-site activity, the HASP shall be revised accordingly.

Site Security

During periods of significant construction activities, the property shall be accessible only to authorized employees, agents, representatives, contractors and consultants of Wayne State University. Any construction area will be secured against unauthorized access by posting signs restricting access to authorized personnel. The Client will require its contractors to prohibit unauthorized access to the property.

Demolition

Not applicable, as no demolition is planned for the subject property by the Client.

Exposure Barriers

In the event that subsurface soils that have been confirmed as contaminated should have to be disturbed, an exposure barrier protective of the direct contact pathway would have to be installed to protect the public against exposure to the existing soil conditions. The exposure barrier would also limit migration of the contaminated soil through wind and water transport. The exposure barrier would have to encompass the entire area of contaminated soils being disturbed, and will consist of the following:

- Paved Surfaces: All paved surfaces will function as the "hard surface" portion of the exposure barrier. Industry construction materials and designs will be used to construct the "hard surfaces" portion of the barrier.

- Landscaped areas: The exposure barrier will include a visual demarcation material covered by a minimum of 12-inches of imported, non-contaminated clayey soils.

Control of Contaminated Media

During any future construction activity, control of contaminated media will be provided through a fugitive dust control program, procedures to address encountered groundwater (as warranted), and a program to prevent the tracking of contaminated soils.

Fugitive Dust Control Program

A fugitive dust control program must be implemented when it is likely that conditions will be favorable for significant dust generation. If airborne dust/particulates are observed during construction, then areas of non-vegetative ground surface, open excavations, stockpiled soils, etc., will be sprayed with water or dust suppressant material as necessary to prevent airborne dispersion and off-site migration of the soil particulates.

Dewatering/Groundwater/Storm-Water Management

Future construction and/or utility workers could encounter perched water or surface runoff and depending on the quantity of water encountered, dewatering may be necessary. If groundwater is to be handled onsite, it may be allowed to infiltrate in areas of similar contamination to the source location. The infiltration location should be located as far from the property boundaries as possible and measures must be taken to prevent runoff to adjacent properties.

Should offsite disposal of perched groundwater and/or storm water that has accumulated within any excavation be necessary, the water must be characterized prior to determining appropriate pre-treatment and/or disposal options. Disposal options may consist of the following:

- Discharge to the DWSD combined sewer with appropriate permits and clearances.

- Temporary on-site storage (e.g. frac tank) and subsequent discharge to the combined sewer or transport to a licensed off-site disposal facility.

Soil Erosion and Sediment Control

For any future construction activities where significant surface soil disturbance will occur, a Soil Erosion and Sedimentation Control Plan (SESCP) would have to be prepared in accordance with local and state requirements. The proposed SESCP measures to control sediment and/or erosion may include the following:

- A gravel tracking mat may be constructed at the work area exit to provide a zone through which loose soils can dislodge from truck tires.

- The work area immediately outside the subject property would be periodically swept and scraped to prevent tracking of soil and dispersion of dust from the property.

- Installation of silt fencing along the perimeter of the specific work area and/or subject property boundary(s).

- Inlet filters would be placed over catch basins. The filters would be periodically cleaned.

Program to Prevent Tracking Contaminated Soils

Reasonable precautions must be followed to minimize the tracking of soil including appropriate decontamination procedures for equipment prior to leaving the work area (e.g. such as cleaning tires on vehicles). If soil has been tracked out of the work area or offsite, these areas must be appropriately cleaned.

Soil Relocation

Any contaminated soils that may result from future redevelopment and/or utility work shall only be relocated, as follows:

- Soil may only be relocated onsite to areas of similar contamination.
- Any and all excess contaminated soils must be properly characterized and if necessary, disposed of at a licensed landfill facility, in accordance with the terms of the accepting landfill.
- If evidence of additional soil contamination, not previously known is encountered during any future construction activities, it must be evaluated prior to relocation. The materials may then only be relocated if it is determined that such relocation will not contribute to exacerbation.

Methods of Handling Contaminated Soils Before and During Offsite Transport

Excess contaminated soil that cannot be reused on site shall be transported and disposed of at a licensed landfill. Contaminated soils designated for landfill disposal will be managed as follows:

- Soils removed from the subsurface will be either directly loaded for transportation to a landfill facility or stockpiled in a predetermined location.

The staging area(s) shall be limited to areas covered by an impervious barrier.

- Stockpiled soils shall be covered with a rain barrier (such as plastic sheeting or visqeen) to prevent washout to adjoining areas.

- Soils may need to be further characterized for disposal at a licensed landfill, per the requirements of said facility.

- Offsite soil disposal activities will be recorded with appropriate documentation such as manifests, trucking logs, receipts or other documentation.

- No contaminated soils that originated from the subject property may be transported to an offsite location that is not a licensed landfill.

Preventing and Mitigating Future Releases

Significant hazardous substance use during potential, future construction activities at the subject property shall be managed in a manner to prevent product releases into the surrounding environment. Areas designated for storage and handling will be readily identified and any bulk storage of construction related hazardous substances would be in an area with secondary containment to prevent spillage into surrounding soils. Any temporary fuel tanks would have to be of double-wall construction, with spill containment around the fill port.

Existing Contamination Not Previously Known

The historical investigations conducted on the subject property have revealed several varying soil conditions. It is possible that other areas of subsurface soil contamination or contamination differing in type or magnitude from that which was identified during the Earth Tech and ASTI PhIIs may be present at the property. As such, if evidence of contamination not described herein or soil conditions differing from those described in the two (2) separate PhII reports are encountered, then such contamination must be adequately characterized and managed in accordance with the applicable requirements, guidelines and regulations.

7.0 EVALUATION OF COMPLIANCE WITH SECTION 7A OBLIGATIONS

The Client (Wayne State University) shall satisfy the due care obligations for the subject property, as follows:

Prevent Exacerbation

The Client will not exacerbate existing contamination. Compliance with this DCP will result in the following response activities designed to prevent exacerbation:

- Compliance with soil relocation provisions.
- Compliance with the fugitive dust control plan.
- Groundwater and dewatering management activities.
- Storm water and soil erosion control measures.
- Management of any existing contamination that was not previously known.
- Response activities to address a release resulting from potential, future construction activities at the subject property.

Mitigate Unacceptable Exposures

The Client and their representatives will undertake efforts to mitigate unacceptable exposures of hazardous substances to potential, future construction workers, utility workers, future occupants, site visitors, and others by undertaking the following activities as outlined in this DCP:

- Notifying contractors of existing, subsurface soil contamination and requirements for a HASP.
- Site security provisions.
- Maintenance of the exposure barriers previously described in this DCP.
- Operation and Maintenance activities sufficient to protect against exposures through direct contact with soil pathway, as outlined in this DCP.

Take Reasonable Precautions

The Client will take reasonable precautions against the actions of third parties through notifications of environmental conditions as outlined in this DCP.

Provide Reasonable Cooperation

There are no known parties authorized to conduct response activities at the subject property. If the Client becomes aware of such authorized parties, reasonable cooperation will be provided.

Comply with Land Use Restrictions

There are no known land use restrictions at the subject property, aside from not exacerbating the areas of known subsurface soil contamination, as detailed in the Earth Tech and ASTI PhIIs.

Do Not Impede Land Use Restrictions

There are no known land use restrictions at the subject property.

Appendices

Appendix A

Site Diagrams

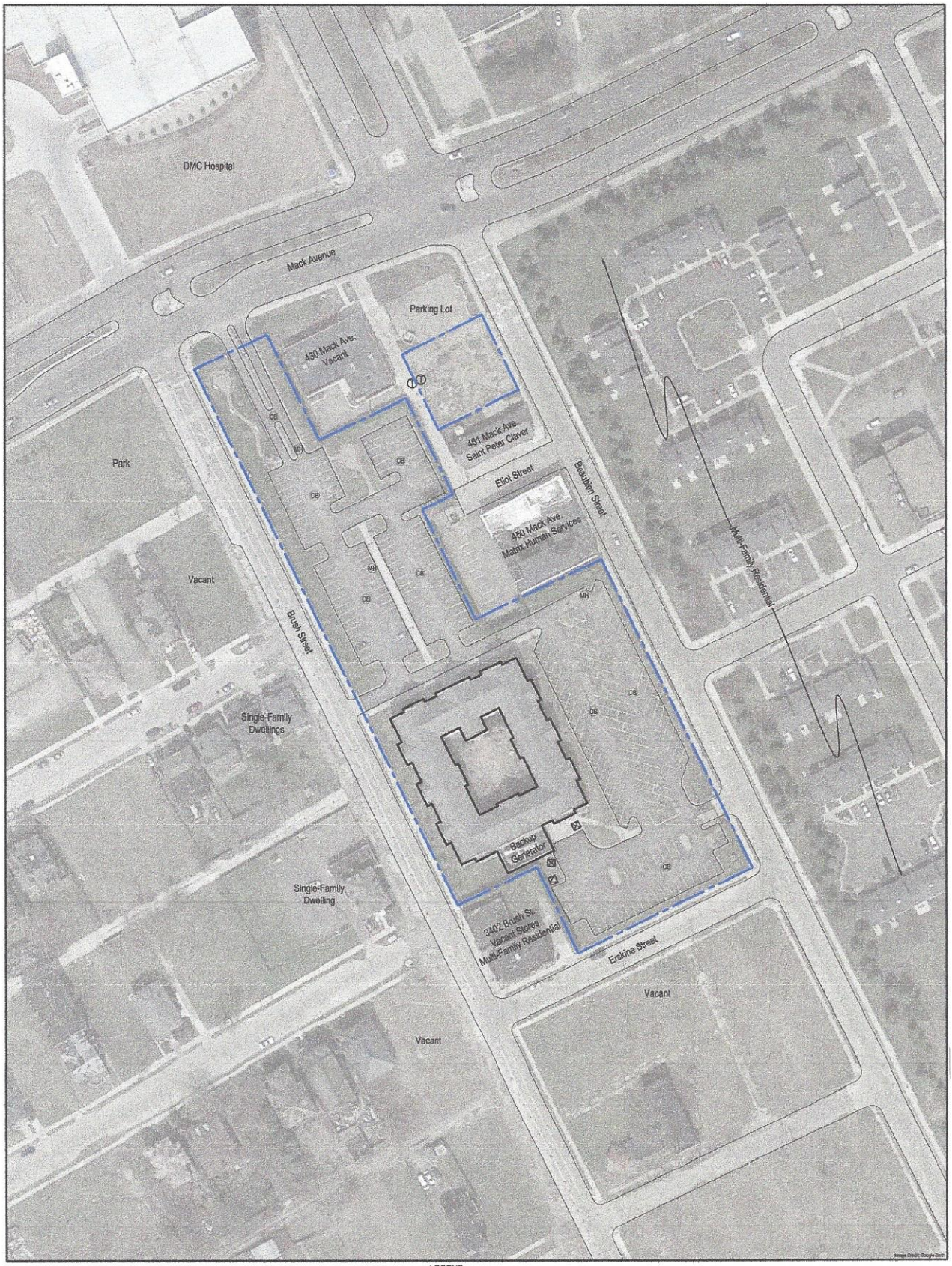
SITE LOCATION TOPOGRAPHIC MAP

U.S. Geological Survey. Detroit (2017-05-03) Quadrangle, 7.5 Minute Series

TEG Environmental Services, Inc.	400 Mack Avenue Detroit, MI 48201	FIGURE: 1 JOB: 21-628-003-UR DATE: 2/23/2021

SITE LOCATION MAP

TEG Environmental Services, Inc.	400 Mack Avenue Detroit, MI 48201	FIGURE: 2 JOB: 21-628-003-UR DATE: 2/23/2021



LEGEND

- Property Line
- Pole-Mounted Transformer
- Pad-Mounted Transformer
- Dumpster
- CB Catch Basin
- MH Manhole

0 100 200 300

Approximate Scale in Feet

400 Mack Ave.

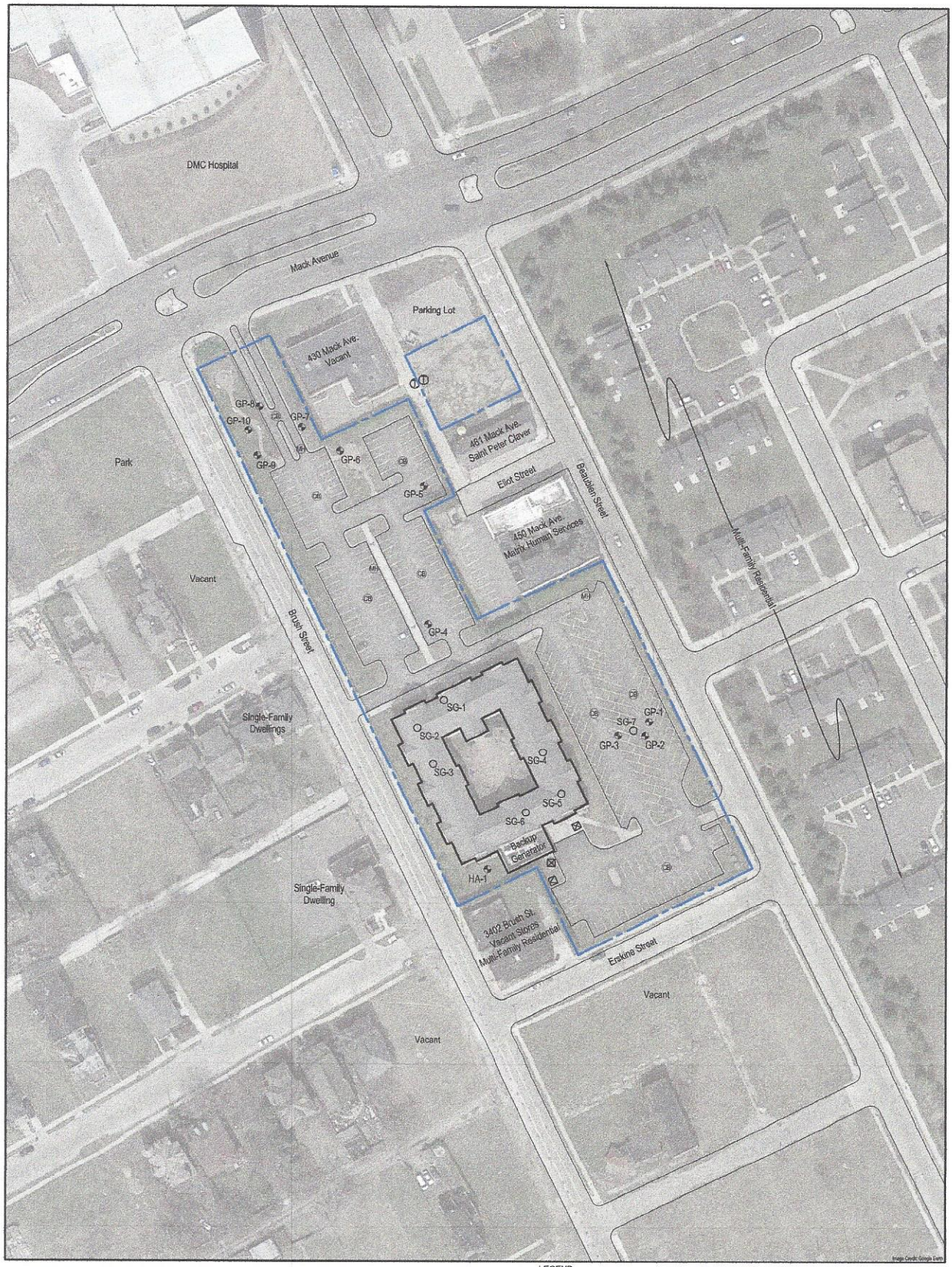
Detroit, MI

Created for: Olympia Group, LLC

ASTI Project 9651, JMD, May 9, 2016

ASTI Environmental

Site Features Map



0 100 200 300

Approximate Scale in Feet

LEGEND

- Property Line
- Pole-Mounted Transformer
- Pad-Mounted Transformer
- Dumpster
- Catch Basin
- Manhole
- Soil Boring
- Soil Gas

ASTI Environmental

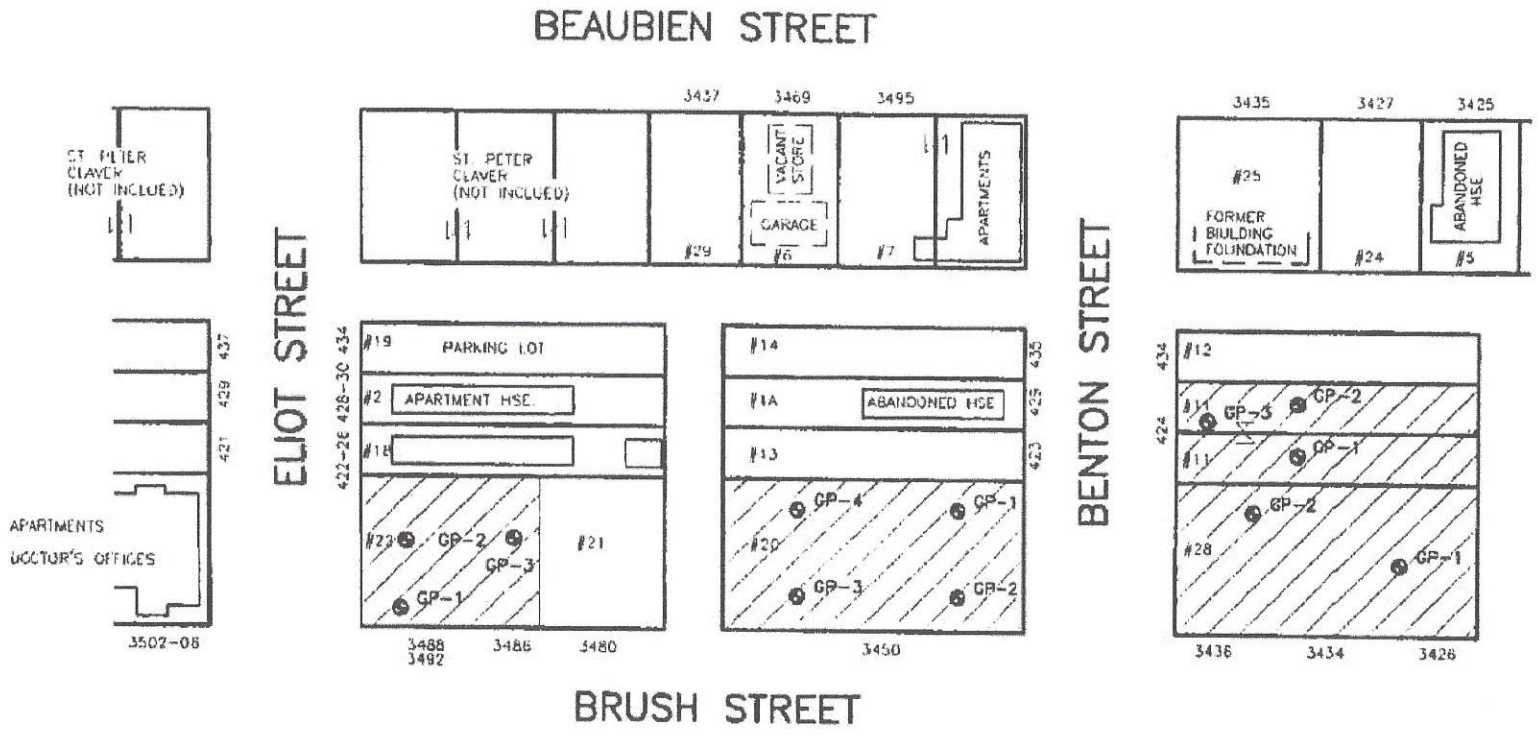
N

400 Mack Ave. Detroit, MI

Created for: Olympia Group, LLC

ASTI Project 1-9651, JMD, June 17, 2016

Figure 2 - Sample Location Map



ET SAMPLE LOCATION

PARCELS INVESTIGATED DURING PHASE II

NO SCALE

1 720
63840AP2
FER071096

FIGURE 1
PHASE II BORING LOCATIONS

BRUSH PARK PROJECT
BOUNDED BY MACK AVENUE,
BRUSH, BEAUBIEN AND ERSKINE STREETS
DETROIT, MICHIGAN 48201

SEPTEMBER, 1996 WAYNE COUNTY 19888.02

EARTH TECH

C:\DWG\63840\63840AP2 7-11-96 11:08:24 am EST

LEGEND

PARCEL = #____

⊙ – SOIL SAMPLE LOCATION

ADJACENT PROPERTIES AND SITE MAP

BOUNDED BY MACK AVENUE, BRUSH, BEAUBIEN AND ERSKINE STREETS
DETROIT, MICHIGAN 48201

SEPTEMBER, 1997 WAYNE COUNTY

EARTH TECH

Appendix B

Prior Environmental Reports, Phase I/II ESAs, BEA
(On CD disk for Earth Tech, ASTI and TEG investigations)

Appendix C

Construction/Utility Worker Information Sheet

PRIVILEGED AND CONFIDENTIAL

Construction & Utility Worker Information Sheet

400 Mack Avenue/3515 Beaubien Street, Detroit, Michigan

May 17, 2021

Environmental investigation soil testing conducted at the property identified as 400 Mack Avenue & 3515 Beaubien Street, in the City of Detroit, Wayne County, Michigan has confirmed the presence of soil contamination at this location. Contact with these soils and/or groundwater could be dangerous to human health. The Michigan Department of Environment, Great Lakes & Energy (EGLE) has developed strict criteria (acceptable concentrations) for contaminants in soil and groundwater. Construction activities at this site would be classified as "*Non-residential use*". In the samples collected to date from this site, the contaminants that have been detected above applicable EGLE non-residential criteria are as follows:

- Arsenic
- Mercury
- Benzo(a)anthracene
- Dibenzo(a,h)anthracene
- Benzo(e)pyrene
- N-butylbenzene or Napthalene
- N-propylbenzene

At this time, it should be assumed that all fill or non-native soil and perched groundwater (if encountered) are contaminated above the non-residential criteria. The non-residential criteria are based on daily exposure for 21 years. Reducing the length of exposure to contaminated materials can lower the risk.

Special measures to protect construction workers and the general public

Contractors will need to prepare a Site Specific Health & Safety Plan for their employees as required by MIOSHA. Any contaminated soils and/or groundwater must be handled and disposed of in an environmentally acceptable manner. The procedures outlined below should protect the public and maintain control of the contaminated materials:

- Site security must be maintained to keep the public away from areas where contaminated soils or groundwater is exposed.
- Soil must not be tracked off site - this includes on the boots or clothing of workers, the tires and undercarriage of trucks, and on tracked equipment.
- Soil must be placed on plastic sheeting or a paved surface, and covered to prevent mixing with clean materials.
- Erosion control measures shall be employed as necessary.
- Contaminated soil shall not be relocated to any offsite location.
- All soil should be considered contaminated and must be returned to their original location or disposed of in a landfill. Soil may need to be further characterized, as required by the receiving landfill.
- Assume that the groundwater at the site is also contaminated. Therefore, groundwater may be left in space, disposed at a licensed disposal facility or discharged to a DWSD sewer with an appropriate permit.
- Copies of all disposal documentation must be provided to the City of Detroit for their records.