Wayne State University
Engineering Technology Roof Replacement
WSU Project Number 167-304299
Prevailing Wage Work

FOR:
Board of Governors
Wayne State University
Detroit, Michigan

Owner's Agent:
Valerie Kreher, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720 / 313-577-3747 fax
rfpteam2@wayne.edu and copy leiann.day@wayne.edu

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

Consultant:
NSA Architects Engineers Planners
23761 Research Dr.
Farmington Hills, MI 48335

October 2, 2017
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Appendix A

Project Specific Prevailing Wage Schedule (posted separately)
INFORMATION FOR BIDDERS

OWNER:
Board of Governors
Wayne State University

PROJECT:
Engineering Technology Roof Replacement
Project No. 167-304299

LOCATION:
Wayne State University
4855 Fourth Street
Detroit, Michigan 48202

OWNER’S AGENT:
Valerie Kreher, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720 / 313-577-3747 fax
rfpteam2@wayne.edu & copy leiann.day@wayne.edu

OWNER’S REPRESENTATIVE:
Matt Walker, Project Manager
Facilities Planning & Management
Design & Construction Services
Wayne State University
5454 Cass Avenue
Detroit, Michigan 48202

Architect:
NSA Architects Engineers Planners
23761 Research Dr.
Farmington Hills, MI 48335

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: October 2, 2017

BIDDING: Bidding documents may be obtained by vendors from the University Purchasing Web Site at http://go.wayne.edu/bids beginning October 2, 2017. 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: 10:00 am, local time, October 9, 2017 to be held at Wayne State University – 4855 Fourth Street, Conference Room 1036, Detroit, MI, 48202. Late Arrivals may not be permitted to submit bids.

OPTIONAL Second Walk Through (if needed): To be determined at the conclusion of the pre-bid conference, by those in attendance.

DUE DATE FOR QUESTIONS: Due Date for questions shall be October 11, 2017 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, copy to Leiann Day, Associate Director at: leiann.day@wayne.edu.

Bids Due: Sealed proposals for lump-sum General Contract will be received at the office of the Procurement & Strategic Sourcing located at 5700 Cass Avenue, Suite 4200, Detroit, MI 48202 on October 13, 2017, until 2:00 p.m. (local time).

No public bid opening will be held.

Bid Qualification Meeting: Bidders must be available for bid prequalification meeting 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 the bid qualification, the Vendor must provide a Project Schedule and a Schedule of Values, including a list of Contractor’s suppliers, subcontractors and other
qualifications.

An unsigned contract will be given to the successful Contractor at the conclusion of the bid qualification meeting, if all aspects of the bid are in order. 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 most responsive 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: Engineering Technology Roof Replacement
Project No. 167-304299

LOCATION: Wayne State University
4855 Fourth Street,
Detroit, Michigan 48202

OWNER’S AGENT: Valerie Kreher, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720 / 313-577-3747 fax
rfpteam2@wayne.edu & copy leiann.day@wayne.edu

1. PROPOSALS

A. The Purchasing Agent will receive sealed Proposals for the work as herein set forth at the place and until the time as stated in the "Information for Bidders", a copy of which is bound herewith in theses specifications. 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 in duplicate on forms furnished with the Bidding documents. The forms must be fully filled out in ink or typewritten with the signature in longhand, and the completed forms shall be without alterations, interlineations, or erasures. Forms shall contain no recapitulations of the work to be done. Each proposal shall be delivered in an opaque sealed envelope, marked "PROPOSAL" AND SHALL BEAR THE NAME OF THE PROJECT AND THE NAME OF THE BIDDER. Proposals submitted by telephone or telegraph will not be accepted. Modifications by telephone or telegraph to previously submitted proposals will not be accepted.

D. (revised 5-29-2009) 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 Owner does not obligate himself to accept the lowest or any other bids. The Owner reserves the right to reject any and all bids and to waive any informalities in the Proposals.

2. PROPOSAL GUARANTEE (revised 3-22-2012)

A. A certified check or bank draft payable to the Owner, or 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 rating as denoted in the AM Best Key Rating Guide”
C. The bid deposit of all bidders except the lowest three will be returned within three (3) days after the bids are opened. After the formal Contract and bonds are approved, the bid deposit will be returned to the lowest three bidders, except when forfeited.

D. 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.

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

3. CONTRACT SECURITY (revised 3-22-2012)

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 the laws of the State of Michigan. The graduated formula no longer applies.

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 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 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 Bond will not be required.

5. INSPECTION

A. Before submitting his Proposal, each Bidder shall be held to have visited the site of the proposed work and to have familiarized himself 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 his 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 requested of the Purchasing Agent in writing, and if explanation is necessary, a reply will be made in the form of an Addendum, a copy of which will be included in the Proposal.
forwarded to each Bidder registered on the Bidders' List maintained by Procurement & Strategic Sourcing.

C. All addenda issued to Bidders 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 mailed and delivered to each registered Bidder. Each proposal submitted shall list all addenda, by numbers, which have been received 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.

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 one week to produce this document. If the required document is not received within this time, the bidder will be disqualified.


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 (2-2015)

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 not available at the University, but are available beginning October 2, 2017 through Wayne State University Procurement & Strategic Sourcing’s Website for Advertised Bids: http://go.wayne.edu/bids. The plans for this project can be viewed in advance and/or printed from the above website. Copies of the RFP will not be available at the pre-proposal meeting.

B. DOCUMENTS ON FILE (revised 12-2007)
(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](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](http://www.forms.procurement.wayne.edu/Adv_bid/Adv_Bid_Listserve.html)

(3) Please note: Effective December 1, 2007, 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](http://go.wayne.edu/bids), and click on the “Join our Listserv” link at the top of the page.

15. **Smoke and Tobacco-Free Policies (9-2015)**

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/](http://wayne.edu/smoke-free/policy/).
NOTICE OF MANDATORY PRE-BID CONFERENCE

PROJECT: Engineering Technology Roof Replacement,

PROJECT NOS.: WSU PROJECT NO. 167-304299

It is MANDATORY that each Contractor proposing to bid on this work must attend a pre-bid conference at the following location:

Wayne State University
4855 Fourth Street, Conference Room 1036
Detroit MI 48202

10:00 am, local time, October 9, 2017

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 4 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).

An attendance list shall be prepared and minutes of the conference shall be furnished to all those attending.

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

For your convenience a map of the University and appropriate parking lots can be downloaded and printed from: http://campusmap.wayne.edu. Guest parking in any of the University student and guest lots is $7.75. A detailed list of Cash & Coin operated lots can be viewed at http://procurement.wayne.edu/cash_and_credit_card_lots.php. Cash lots dispense change in quarters. Due to time constraints, Vendors are encouraged to avoid parking at meters on the street (especially blue “handicapped” meters).

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 October 11, 2017, 12:00 noon.

IV. Minimum Participation
   A. Pre-registration for the Pre-Bid meeting is required. In the event that we do not have four (4) or more eligible bidders pre-registered, the University reserves the right to postpone the Pre-bid meeting with up to 4 business hour notice.
   B. If less than 4 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).
   C. On the day of the bid opening, if less than 3 sealed bids are received, the University reserves the right, at its sole discretion, to rebid the project in an effort to obtain greater competition. If the specifications are unchanged during the rebid effort, any contractor who submitted a bid will be given the option of keeping its bid on file for opening after the second bid effort, or of having the bids returned to them unopened.

V. Proposal Due Date- October 13, 2017, 2:00 p.m.

VI. Final Comments

VII. Adjourn
VENDOR NAME

GENERAL CONTRACT - PROPOSAL FORM (revised 4 - 2017)

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: Engineering Technology Roof Replacement

PROJECT NO.: WSU PROJECT NO. 167-304299

PROJECT TYPE: Roofing Work

PURCHASING AGENT: Valerie Kreher, Senior Buyer
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-3720/ 313-577-3747 fax
rfpteam2@wayne.edu & copy leiann.day@wayne.edu

OWNER’S REPRESENTATIVE: Matt Walker, Project Manager
Design & Construction Services
Facilities Planning & Management
Wayne State University
5454 Cass Avenue
Detroit, Michigan 48202

TO: Board of Governors
Wayne State University
Detroit, Michigan

BASE PROPOSAL:
The undersigned agrees to enter into an Agreement to complete the entire work of the Engineering Technology Roof Replacement project (WSU Project No. 167-304299) in accordance with the Bidding Documents for the following amounts:

$ Dollars

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. 1: The undersigned agrees to enter into an agreement to complete the Alternate # 1 New Roof: 2 Ply Styrene-Butadiene-Styrene (SBS) Modified bituminous membrane roofing, 5/8” cover board, 2.6” polyisocyanurate roof insulation (R15) base layer of 2.6” polyisocyanurate roof insulation (R15), 2-ply vapor barrier. (approximately 6 1/8”) Work of the Engineering Technology Roof Replacement project (WSU Project No. 167-304299)
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

ALTERNATE NO. 2:

The undersigned agrees to enter into an agreement to complete the Alternate # 2 increase SBS manufacturer's warranty from 20 to 25 years work of the Engineering Technology Roof Replacement project (WSU Project No. 167-304299) 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

ALTERNATE NO. 3:

The undersigned agrees to enter into an agreement to complete the Alternate # 3 increase TPO manufacturer's warranty from 20 to 25 years work of the Engineering Technology Roof Replacement project (WSU Project No. 167-304299) 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

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 $10.00 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: (revised 4-17-2017)

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

Where changed Work is performed, the Contractor may add to the total estimated actual cost for such Work no more than ten (10%) for subcontractor mark-up and seven and one-half percent (7.5%) for self-performed trade work for profit, overhead, insurance, taxes, indirect supervision, bonds, and any other costs not allowed by section 4.02.01
Within 14 days of the project's contract execution Contractor shall provide to the Owner; Subcontractor's hourly labor rate breakdown details. This requirement shall extend to the lowest level of subcontractor participation.

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

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

**TIME OF COMPLETION:** (revised 4-01-2011)
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 November 20, 2017.

**LIQUIDATED DAMAGES:**
It is understood and agreed that, if project is not completed within the time specified in the contract plus any extension of time allowed pursuant thereto, the actual damages sustained by the Owner because of any such delay, will be uncertain and difficult to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by Owner would be the sum of $100.00, One Hundred Dollars per day, and therefore the contractor shall pay as liquidated damages to the Owner the sum of $100.00, One Hundred Dollars 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:

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<th>Criteria</th>
<th>Small Project bid less than $50,000</th>
<th>Medium Project bid between $50,001 and $250,000</th>
<th>Large Project bid between $250,001 and $2 million</th>
<th>Very Large Project bid greater than $2 million</th>
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<tr>
<td>EMR Rating (Experience Modification Rating)</td>
<td>1.0 or Less</td>
<td>1.0 or Less</td>
<td>1.0 or Less</td>
<td>1.0 or Less</td>
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<tr>
<td>Bondable Vendor</td>
<td>N.A.</td>
<td>Required</td>
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<tr>
<td>Length of Time in</td>
<td>2 Years</td>
<td>3 Years</td>
<td>5 Years</td>
<td>5 Years</td>
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FORM OF PROPOSAL FOR THE GENERAL CONTRACT  00300 - 3
<table>
<thead>
<tr>
<th>Construction Business</th>
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<tr>
<td>Demonstrated Experience in Projects Similar in Scope and Price in the last 3 years</td>
</tr>
<tr>
<td>1 or more</td>
</tr>
<tr>
<td>Unsuccessful Projects on Campus in last 3 years</td>
</tr>
<tr>
<td>None Allowed</td>
</tr>
<tr>
<td>Failure to comply with Prevailing Wage and/or Project Labor requirements</td>
</tr>
<tr>
<td>None Allowed</td>
</tr>
<tr>
<td>Withdrawn University Bid (with or without Bond forfeiture) within the last 3 years **</td>
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<tr>
<td>1 or less</td>
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<tr>
<td>Company currently not in Chapter 11 of the US Bankruptcy Code</td>
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<tr>
<td>1 Year</td>
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** Withdrawal of a bid is subject to the University suspension policy, for a period up to one year.

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

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

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

- [ ] Corporation
- [ ] Individual
- [ ] Partnership
- [ ] Joint Venture
- [ ] Other (Explain below):

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

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

1. How many years has your organization been in business as a contractor? __________
2. How many years has your organization been in business under its present business name? __________
3. List states in which your organization is legally qualified to do business. __________
4. Provide the Name and Address of your Liability Insurance Carrier. ________________________________

5. What is your current EMR Rating?
The minimum requirement is an EMR Rating of 1.0 or less for all projects. Bidders with a rating higher than 1.0 understand that their bid may be disqualified, at the sole discretion of the University.

6. What percentage of work performed on projects are by company employees; excluding any hired subcontracting and outsourced relationships, for the bid submitted? _______ %

7. What percentage of work performed on your companies 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: _____________________
Wayne State University Engineering Technology Roof Replacement  
WSU Project No. 167-304299

Form of Proposal for the General Contract 00300 - 6

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: _________________________

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. 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? 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”?  Yes _____  No _____

   If “No”, clearly note any exceptions to any information contained in the contract documents and include with your proposal.

20. Did your company quote based upon Prevailing Wage Rates?        Yes _____  No _____

21. Does your company agree to comply with the University Smoke and Tobacco Free Policies?   Yes _____  No _____

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

Acknowledgement of Minimum Qualifications:

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

Acceptance of Proposal:

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

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

NAME OF COMPANY: ________________________________

OFFICE ADDRESS: ____________________________________________

PHONE NUMBER: __________________________ DATE____________

FAX NUMBER: ____________________________________________

SIGNED BY: __________________________________________________

_____________________________________________ Signature

(Please print or type name here)

TITLE ________________________________

EMAIL ADDRESS: ________________________________ @ _____________
PREVAILING WAGE RATE SCHEDULE (revised 4-05-2010)

A. See also Page 00100-4 Section 12.B

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

C. 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 related to this project.

D. To maintain compliance with State of Michigan Ordinances, Certified Payroll must be provided for each of the contractor’s or subcontractor’s payroll periods for work performed on this project. Certified Payroll should accompany all Pay Applications. Failure to provide certified payroll will constitute breach of contract, and pay applications will be returned unpaid, and remain so until satisfactory supporting documents are provided.

A Prevailing Wage Rate Schedule has been issued from the State of Michigan that is enclosed in this section.

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

If you have any questions, or require rates for additional classifications, please contact:

Michigan Department of Consumer & Industry Services, 
Bureau of Safety and Regulation, Wage and Hour Division, 
7150 Harris Drive, 
P.O. Box 30476, 
Lansing, Michigan 48909-7976

http://www.michigan.gov/dleg/0,1607,7-154-27673_27706---,00.html

E. Wayne State University’s Prevailing Wage Requirements:

When compensation will be paid under prevailing wage requirements, the University shall require the following:

A. The contractor shall obtain and keep posted on the work site, in a conspicuous place, a copy of all current prevailing wage and fringe benefit rates.

B. 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.

C. The contractor shall submit a completed certified payroll document [U.S. Department of Labor Form WH 347] verifying and confirming the prevailing wage and benefits rates for all employees and subcontractors for each payroll period for work performed on this project. The contractor shall include copies of pay stubs for all employee or contract labor payments related to Wayne State University work. The certified payroll form can be downloaded from the Department of Labor website at http://www.dol.gov/whd/forms/wh347.pdf.

D. A properly executed sworn statement is required from all tiers of contractors, sub-contractors and suppliers which provide services or product of $1,000.00 or greater. Sworn statements must accompany applications for payment. All listed parties on a sworn statement and 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.

E. Apprentices for a skilled trade must provide proof of participation in a Certified Apprenticeship Program and the level of hours completed in the program.
F. Daily project sign-in sheets and field reports for the project must be turned in weekly.

Note: Contractor invoices WILL NOT be processed until all listed certified payroll documents are received.

G. If the VENDOR or subcontractor fails to pay the prevailing 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:

1. Withhold all or any 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.

2. Terminate this 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.

3. Propose to the Director of Purchasing that the Vendor be considered for Debarment in accordance with the University’s Debarment Policy, found on our website at http://procurement.wayne.edu/docs/appm28.pdf

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

H. The current applicable prevailing wage rates as identified by the State of Michigan Department of Consumer & Industry Services, Bureau of Safety and Regulation, Wage and Hour Division are attached. Refer to item C above if additional information is required.

I. 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 STATE PREVAILING WAGE SCHEDULE FOR THIS PROJECT

See web site:
http://go.wayne.edu/bids
APPENDIX A FOR THE
STATE PREVAILING 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 along a number of socio-economic categories. This includes its spend with Diverse organizations, its spend with Detroit based organizations, and its spend with Michigan based organizations. To assist with this, The University has the following requirements for submission of your bid and for Pay Applications submitted by the successful contractor.

Submission of Bid

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

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

Pay Applications and Sworn Statements

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

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

3. **Inclusion:** Sworn Statements are to detail the inclusion of recognized diverse and disadvantaged groups in the following 2 categories; Subcontracts or Suppliers. The University recognizes the following groups as diverse or disadvantaged:
   - Minority Business Enterprises (MBE)
   - Women Business Enterprises (WBE)
   - Disabled Veteran Enterprises (DVBE)
   - Disabled Person Enterprises (DBE)
   - Veteran Owned Businesses (VBE)
   - Small Businesses per the US Small Business Administration (SBE)

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

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.)

<table>
<thead>
<tr>
<th>NO.</th>
<th>SUBCONTRACTOR (Name, Address, Telephone Number)</th>
<th>SUPPLIER OR LABORER</th>
<th>TYPE OF Entity</th>
<th>TYPE OF IMPROVEMENT FURNISHED</th>
<th>TOTAL CONTRACT PRICE</th>
<th>CONTRACT CHANGE +/-</th>
<th>ADJUSTED CONTRACT AMOUNT</th>
<th>AMOUNT PAID TO DATE</th>
<th>AMOUNT CURRENTLY OWING</th>
<th>BALANCE TO COMPLETE</th>
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TOTALES

* 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.

__________________________________________________________
Notary Public

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 NO. 497 OF THE PUBLIC ACTS OF 1980, AS AMENDED, BEING SECTION 570.2220 OF THE MICHIGAN COMPILED LAWS.

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 EXCELSED 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.

Subscribed and sworn to before me this ___________ day of ________________

Notary Public __________________________

_______________ County, Michigan - My commission expires: __________________________

Notary Stamp Below:

Rev.4 06.05.15
WAYNE STATE UNIVERSITY
PAYMENT PACKAGE DOCUMENT REQUIREMENTS (Revised 7-23-2015):

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

PAYMENT APPLICATION - AIA document G702 & G703 (or equivalent) –Checklist:
- Correct Project Name – Found on your contract.
- Correct Project Number – Found on your contract.
- Purchase Order Number – Required prior to beginning work.
- Correct Application Number.
- Correct Period Reporting Dates – Applications support docs must be sequential and within application range.
- Approved & Executed Change Orders Listed. (Cannot invoice for unapproved Change Orders)
- Schedule of Values percentages and amounts match the approved Pencil Copy Review – Signed by the Architect, Contractor, and University Project Manager.
- Correct Dates – Back dating not accepted.
- Signed and Notarized.

SWORN STATEMENT – Checklist:
- List all contractors, sub-contractors, suppliers ≥ $1000.00
- A sworn statement is required from every Sub Contractor on the job with a material purchase or sub-contract of $1,000 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 Prevailing Wage Schedule descriptions. If you require rates for additional classifications, contact the Michigan Department of Consumer & Industry Services.
  http://www.cis.state.mi.us/bwuc/bsr/wh/revised_rates/whc_tbl.htm
- For any workers paid at the Apprenticeship rates - proof of enrolled program and current completion required.
- Rate of Pay verified against the Prevailing 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 –
- Copies of Pay Stubs for each Certified Payroll period reported may be required– (Social Security Numbers MUST be blackened out or listed in XXX-XX-1234 format. Pay stubs need to reflect claimed participation of fringes like Medical, Dental, Retirement or 1099 classification.)

- Proof of Ownership for any ‘Owner Operator’ contractors not wishing to claim their time on prevailing wage. – (Must list their hours and dates worked on the WH-347 Form and enter EXEMPT on the income
The Owner must provide copies of “DBA” registration form confirming status as exempt from prevailing wage requirements.

- **Proof of Stored Materials** – Bill of Lading, Delivery Receipts, Pictures, Certificate of Insurance or endorsement policy 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 7-23-2015
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

## Field Management

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<th></th>
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<th>Total</th>
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<tbody>
<tr>
<td>1) Work Planning / Schedule:</td>
<td>1 2 3 4 5</td>
<td>8</td>
<td></td>
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<tr>
<td>2) Compliance with Construction Documents:</td>
<td>1 2 3 4 5</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>3) Safety Plan &amp; Compliance:</td>
<td>1 2 3 4 5</td>
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<tr>
<td>4) Compliance with WSU procedures:</td>
<td>1 2 3 4 5</td>
<td>7</td>
<td></td>
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<tr>
<td>5) Effectiveness of Project Supervision:</td>
<td>1 2 3 4 5</td>
<td>8</td>
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<tr>
<td>6) Project Cleanliness:</td>
<td>1 2 3 4 5</td>
<td>3</td>
<td></td>
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<tr>
<td>7) Punch List Performance:</td>
<td>1 2 3 4 5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>8) Contractor Coordination with WSU Vendors:</td>
<td>1 2 3 4 5</td>
<td>3</td>
<td></td>
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<tr>
<td>9) Construction Quality:</td>
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</table>

## Administrative Management

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<tr>
<td>10) Responsiveness:</td>
<td>1 2 3 4 5</td>
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</tr>
<tr>
<td>11) Contractor communication:</td>
<td>1 2 3 4 5</td>
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<td></td>
</tr>
<tr>
<td>12) Contractor Professionalism:</td>
<td>1 2 3 4 5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>13) Subcontractor Professionalism:</td>
<td>1 2 3 4 5</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>14) Compliance with Contract Requirements:</td>
<td>1 2 3 4 5</td>
<td>3</td>
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<td>16) Close-out - Accuracy of Documents</td>
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## Invoice and Change Management

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<td>17) Change Management</td>
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<td>18) Applications for Payment</td>
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<tr>
<td>19) Timely payment of Subs/Suppliers:</td>
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<td>20) Level of Self-Performance:</td>
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<td>21) Would you work with this Contractor again?</td>
<td>Yes</td>
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</tr>
<tr>
<td>22) Would you work with this team again?</td>
<td>Yes</td>
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## One year follow up

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<td>23) Warranty Support:</td>
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## Evaluator

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<td>Title:</td>
<td>Name:</td>
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</table>

Please Print Rev. 2-17-2015 RGP
We are providing the evaluation instrument at this time to allow the bidder’s to review and understand the criterion that the University’s project management team will use to evaluate the successful bidder’s performance at the conclusion of the project. It is the intent of the university to utilize the results of this evaluation to determine if it will continue to conduct business with the Contractor in future bidding opportunities.

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

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

BOARD OF GOVERNORS OF WAYNE STATE UNIVERSITY
DETROIT, MICHIGAN

With

[GENERAL CONTRACTOR’S NAME]

For

[NAME PROJECT]

Wayne State University Contract Number __________

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

[ENTER A BRIEF DESCRIPTION OF THE PROJECT]
1.00 CONTRACT DOCUMENTS

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

2.00 DESIGN PROFESSIONAL

The Design Professional for this Project is:

[NAME]

[ADDRESS]

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

3.00 CONTRACTOR'S RESPONSIBILITIES

3.01 Scope of Work

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

3.02 Skill and Judgment

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

3.03 Scheduling

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

3.04 Construction

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

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

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

**3.04.2 Construction Supervision**

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

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

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

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

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

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

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

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

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

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

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

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

3.04.2.1 Safety

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

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

The Contractor shall also provide and adequately maintain all required means of egress, including but not limited to, proper temporary walks, roads, guards, railings, lights, and warning signs. The Contractor shall comply with all applicable laws relating to safety precautions. The Contractor shall establish, maintain and update a Project Specific Safety Program.
The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the University and Design Professional.

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

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

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

3.04.2.2 Hazardous Condition

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

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

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

3.04.2.3 University's Right to Stop the Work

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

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

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

3.04.3 Document Management

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

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

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

3.04.3.1 Review of Contract Documents and Field Conditions by Contractor

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

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

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

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

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

3.04.4 Cash Flow Estimates and Cost Control

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

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

3.04.5 Minority/Women Business Enterprise Participation

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

3.04.7 Time of Completion

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

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 PREVAILING 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 in accordance with the Michigan Prevailing Wages on State Projects Act 166 of 1965 as amended. Before advertising for bids on the project, the University shall request the State to determine 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. If the Contract is not awarded or construction undertaken within 90 days of the date of the State's determination of prevailing rates of wages and fringe benefits, the State shall make a redetermination before the Contractor awards a Subcontract. 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, prevailing wage, employee classifications and other applicable requirements.

5.02.1 Audit
In connection with the prevailing 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 or State office upon request:

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

5.02.2 Failure to Comply with Audit

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

5.03 Classification of Workers

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

5.04 Failure to Pay

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

5.04.1
Withhold all or any portion of payments due the Contractor as may be considered necessary by the University to pay laborers and mechanics the difference between the rates of wages and fringe benefits required by this Agreement and the actual wage and fringe benefits paid.

5.04.2

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

5.04.3 University’s Rights Cumulative

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

5.05 Application to Subcontractors

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

6.00 OWNERSHIP OF ELECTRONIC OR HARD-COPY DOCUMENTS

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

7.00 SUCCESSORS AND ASSIGNS

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

8.00 CLAIMS, DISPUTES AND GOVERNING LAW

8.00 CLAIMS AND DISPUTES

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

8.01.1 Policy of Cooperation

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

8.02 Recommendation of Design Professional

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

8.03 Time Limits on Claims

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

8.04 Continuing Contact Performance

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

8.05 Claims for Concealed or Unknown Conditions

If conditions are encountered at the site which are (1) subsurface or otherwise concealed physical conditions which differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature, which differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, then written notice by the observing party shall be given to the other party promptly before conditions are disturbed and in no event later than 24 hours after first observance of the conditions. The Design Professional will promptly investigate such conditions and, if the conditions differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, the Design Professional will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Design Professional determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Design Professional shall so notify the University and Contractor in writing, stating the reasons. Claims by either party in opposition to such determination must be made within 5 days after the Design Professional has issued such determination. If the University and Contractor cannot agree on an adjustment in the Contract Sum or Contract Time, the adjustment shall be referred to the Design Professional for initial determination, subject to further proceedings pursuant to Paragraph 8.09.

8.06 Claims for Additional Cost

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

8.07 Claims for Additional Time

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

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

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

8.08 Injury or Damage to Person or Property

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

8.09 Verification of Claims Submitted

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

8.10 Resolution of Claims and Disputes

8.10.1 Review by Design Professional

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

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

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

8.10.2 Review by Vice-President for Finance and Business Operations

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

8.10.3 Jurisdiction

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

8.10.4 Condition Precedent

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

8.10.5 Governing Law

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

9.00 NON-DISCRIMINATION

9.01 General

The Contractor shall not discriminate against any job applicant, contractor, or employee because of race, color, religion, national origin, age, sex (including gender identity) height, weight, or familial, disability, or veteran status, and shall include terms identical or substantially similar to this section in all Subcontracts, Purchase Orders and other agreements pertaining to the Project.

9.02 Solicitation/Advertisements

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

9.03 Rules/Laws

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

9.04 Reports

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

9.05 Persons with Disabilities

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

9.06 Contract Provisions

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

10.00 ADDITIONAL PROVISIONS

10.01 Prohibited Contracts or Subcontracts due to Unfair Labor Practices

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

10.02 Buy-American

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

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

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

10.03 Michigan Products

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

10.04 Drug and Alcohol Testing

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

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

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

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

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

10.05 Other University Policies

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

10.06 University Representative

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

11.00 INCLUSION BY REFERENCE

This Contract and Contract Documents hereby include and incorporate by reference the General Conditions of Construction and Supplementary General Conditions, the Request for Proposal by University, the approved plans and specifications, Contractor's Bid or Proposal insofar as it is not inconsistent with the other Contract Documents and other Project documents attached as Exhibits.
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

By: ______________________________
Name: _____________________________
Title: ______________________________
Date: ______________________________

UNIVERSITY

By: ______________________________
Name: _____________________________
Title: ______________________________
Date: ______________________________
GENERAL CONDITIONS (Version 11-01-2016)

Complete Documents can be downloaded at
http://www.forms.procurement.wayne.edu/RFPs/General_Conditions_General_Contractor_1_3_2017.docx

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GENERAL CONDITIONS OF CONSTRUCTION

1.00 DEFINITIONS

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Master Project Schedule** - The Master Project Schedule shall show the sequence, duration in calendar days, interdependence for the complete performance of all Work. The Master Project Schedule shall begin with the date of issuance of the Notice to Proceed and conclude with the date of final completion.
Notice to Proceed - A "Notice to Proceed" means written notice given by the University to the Contractor fixing the date on which the Contract Time will commence to run and/or on which Contractor shall start to perform Contractor’s obligations under the Contract Documents. A Notice to Proceed by the University shall authorize all or a portion of the Work for the Costs so defined.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

### 2.00 BIDDING

**2.01 Duty to Carefully Examine These Instructions**

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

**2.02 Disclosure of Bidders**

The Contractor shall only accept proposals from Subcontractors who are acceptable to the University.
2.03 Clarification During Bidding

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

2.04 Bidding Documents

2.04.1 Bid Proposal Package

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

2.04.2 Listing of Proposed Subcontractors Acceptable to the University

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

2.04.3 Bidder’s Security

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

2.05 Bid Proposals

2.05.1 Submission of Proposals

Proposals shall be submitted to the office indicated on the bid proposal. It is the responsibility of the bidder to see that its bid is received in the proper time. Delays in timely receipt of the bid caused by the United States or the University mail system, independent carriers, acts of God, or any other cause shall not excuse late receipt of a bid. Any bid received after the scheduled closing time for receipt of bids shall not be considered and will be rejected by the University, opened, retained by the University or returned to the bidder unopened.

2.05.2 Withdrawal of Proposals

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

2.05.4 Rejection of Irregular Proposals

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

2.05.5 Power of Attorney or Agent

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

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

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

2.05.7 Exclusion from Contract Documents

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

2.06 Mistake in Bid

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

2.07 Non-Discrimination

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

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

The Contractor shall comply with all requirements of the Elliott-Larsen Civil Rights Act being 1976 PA 453, as amended.
The Contractor shall also comply with the Persons with Disabilities Civil Rights Act being 1976 PA 220, as amended.

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

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

3.00 AWARD AND EXECUTION OF CONTRACT

3.01 Contract Bonds and Insurance

3.01.1 Payment and Performance

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

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

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

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

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

3.02 Execution of Contract

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

3.03 Failure or Refusal to Execute Contract

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

4.00 RESPONSIBILITIES OF THE PARTIES

4.01 University

4.01.1 Information and Services Required of the University

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

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

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

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

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

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

4.01.2 University's Right to Stop the Work

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

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

4.01.3 University’s Right to Carry Out the Work

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

4.01.4 University’s Right to Audit

4.01.4.1

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

4.01.4.2

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

4.01.4.3

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

4.01.4.4

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

4.01.4.5

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

4.01.4.6

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

4.01.4.7

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

4.02 Contractor

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

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

4.02.2 Review of Contract Documents and Field Conditions by Contractor

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

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

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

4.02.3 Supervision and Construction Procedures

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

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

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

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

4.02.4 Quality Control

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

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

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

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

4.02.5 Labor and Materials

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

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

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

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

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

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

4.02.7 Project Manager and Superintendent

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

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

4.02.8 Taxes

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

4.02.9 Permits and Notices

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

4.02.10 Allowances

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

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

2. allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
3. the Contractor’s costs for unloading and handling at the site, labor, installation costs, overhead, profit and other expenses contemplated for stated allowance amounts shall be included in the allowances;

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

4.02.11 Use of Site

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

4.02.12 Safety

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

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

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

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

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

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

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

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

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

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

4.02.14 Cutting, Patching and Sequencing

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

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

4.02.15 Access to Site

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

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

4.02.16 Burden for Damage

From the issuance of the official Notice to Proceed until the formal acceptance of the Project by the University, the Contractor shall have the charge and care of and shall bear all risk of damage to the Project and materials and equipment for the Project other than damage directly caused by the University or the University’s other contractors.

4.02.17 Payments by Contractor

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

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

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

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

4.02.19 Patented or Copyrighted Materials

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

4.02.20 Property Rights in Materials and Equipment

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

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

The Contractor shall provide as-built drawings of all utilities encountered and constructed for the University, indicating the size, horizontal location, and vertical location based on the Project benchmark 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 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 Contractor's 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 prevailing wages in the locality at the time the Work is performed as published by the State of Michigan Department of Wage and Hour for Wayne County, Michigan, or of wage and benefit rates associated with trade union collective bargaining agreements prevailing at the time of the change, and the the use of a classification which would increase the labor cost may not be permitted unless the Contractor established to the satisfaction of the University the necessity for payment at a higher rate.

6.01.3.2 Materials

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

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

6.01.3.3 Equipment

Costs are allowed for the actual cost to the Contractor for the use of equipment directly required in the performance of the changed Work except that no payment will be made for time while equipment is inoperative due to breakdowns or for non-working days. The total rental cost shall not exceed seventy-five percent (75%) of the market value of the rented equipment. The rental time shall include the time required to move the equipment to the Project site from the nearest available source for rental of such equipment, and to return it to the source. If such equipment is not moved by its own power, then loading and transportation costs will be paid. However, neither moving time nor loading and transportation costs will be paid if the equipment is used on the Project in any other way than upon the changed Work. Individual pieces of equipment having a replacement value of $500.00 or less shall be considered to be tools or small equipment, and no payment therefor will be made.

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

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

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

6.01.3.5 Credit for Deleted Work

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

6.01.3.6 Market Values

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

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

6.01.4 Failure to Agree as to Cost

6.01.4.1 For Added Work

Notwithstanding the failure of the University and the Contractor to agree as to the cost of the proposed Change Order, the Contractor, upon written order from the University, shall proceed immediately with the changed Work. A Preliminary Project Cost and Schedule Impact Report or letter signed by the University shall be used for this written order. At the start of each day’s Work on the change, the Contractor shall notify the University in writing as to the size of the labor force to be used for the changed Work and its location. Failure to so notify may result in the non-acceptance of the costs for that day. At the completion of each day’s Work, the Contractor shall furnish to the University a detailed summary of all labor, materials, and equipment employed in the changed Work. The University will compare his/her records with Contractor’s daily summary and may make any necessary adjustments to the summary. After the University and the Contractor agree upon and sign the daily summary, the summary shall become the basis for determining costs for the additional Work. The sum of these costs when added to an appropriate mark-up will constitute the payment for the changed Work. Subsequent adjustments, however, may be made based on later audits by the University. When changed Work is performed at locations away from the job site, the Contractor shall furnish in lieu of the daily summary, a summary submitted at the completion of the Work containing a detailed statement of labor, material, and equipment used in the Work. This latter summary shall be signed by the Contractor who shall certify thereon that the information is true.

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

6.01.4.2 For Deleted Work

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

6.01.5 Allowable Time Extensions

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

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

6.02 Emergency Changes

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

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

6.03 Preliminary Project Cost and Schedule Impact Report

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

7.00 CLAIMS AND DISPUTES

7.01 Policy of Cooperation

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

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

7.03 Time Limits on Claims

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

7.04 Continuing Contract Performance

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

7.05 Claims for Concealed or Unknown Conditions

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

7.06 Claims for Additional Cost

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

7.07 Claims for Additional Time

Any Claim by Contractor for an increase in the Contract Time shall be submitted in writing as required by the Contract Documents. The Contractor’s Claim shall include an estimate of the probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.
If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time and could not have been reasonably anticipated, and that weather conditions had an adverse effect on the scheduled construction.

### 7.08 Injury or Damage to Person or Property

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

### 7.09 Resolution of Claims and Disputes

#### 7.09.1 Review by Design Professional

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

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

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

#### 7.09.2 Review by Associate Vice President of Facilities Planning and Management

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

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

7.09.4 Jurisdiction

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

7.09.5 Condition Precedent

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

8.00 PAYMENT AND COMPLETION

8.01 Progress Payments

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

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

The Contractor warrants that title to the Work, materials and equipment covered by an Application for Payment shall pass to the University upon the earlier of either incorporation in construction or receipt of payment by Contractor; that Work, materials and equipment covered by previous Applications for Payment are free and clear of liens, claims, security interests or encumbrances; and that no Work, materials or equipment covered by an Application for Payment will have been acquired by Contractor or by any other person performing Work at the Project or furnishing materials or equipment for the Project subject to an agreement under which an interest or encumbrance is retained by the seller or otherwise imposed on the Contractor or buyer.
All Applications for Payment shall be accompanied by sworn statements and waivers executed by Contractor, Subcontractors and suppliers whose work is included in the Application for Payment, as well as other documentation that may be required by the University, stating that all have been paid in full for Work performed through the last or most recent progress payment. The Contractor and each subcontractor shall also provide properly completed certified payroll form WH-347 to the University’s with each application for payment request.

8.02 Format of Application for Payment

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

- Applications for Payment shall first present the itemized Cost of Work.
  - For any portion of the Work being performed according to unit pricing or time and materials pricing, invoicing and Applications for Payment must be accompanied by acceptable supporting documentation to evidence accurate quantities of actual labor, materials and equipment. Any allowed mark-ups to the actual cost of Work performed will be added to these costs separately and not included in the actual cost.
  - Change Orders executed between the Contractor and University shall be reported as separate line items within the Application for Payment and directly under applicable Subcontractor Cost of Work items. Change Orders affecting multiple Subcontractors’ 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 not inherent in the quality required or permitted for a period required by the contract documents beginning from the date of...
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-
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

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:

<table>
<thead>
<tr>
<th>Utility</th>
<th>Color</th>
<th>Lettering</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electric</td>
<td>Red</td>
<td>Elect</td>
</tr>
<tr>
<td>Oil/Natural Gas</td>
<td>Yellow</td>
<td>Gas</td>
</tr>
<tr>
<td>Telephone &amp; Fiber Optic</td>
<td>Orange</td>
<td>Tele</td>
</tr>
<tr>
<td>Cable TV</td>
<td>Brown</td>
<td>TV</td>
</tr>
<tr>
<td>Water</td>
<td>Blue</td>
<td>Water</td>
</tr>
<tr>
<td>Steam</td>
<td>Yellow</td>
<td>Steam</td>
</tr>
<tr>
<td>Sewer</td>
<td>Green</td>
<td>Sewer</td>
</tr>
</tbody>
</table>

(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:

(a) State: Statutory

(b) Applicable Federal Statutory
(c) Employer’s Liability
   $1,000,000  per Accident
   $1,000,000  Disease, Policy Limit
   $1,000,000  Disease, Each Employee

.2 Commercial General Liability (including Premises-Operations; Independent Contractors’ Protective; Products and Completed Operations; Broad Form Property Damage):
   (a) Bodily Injury:
       $1,000,000  Each Occurrence
       $2,000,000  Aggregate
   (b) Property Damage:
       $1,000,000  Each Occurrence
       $2,000,000  Aggregate
   (c) Product and Competed Operations to be maintained for three (3) years after final payment
       $2,000,000  Aggregate
   (d) Property Damage Liability Insurance shall provide X,C and U coverage.
   (e) Broad Form Property Damage Coverage shall include Completed Operations.

.3 Contractual Liability:
   (a) Bodily Injury:
       $1,000,000  Each Occurrence
       $1,000,000  Aggregate
   (b) Property Damage:
       $1,000,000  Each Occurrence
       $1,000,000  Aggregate

.4 Personal Injury, with Employment Exclusion deleted (or through a separate employment practice insurance policy):
   $1,000,000  Aggregate

.5 Business Auto Liability (including owned, non-owned and hired vehicles):
   (a) Bodily Injury
       $1,000,000  Aggregate
       $1,000,000  Each Occurrence
   (b) Property Damage
       $1,000,000  Each Occurrence

.6 If the General Liability coverages are provided by a Commercial Liability policy, the:
   (a) General Aggregate shall be not less than $1,000,000 and it shall apply, in total, to this Project only.
   (b) Fire Damage Limit shall be not less than $1,000,000 on any one Fire.
(c) Medical Expense Limit shall be not less than $1,000,000 on any one person.

.7 Umbrella Excess Liability:

$5,000,000 over primary insurance minimum; or a greater amount specified in the Contract Documents
$10,000 retention for self-insured hazards each occurrence

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

.9 Professional Liability (Errors and Omissions) in an amount specified in the Contract Documents.

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

Add the following to 4.12

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

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

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

5.00 INTERPRETATION OF AND ADHERENCE TO CONTRACT REQUIREMENTS

Add the following to 5.04.1

.1 Contractor Requirements

.a Signature: Each item submitted shall be thoroughly reviewed by the Contractor and have a stamp or note describing the Contractor’s action, signed by the person authorized by the Contractor to do the checking with that person’s name clearly printed.
.b Contractor Responsibility: Contractor shall review each submittal for completeness, conformance to the Contract Documents and coordination with other parts of the Work and the Construction Schedule. By providing and submitting to the Design Professional shop drawings, product data, warranties and samples, the Contractor is representing that he or his Subcontractor, has determined and verified (a) the availability of all materials, and (b) field measurements and field construction criteria related thereto, and (c) that he has checked and coordinated the information contained within such submittals with the requirements of the Work, the Contract Documents and the Construction Schedule and that such shop drawings, samples, warranties and data conform to the Contract Documents.

c Limited Acceptance by University and Design Professional: Acceptance is for general design only. Quantities, size, field dimensions and locations are some of the required characteristics which are not part of the acceptance and will not be checked. Accordingly, the limited acceptance shall in no way relieve the Contractor from his obligation to conform his work to required characteristics and to the requirements of the Contract Documents.

d Delays: The Design Professional may return incomplete submittals with no action taken. The Contractor shall have no claim for any damages or for an extension of time due to delay in the Work resulting from the rejection of materials or from the rejection, correction, and resubmittal of Shop Drawings, samples and other data, or from the untimely submission thereof.

.2 Approvals

The Design Professional’s approval shall not indicate approval of dimensions, quantities or fabrication processes unless specific notations are made by the Design Professional regarding same. The Design Professional will check one of the following notations on the Shop Drawing and Sample Review Stamp:

.a "REVIEWED-NO EXCEPTIONS NOTED", indicating final action by the Design Professional. When reviewing resubmitted shop drawings the Design Professional assumes that there are no revisions from the previous submittal, except as provided by 5.04.1 and his review of resubmittals is only for the corrections requested with the approval of the balance of the shop drawing being based on the original submission. Where the Contractor directs specific action to revisions, as provided by 5.04.1 the approval includes these also.

.b "REVIEWED WITH CORRECTIONS NOTED", indicating final action by the Design Professional with the same conditions as "REVIEWED-NO EXCEPTIONS NOTED". Unless he takes exception to the corrections noted, the Contractor may begin that portion of the Work for which the shop drawing was required.

.c "REVISE AND SEND RECORD COPY", requiring that the Design Professional be sent a copy of the revised shop drawing in accordance with the noted corrections, at the same time it is issued for the Work.

.d "NOT APPROVED-RESUBMIT", indicating that the Contractor shall not begin that portion of the Work until the reason indicated for disapproval has been corrected and the revised shop drawing submitted, reviewed and approved by the Design Professional.

.e "NO ACTION REQUIRED", indicating that Contract Documents do not require the Design Professional to review or take any action with this submittal.

.f Where more than one action has been checked, each shall apply to that portion of the shop drawing for which the action is indicated.
8.00 PAYMENT AND COMPLETION

Add the following to 8.01

8.01.1 Monthly Payment Applications

At a meeting mutually agreed upon between the University's Representative and the Contractor, but no less than monthly, the Contractor shall distribute, in triplicate, draft copies of the proposed Payment Application for review and comment. The review, comment and mutual concurrence will be an agenda item at that meeting. The Contractor will prepare the formal Application for submission from the comments made on the Draft and will present the formal application as provided for herein, including all required back-up materials, such as waivers of claim, release of claim on bond, sworn statement, documentation for stored materials, certified payroll reports and other documents required by the University Representative.

8.01.2 Offsite Materials

If an Application for Payment is made for materials not installed in the Work, but suitably stored off-site at a location acceptable to the University's Representative, such application shall be accompanied by legally acceptable paid invoices or conditional bills of sale and copies of delivery tickets, signed by the Contractor, indicating the Contractor verified that the materials shown on the delivery tickets are at the location accepted by the University and are adequately insured. Failure of the Contractor to furnish paid invoices, conditional bills of sale and proof of insurance shall be cause for withholding such amounts from payment until such paid invoices or bills of sale have been received by the University. The University reserves the right to examine the stored items prior to payment.

Add the following to subparagraph 8.03

The following submittals shall be bound in three (3) sets, plus one electronic file of all materials:

.1 Project Closeout Documents

.a The Contractor shall submit to the Design Professional, a written guarantee, which shall be in accordance with Section 8.04 and such additional guarantees, in writing, as are required by the Specifications.

.b The Contractor shall submit complete instruction for the care and maintenance of all finish materials under the contract, including, but not limited to floor finishes and coverings, wainscot and wall finishes, acoustical treatment, metal finishes, painted surfaces, flooring, hardware, and finishes on mechanical and electrical equipment. Instructions shall contain the manufacturer's or supplier's recommendations with respect to cleaning agents, preservative treatment and such other instructions as may be beneficial to the maintenance, usage, appearance and durability of the product. The recommendations shall further contain cautions on the use of certain cleaners and coatings which may be detrimental to the product.

.c The Contractor shall prepare and submit operating and maintenance instructions, coordination drawings, and shop drawings for all mechanical and electrical equipment, and other special items, as called for in the specifications.

.d All of the above described documents shall be checked by Contractor for conformance with the specifications and shall be submitted in uniform size, bound and indexed for cross-reference.

.e The Contractor shall also submit "As-Built" drawings as specified in Section 4.11.
.f Copies of all "Attic Stock" transmittals signed by appropriate University personnel accepting the attic stock material.

.2 Project Closeout Training

a. The University and the Contractor will coordinate, schedule and present formal training for University personnel for all equipment, systems, devices, and building features.

b. Training shall be scripted to include all important aspects of the equipment and its installation and maintenance. Trainers shall be suitably prepared and experienced in the features of the equipment and the equipment’s installation within the project.

c. The Contractor, all product vendors, subcontractors, suppliers and materialmen shall consent to and participate in the recording of the training as determined by the University and the Contractor.

d. The University may supplement training with outside providers to meet the training requirements of the project should a vendor, subcontractor, or supplier fail to provide the required training. The University shall be reimbursed by the Contractor for any such costs for supplemental training.
The Technical Specifications dated October 2, 2017 and the following List of Drawings represent the scope of work as defined in the Contract Documents from Article 4.

<table>
<thead>
<tr>
<th>Drawing No.</th>
<th>Description</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>-G100</td>
<td>Drawing List / Location Plan</td>
<td>10/2/2017</td>
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GENERAL REQUIREMENTS

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 Supplementary General Conditions.

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 (Revised 3-26-2012)

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 (Revised 11-2008)

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 purposes of system maintenance.

PROTECTION OF OCCUPANCY (Revised 3-2006)

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. Any Stored Material shall be kept a minimum distance of 25 feet from the building.

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 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 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**

   If required, the Contractor shall provide and pay for a temporary telephone within the building for his use and that of his subcontractors.

   No use of the Owner's telephone (except pay 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 Built", 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.


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 (revised 4-11-2012)

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 from all suppliers who provide materials exceeding $1,000. 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

A. 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

A. 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 backcharge 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: Engineering Technology Roof Replacement
WSU PROJECT NO.: 167-304299
PROJECT MANAGER: Matt Walker

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 Strip existing roof down to concrete deck and replace roofing system in its entirety including insulation, roofing, flashings, copings, etc. Roof to be a “hot mopped” SBS. Construction must take place in fall of 2017.

3. The building is located at

Wayne State University
4855 Fourth Street
Detroit, Michigan 48202
PROJECT MANUAL

WAYNE STATE UNIVERSITY
FACILITIES PLANNING &
MANAGEMENT DESIGN SERVICES
5454 CASS AVENUE
DETROIT, MICHIGAN 48202

ROOF REPLACEMENT
ENGINEERING TECHNOLOGY BUILDING
4855 FOURTH STREET, DETROIT, MICHIGAN 48201
WSU Project #167-304299
## Table of Contents

### DOCUMENT SET

The Contract Drawings that accompany this Project Manual and with it form the Document Set are identified by the same Architect Project No. as this Project Manual. The individual drawings are listed on the Drawing Cover Sheet.

Verification of Document Set: Verify that the Document Set transmitted is complete. Compare Drawings received with lists. Documents in the Project Manual, except standard pre-printed Documents, are terminated with "END OF ..." statement.

The Document Set will include additional Documents, if any, that are issued in conjunction with addenda and bulletins.

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SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

A. Unit Price No. 1: Roof Sump Replacement. Refer to Specification Sections 220500-Common Work Results for Plumbing, and 221423-Storm Drainage Piping Specialties, and drawings.

1. Provide Unit Price to remove and replace existing roof sump assembly, including body, cover, and pan.

END OF SECTION 012200
SECTION 012300 - ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY
A. Section includes administrative and procedural requirements for alternates.

1.2 DEFINITIONS
A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.
1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES
A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.
1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES
A. Alternate No. 1: New Roof - Refer to Specification Section 075216-Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing, and drawings.
2. Alternate Bid: 2-ply Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing, 5/8-inch cover board, 2.6-inch Polyisocyanurate Roof Insulation (R15), Base layer of 2.6-inch Polyisocyanurate Roof Insulation (R15), 2-Ply Vapor Barrier (Approximately 6-1/8 inches).

B. Alternate No. 2: Increase SBS Roof Manufacturer’s Warranty from 20 to 25 years - Refer to Specification Section 075216-Styrene-Butadiene-Styrene (SBS) Modified Bituminous Membrane Roofing, and drawings.
1. SBS Base Bid: One layer mopped-in base sheet.
2. SBS Alternate Bid: 2 layers base sheet, mopped-in individually.

C. Alternate No. 3: Increase TPO Roof Manufacturer’s Warranty from 20 to 25 years. Refer to Specification Section 075423-Thermoplastic Polyolefin (TPO) Roofing, and drawings
1. SBS Base Bid: 50 Mil Minimum TPO with 20 year Warranty.
2. SBS Alternate Bid: 55 Mil Minimum TPO with 25 year Warranty.

END OF SECTION 012300
SECTION 012500 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements governing:

B. Refer elsewhere for:
   1. Product submittals (shop drawings, product data, samples).
   2. Contract modification procedures.

C. Acceptable (Named) Products/Manufacturers: Where one or more products/manufacturers are named, do not provide other products/manufacturers. Refer to heading "Product Selection" for governing provisions.

D. Substitutions are governed by provisions under "Substitution Procedures and Requirements".

1.2 DEFINITIONS

A. Definitions used in this Section are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well recognized meanings in the construction industry.

   1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
      a. "Named Products" are items identified by manufacturer's product name, including make or model designation, indicated in the manufacturer's published product literature, that is current as of the date of the Contract Documents.

   2. "Materials" are products that are substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.

   3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.

1.3 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, unused at the time of installation.

   1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.

   2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: Product selection is governed by the Contract Documents and governing regulations, not by previous Project experience. Procedures governing product selection include the following:

   1. Proprietary Specification Requirements: Where only a single product or manufacturer is named, provide the product indicated. No substitutions will be permitted.

   2. Semiproprietary Specification Requirements: Where two or more products or manufacturers are named, provide one of the products indicated. No substitutions will be permitted.
3. Equivalent products may be permitted where products or manufacturers are specified by name, accompanied by the term "or equal," "or approved equal," or "approved substitute." The Architect will determine if products not named in the specifications are equal.
   a. Certain products, where specified, require the Architect's acceptance of equivalent products prior to bid due date.

4. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.

5. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements, and are recommended by the manufacturer for the application indicated. General overall performance of a product is implied where the product is specified for a specific application.
   a. Manufacturer's recommendations may be contained in published product literature, or by the manufacturer's certification of performance.

C. Compliance with Standards, Codes and Regulations: Where compliance with an imposed code, standard or regulation, is required, select a product that complies with applicable standards, codes or regulations specified.

D. Visual Matching: Where Specifications require matching an established sample or existing construction, the Architect's decision will be final on whether a proposed product matches satisfactorily.
   1. Where no product available within the specified category matches satisfactorily and also complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category, or for noncompliance with specified requirements.

E. Visual Selection: Select products that comply with specified requirements. For all items visible after construction is complete, the Architect will select the color, pattern and texture from the full range of options available within the product line selected. Submit choices and request selection.

F. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
   1. When specified products are available only from sources that do not or cannot produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect for a determination of the most important product qualities before proceeding. Qualities may include attributes relating to visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources that produce products that possess these qualities, to the fullest extent possible.

G. Compatibility of Options: When the Contractor is given the option of selecting between two or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.

1.4 SUBSTITUTION PROCEDURES AND REQUIREMENTS

A. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for "substitutions." The following are not considered substitutions:
   1. Items identified during the bidding period, and accepted by the Architect in writing prior to award of Contract, are considered as included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
   2. Revisions to Contract Documents requested by the Owner or Architect.
4. The Contractor's determination of and compliance with governing regulations and orders issued by
governing authorities.

B. Substitution Request Submittal: Requests for substitution will be considered if received within 21 days after
formal notice to proceed; requests received after that time may be considered or rejected at the discretion of the
Architect.

1. Use a copy of the form at the end of this Section.

C. Architect's Action: Within one week of receipt of the request for substitution, the Architect will request
additional information or documentation necessary for evaluation of the request. Within 2 weeks of receipt of
the request, or one week of receipt of the additional information or documentation, which ever is later, the
Architect will notify the Contractor of acceptance or rejection of the proposed substitution. Acceptance will be
in the form of a Change Order. If a decision on use of a proposed substitute cannot be made or obtained within
the time allocated, use the product specified by name in the Contract Documents.

D. Requirements: Substitution requests shall meet the following requirements:

1. Extensive revisions to Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of Contract Documents.
3. The request is timely, fully documented and properly submitted.

E. The Contractor's submittal and Architect's acceptance of Shop Drawings, Product Data or Samples that relate to
construction activities not complying with the Contract Documents does not constitute an acceptable or valid
request for substitution, nor does it constitute approval.

F. Conditions: The Contractor's substitution request will be received and considered by the Architect when one or
more of the following conditions are satisfied, as determined by the Architect; otherwise requests will be
returned without action except to record noncompliance with these requirements.

1. The specified product or method of construction cannot be provided within the Contract Time. The
request will not be considered if the product or method cannot be provided as a result of failure to pursue
the Work promptly or coordinate activities properly.
2. The specified product or method of construction cannot receive necessary approval by a governing
authority, and the requested substitution can be approved.
3. A substantial advantage is offered the Owner, in terms of cost, time, energy conservation or other
considerations of merit, after deducting offsetting responsibilities the Owner may be required to bear.
Additional responsibilities for the Owner may include additional compensation to the Architect for
redesign and evaluation services, increased cost of other construction by the Owner or separate
contractors, and similar considerations.
4. The specified product or method of construction cannot be provided in a manner that is compatible with
other materials, and where the Contractor certifies that the substitution will overcome the incompatibility.
5. The specified product or method of construction cannot be coordinated with other materials, and where
the Contractor certifies that the proposed substitution can be coordinated.
6. The specified product or method of construction cannot provide a warranty required by the Contract
Documents and where the Contractor certifies that the proposed substitution provides the required
warranty.

END OF SECTION 012500

(Substitution Request Form follows)
PRIME CONTRACTOR'S SUBSTITUTION REQUEST SUBMITTAL
(Use separate form for each request)

Refer to Specification Section 012500 Product Requirements.

Date when bids for this item were received:

TO: NSA Architects, Engineers, Planners
    Attn: Construction Administration
    23761 Research Drive
    Farmington Hills, MI 48335
    Phone: (248) 477-2444, Fax: -2445

We request acceptance of the proposed substitution that is generally described as follows:

If accepted, the proposed substitution would revise the following Specifications (All other requirements would remain unchanged):

We are attaching to this request the following items:

- 4 copies of pertinent product data that are noted and highlighted to indicate the exact product(s) proposed.
- 4 copies of Contract Drawing details and Contract Specification pages, noted to indicate all revisions that are necessary in order to accommodate the proposed substitution.

The condition(s) that produce this request are as follows (refer to acceptable conditions described in 012500):

We certify that in every significant respect, the proposed substitution is equal to, or better than, that required by the Contract Documents, and that the proposed substitution will perform adequately in the intended application.

We waive the right to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

As part of this Substitution Request, we propose the following changes:

To the Contract Sum:   ☐ Add    ☐ Subtract   $ __________________________
To the Contract Time:  ☐ Add    ☐ Subtract   __________________________ days

Subcontractor/Supplier

<table>
<thead>
<tr>
<th>Name</th>
<th>Phone</th>
<th>Fax</th>
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Representative's Signature Date

Contractor's Acceptance Rejection

Representative's Signature Date

Architect's Acceptance Rejection

Representative's Signature Date

Owner's Acceptance Rejection

Representative's Signature Date
SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies procedures and related requirements for submittal of:
   1. Shop Drawings.
   2. Product Data.
   3. Samples.

B. Submittals not conforming to requirements are subject to return without review, requiring revision and resubmittal. Non-conforming submittals may obligate the Contractor to the Owner for Architect fees to cover excessive review time.

C. Refer elsewhere for the following submittals:
   1. Product substitution requests.
   2. Progress schedules and reports.
   3. Quality control test and inspection.
   4. Payment applications.

D. Conformance to Contract Documents: Submittals that do not conform to requirements of the Contract Documents shall be clearly noted as to extent of deviation. Acceptance of submittal without such clear notation is subject to cancellation at any time.

E. Transmittal of all submittals shall be from the Contractor to the Architect. Subcontractors and suppliers shall transmit submittals through the Contractor.

F. Submittal Copies and Disposition:

<table>
<thead>
<tr>
<th></th>
<th>Contractor to Submit</th>
<th>NSA</th>
<th>Owner</th>
<th>Contractor to Receive</th>
</tr>
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<tbody>
<tr>
<td>Shop Drawings</td>
<td>3 prints</td>
<td>1 print</td>
<td>1 print</td>
<td>1 print</td>
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<tr>
<td>Product Data</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Samples</td>
<td>3</td>
<td>1</td>
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</table>

1. Maintain 1 copy of all returned submittals at Project site for review upon request.

2. When a proposed finish will vary in color or texture, submit paired samples demonstrating maximum variation.

G. Processing Period: Two weeks.
1.2 SUBMITTAL PROCEDURES

A. Coordination: Coordinate preparation and processing of submittals with submittal schedule and performance of construction activities. Transmit each submittal sufficiently in advance of performance of related construction activities to avoid delay.

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related elements of the Work so processing will not be delayed by the need to review submittals concurrently for coordination.

   a. The Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.

B. Processing: Allow sufficient review time so that installation will not be delayed as a result of the time required to process submittals, including time for resubmittals.

1. Allow the indicated processing time for each submittal review. Allow additional time if processing must be delayed to permit coordination with subsequent submittals.

2. No extension of Contract Time will be authorized because of failure to transmit properly prepared submittals to the Architect sufficiently in advance of the Work to permit processing.

C. Submittal Preparation: Place a permanent label or title block on each submittal with the following information:

1. Project name.

2. Date.

3. Names of Architect, Contractor, Subcontractor, Supplier, Manufacturer.

4. Number and title of appropriate Specification Section.

5. Drawing number and detail references, as appropriate.

6. Provide a space approximately 3" x 6" on the label or beside the title block on Shop Drawings to accommodate the Contractor's and Architect's review stamp.

7. Package each submittal appropriately for transmittal and handling. Transmit each submittal using an approved form. Submittals received from sources other than the Contractor will be returned without action.

8. On the form, or separate sheet, note relevant information and requests for data and record deviations from Contract Document requirements, including minor variations and limitations. Include Contractor's certification that information complies with Contract Document requirements.

D. Submittal Form: Photocopy the sample form at the end of this Section for transmittal of submittals. Do not use separate transmittal form.

1.3 SHOP DRAWINGS

A. Submit newly prepared information, drawn to accurate scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Standard information prepared without specific reference to the Project is not considered Shop Drawings.

B. Shop Drawings include fabrication and installation drawings, setting diagrams, schedules, patterns, templates and similar drawings. Include the following information:

1. Dimensions, in English units.

2. Identification of products and materials included.

3. Compliance with specified standards.
4. Notation of coordination requirements.
5. Notation of dimensions established by field measurement.

C. Sheet Size
   1. 8-1/2" x 11" minimum.
   2. 24" x 36" maximum, except where templates and similar full-size drawings are required.

Do not use Shop Drawings without an appropriate final stamp indicating action taken in connection with construction.

1.4 PRODUCT DATA
   A. Collect Product Data into a single submittal for each element of construction or system.
   B. Product Data includes printed information such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams and performance curves. Where Product Data must be specially prepared because standard printed data is not suitable for use, submit as "Shop Drawings."

1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Include the following information:
   a. Manufacturer's printed recommendations.
   b. Compliance with recognized trade association standards.
   c. Compliance with recognized testing agency standards.
   d. Application of testing agency labels and seals.
   e. Notation of dimensions verified by field measurement.
   f. Notation of coordination requirements.

2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.

3. Distribution: Furnish copies of final submittal to installers, subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.
   a. Do not proceed with installation until a copy of related Product Data with acceptance stamp is in the installer's possession.

1.5 SAMPLES
   A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed.
   B. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture and pattern.

1. Mount, display, or package Samples in the manner specified to facilitate review of qualities indicated. Include the following:
   a. Generic description of the Sample.
   b. Sample source.
   c. Product name or name of manufacturer.
   d. Compliance with recognized standards.
   e. Availability and delivery time.
2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics with other elements, and for a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
   a. Where variation in color, pattern, texture or other characteristics are inherent in the material or product represented, submit multiple unit sets, that show approximate limits of the variations.
   b. Refer to Division 1 Section “Alternates” for alternates that affect this Section.
   c. Refer to individual Specification Sections for requirements for Samples that illustrate workmanship, fabrication techniques, details of assembly, connections, operation and similar construction characteristics.
   d. Where indicated, certain Samples will be returned to the Contractor for incorporation in the Work. Such Samples may be submitted as single units and shall be undamaged at time of use. On the transmittal, indicate request for return of such Samples.

C. Selection submittals: Where Samples are for selection of color, pattern, texture or similar characteristics from a range of standard choices, submit a full set of choices for the material or product. Subsequent submittal of sample, with selected characteristics, may be required.
   1. Maintain sets of Samples, with acceptance stamp, at the Project site, for quality comparisons throughout the course of construction.
      a. Sample sets may be used to obtain final acceptance of the construction associated with each set.

D. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work.
   1. Field Samples specified in individual Sections are special types of Samples. Field Samples are full-size examples erected on site to illustrate finishes, coatings, or finish materials and to establish the standard by which the Work will be judged.
      a. Comply with submittal requirements to the fullest extent possible. Process transmittal forms to provide a record of activity.

1.6 AFFIDAVITS OF FIRE PERFORMANCE
A. When requested, submit signed affidavits that state the fire performance characteristics of material and construction provided. Signatures shall be by the Contractor, manufacturer or fabricator, and installer, as required; that meet requirements of governing building officials.

1.7 ARCHITECT'S ACTION
A. Except for submittals for record, information or similar purposes, where action and return is required or requested, the Architect will review each submittal, mark to indicate action taken, and return promptly.
   1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The Architect will stamp each submittal with a uniform, self-explanatory action stamp. The stamp will be appropriately marked, as follows, to indicate the action taken:
   1. Final Unrestricted Release: Where submittals are marked "Accepted," that part of the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents; final acceptance will depend upon that compliance.
   2. Final-But-Restricted Release: When submittals are marked "Accepted as Corrected," that part of the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents; final acceptance will depend on that compliance.
3. Returned for Resubmittal: When submittal is marked "Not Accepted" or "Revise and Resubmit," do not proceed with that part of the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal in accordance with the notations; resubmit without delay. Repeat if necessary to obtain a different action mark.
   a. Do not distribute or permit submittals marked "Not Approved" or "Revise and Resubmit" to be used.

4. Other Action: Where a submittal is primarily for information or record purposes, special processing or other activity, the submittal will be returned, marked appropriately.
   
   C. Material not requested by the Architect will not be reviewed; return of the materials will be at the Architect's discretion.

END OF SECTION 013300

(Submittal Routing Transmittal Form follows)
THIS SHEET INTENTIONALLY LEFT BLANK
**SUBMITTAL ROUTING TRANSMITTAL**

**WSU ROOF REPLACEMENT – ENGINEERING TECHNOLOGY BUILDING**

**INSTRUCTIONS:** Do not cover with separate transmittal. Strike-out previous routing steps.

<table>
<thead>
<tr>
<th>From Prime Contractor to NSA</th>
<th>To Consultant For Review</th>
<th>From NSA to Contractor</th>
</tr>
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</table>
| TO: NSA Architects, Engineers, Planners  
Attn: Construction Administration  
23761 Research Drive  
Farmington Hills, MI 48335  
Phone: 248/477-2444, Fax: -2445 | TO: ________________________  
Attn: The items submitted have been reviewed for compliance with the Contract Documents. The Contractor remains responsible for the complete submittal of all material required by the Contract Documents, and for the satisfactory completion of work in compliance with the Contract Documents.  
Submittal Review By: | TO: ________________________  
Attn: ________________________  
Sent By: ________________________  
Via: ________________________  
Date Sent: ________________________ |
| FROM: _________ Fax: __________ | Returned Via: ________________________  
Date Sent: ________________________ | From Consultant to NSA  
TO: NSA  
Attn: Construction Administration  
Submittal Review By: ________________________  
Sent By: ________________________  
Via: ________________________  
Date Sent: ________________________ |

**NSA IN-HOUSE ROUTING:**

We have examined the items accompanying this form and believe them to be in compliance with Contract Documents, except where deviation is clearly noted.

**Contractor Representative's Signature**

Date:

**NSA REVIEW CODE:**

1-ACCEPTED  2-ACCEPTED AS CORRECTED  3-REVISE AND RESUBMIT  4-NOT ACCEPTED  5-REVIEWED  6-NOT REQUESTED

---

**INSTRUCTIONS:** Group submittals into separate packages of related materials. Package and number Mechanical and Electrical submittals separately.
SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Requirements:
   
   1. Section 011000 "Summary" for work restrictions and limitations on utility interruptions.

1.2 USE CHARGES

A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water and Sewer Service from Existing System: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power Service from Existing System: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.3 INFORMATIONAL SUBMITTALS

A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.

B. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire prevention program.

1.4 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.5 PROJECT CONDITIONS

A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch-thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch-OD line posts and 2-7/8-inch-OD corner and pull posts, with 1-5/8-inch-OD top and bottom rails. Provide concrete or galvanized-steel bases for supporting posts.

2.2 TEMPORARY FACILITIES

A. Field Offices, General: Prefabricated or mobile units with serviceable finishes, temperature controls, and foundations adequate for normal loading.

B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.

1. Locate facilities to limit site disturbance as specified in Section 011000 "Summary."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
B. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
   1. Install electric power service overhead unless otherwise indicated.
   2. Connect temporary service to Owner's existing power source, as directed by Owner.

C. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
   1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:
   1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
   2. Maintain support facilities until Architect schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Temporary Use of Permanent Roads and Paved Areas: Locate temporary roads and paved areas in same location as permanent roads and paved areas. Construct and maintain temporary roads and paved areas adequate for construction operations. Extend temporary roads and paved areas, within construction limits indicated, as necessary for construction operations.
   1. Coordinate elevations of temporary roads and paved areas with permanent roads and paved areas.
   2. Prepare subgrade and install subbase and base for temporary roads and paved areas according to Section 312000 "Earth Moving."
   3. Recondition base after temporary use, including removing contaminated material, regrading, proofrolling, compacting, and testing.

C. Traffic Controls: Comply with requirements of authorities having jurisdiction.
   1. Protect existing site improvements to remain including curbs, pavement, and utilities.
   2. Maintain access for fire-fighting equipment and access to fire hydrants.

D. Parking: Use designated areas of Owner's existing parking areas for construction personnel.

E. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
   1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
   2. Remove snow and ice as required to minimize accumulations.

F. Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.
   1. Identification Signs: Provide Project identification signs as indicated on Drawings.
   2. Temporary Signs: Provide other signs as indicated and as required to inform public and individuals seeking entrance to Project.
a. Provide temporary, directional signs for construction personnel and visitors.

3. Maintain and touchup signs so they are legible at all times.

G. Waste Disposal Facilities: Comply with requirements specified in Section 017419 "Construction Waste Management and Disposal."

H. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with progress cleaning requirements in Section 017300 "Execution."

I. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

J. Existing Elevator Use: Use of Owner's existing elevators will be permitted, provided elevators are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore elevators to condition existing before initial use, including replacing worn cables, guide shoes, and similar items of limited life.

1. Do not load elevators beyond their rated weight capacity.
2. Provide protective coverings, barriers, devices, signs, or other procedures to protect elevator car and entrance doors and frame. If, despite such protection, elevators become damaged, engage elevator Installer to restore damaged work so no evidence remains of correction work. Return items that cannot be refinished in field to the shop, make required repairs and refinish entire unit, or provide new units as required.

K. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.

L. Existing Stair Usage: Use of Owner's existing stairs will be permitted, provided stairs are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.

B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to requirements of 2003 EPA Construction General Permit or authorities having jurisdiction, whichever is more stringent.
D. Stormwater Control: Comply with requirements of authorities having jurisdiction.

E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.

F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of pigeons, gulls, rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using environmentally safe materials.

G. Site Enclosure Fence: Before construction operations begin, furnish and install site enclosure fence in a manner that will prevent people and animals from easily entering site except by entrance gates.
   1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations As indicated on Drawings.
   2. Maintain security by limiting number of keys and restricting distribution to authorized personnel. Furnish one set of keys to Owner.

H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each work day.

I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.

J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.

K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
   1. Where heating or cooling is needed and permanent enclosure is not complete, insulate temporary enclosures.

L. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241; manage fire prevention program.
   1. Prohibit smoking in construction areas.
   2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
   3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
   4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 MOISTURE AND MOLD CONTROL

B. Exposed Construction Phase: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect materials from water damage and keep porous and organic materials from coming into prolonged contact with concrete.

C. Partially Enclosed Construction Phase: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
   1. Keep interior spaces reasonably clean and protected from water damage.
   2. Discard or replace water-damaged and wet material.
   3. Discard, replace, or clean stored or installed material that begins to grow mold.
   4. Perform work in a sequence that allows any wet materials adequate time to dry before enclosing.

3.6 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.
   1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
   1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
   2. At Substantial Completion, repair, renovate, and clean permanent facilities used during construction period. Comply with final cleaning requirements specified in Section 017700 "Closeout Procedures."

END OF SECTION 015000
SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes procedural requirements for cutting and patching.
B. Related Sections include the following:
   1. Division 02 Section "Selective Structure Demolition" for demolition of selected portions of the building.

1.2 DEFINITIONS
A. Cutting: Removal of in-place construction necessary to permit installation or performance of other Work.
B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.3 QUALITY ASSURANCE
A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Owner’s Representative's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1.4 WARRANTY
A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS
A. General: Comply with requirements specified in other Sections.
B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
   1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION
A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
   1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
   2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.
3.2 PREPARATION
A. Temporary Support: Provide temporary support of Work to be cut.
B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to prevent interruption to occupied areas.

3.3 PERFORMANCE
A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
   1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
   1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
   2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
   3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
   4. Proceed with patching after construction operations requiring cutting are complete.
C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
   1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
   2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
   3. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017329
SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

TO THE EXTENT THIS SECTION IS INCONSISTENT WITH THE CONSTRUCTION AGREEMENT (CA), THE CA SHALL CONTROL TO THE EXTENT OF THE INCONSISTENCY. OTHERWISE, THIS SECTION SHALL SUPPLEMENT THE CA.

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes administrative and procedural requirements for disposing of non-hazardous demolition and construction waste.

1.2 DEFINITIONS
A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
B. Disposal: Removal off-site construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
C. Recycle: Recovery of construction waste for subsequent processing in preparation for reuse.
D. Salvage: Recovery of construction waste and subsequent sale or reuse in another facility.
E. Salvage and Reuse: Recovery of construction waste and subsequent incorporation into the Work.

1.3 QUALITY ASSURANCE
A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION
A. General: Implement waste management plan as approved by Owner. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
B. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
   1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
   2. Comply with Division 01 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 DISPOSAL OF WASTE
A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.
   1. Except as otherwise specified, do not allow waste materials that are to be disposed of to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
B. Burning: Do not burn waste materials.
C. Disposal: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 017419
SECTION 017700 – CLOSEOUT PROCEDURES

TO THE EXTENT THIS SECTION IS INCONSISTENT WITH THE CONSTRUCTION AGREEMENT (CA), THE CA SHALL CONTROL TO THE EXTENT OF THE INCONSISTENCY. OTHERWISE, THIS SECTION SHALL SUPPLEMENT THE CA.

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements for contract closeout, including but not limited to, the following:

1. Inspection procedures.
2. Warranties.
3. Final cleaning.

1.2 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting review for Certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
   a. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.
2. Review each Section, Divisions 02 through 32, for the following items and complete related requirements:
   a. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications and similar documents.
   b. Deliver tools, spare parts, extra stock, and similar items.
   c. Advise Owner of pending insurance change-over requirements.
   d. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities; include occupancy permits, operating certificates and similar releases.
   e. Complete inspection of roofing, and instruction of the Owner's operating and maintenance personnel. Discontinue and remove temporary facilities from the site, along with construction tools, and similar elements.
   f. Complete final clean up requirements, including touch-up painting. Touch-up and otherwise repair and restore marred exposed finishes.

B. Punchlist Procedures:

1. The Contractor will conduct inspections of the Work to verify the extent of completion. The Contractor will provide to the Owner a work completion list that is a list of the items to be corrected or completed resulting from the inspections, when the Contractor, upon completing all prerequisite testing of the Work, considers the Work to have progressed to the point of being substantially complete.
2. Within a reasonable time after receiving the Contractor’s work completion list, the Owner, Contractor and Architect will jointly conduct a Substantial Completion inspection. If, after consulting with the Owner, the Architect does not consider the Work inspected to be substantially complete, then the Architect will deliver a list of incomplete or defective work sufficient to demonstrate the basis for that determination within twenty (20) calendar days.

3. The Architect/Engineer will repeat review (once) when requested and assured that the Work has been substantially completed.

4. Results of the completed review will form the basis of requirements for final acceptance.
   a. Additional review, if necessary to establish Substantial Completion, will obligate Contractor to reimburse Owner for payment of related Architect/Engineer services.

5. If the Owner and Architect agree that the Work is substantially complete, then the Architect will deliver to the Owner and Contractor a Certificate of Substantial Completion with a Punch List. The certificate will (a) fix a reasonable date of Substantial Completion, (b) fix a date for completion of the Punch List to the satisfaction of the Owner and Architect, and (c) recommend a division of responsibilities between the Owner and Contractor for transfer of the facility. Upon Substantial Completion, Owner may withhold 200% if the value of any uncompleted Work as determined by the Owner and Architect from subsequent Contractor pay applications.

6. To the extent that Owner training is required before Substantial Completion, the Contractor will provide copies of all related operating and maintenance documentation before the start of training.

1.3 FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.
   1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include warranties for products and completed operations where required.
   2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
   3. Submit a certified copy of the Architect/Engineer's final review list of items to be completed or corrected, stating that each item has been completed or otherwise resolved for acceptance, and the list has been endorsed and dated by the Architect/Engineer.

B. Further Review: The Architect/Engineer will again review the Work upon receipt of notice that the Work, including items from earlier reviews, has been completed, except items whose completion has been delayed because of circumstances acceptable to the Architect/Engineer.
   1. Upon further review, the Architect/Engineer will prepare a final certificate of payment, or advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
      a. Additional review, if necessary to establish final acceptance, will obligate Contractor to reimburse Owner for payment of related Architect/Engineer services.

1.4 WARRANTIES

A. Refer to the Contract Conditions for terms of the Contractor's special warranty of workmanship and materials.

B. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products, nor does it relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.

C. Related Damages and Losses: When correcting warranted Work that has failed, remove and replace other Work that has been damaged as a result of such failure or that must be removed and replaced to provide access for correction of warranted Work.
D. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.

E. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.

F. Owner's Recourse: Written warranties made to the Owner are in addition to implied warranties, and shall not limit the duties, obligations, rights and remedies otherwise available under the law, nor shall warranty periods be interpreted as limitations on time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selections to products with warranties not in conflict with requirements of the Contract Documents.

G. Submit written warranties to the Architect/Engineer prior to the date certified for Substantial Completion. If the Architect/Engineer's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect/Engineer.

1. Bind warranties in heavy-duty, commercial quality, durable 3-ring vinyl covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2" by 11" paper.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes; protect from deterioration and loss in a secure, fire-resistive location; provide access to record documents for the Architect/Engineer's reference during normal working hours.

B. Record Documents (Red Lines, As-Builts): Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set in red to show the actual installation where the installation varies substantially from the Work as originally shown. Mark whichever drawing is most capable of showing conditions fully and accurately; where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil; use other colors to distinguish between variations in separate categories of the Work.

2. Mark new information that is important to the Owner, but was not shown on Contract Drawings or Shop Drawings.

3. Note related Change Order numbers where applicable.

4. Organize record drawing sheets into manageable sets, bind with durable paper cover sheets, and print suitable titles, dates and other identification on the cover of each set.

C. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, and similar documents, correspondence, and records established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

D. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record-keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order, properly identified and bound or filed, ready for continued use and reference. Submit to the Architect/Engineer for the Owner's records.
1.6 OPERATION AND MAINTENANCE

A. Maintenance Manuals: Organize operating and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual heavy-duty 2-inch, 3-ring vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:
   1. Emergency instructions.
   2. Copies of warranties.
   3. Inspection procedures.
   4. Shop Drawings and Product Data.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: General cleaning requirements during construction are specified elsewhere.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.
   1. Complete the following cleaning operations before requesting inspection for Certification of Substantial Completion.
      a. Remove labels that are not permanent labels.
      b. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films and similar foreign substances.
      c. Clean the site and surrounding areas of construction-generated rubbish, litter and other displaced or objectionable substances. Sweep paved areas broom clean; remove stains, spills, caked mud, and other foreign deposits. Rake developed grounds that are neither paved nor planted, to a smooth even-textured surface.

C. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

D. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful or dangerous materials into drainage systems. Remove waste materials from the site and dispose of in a lawful manner.
   1. Where extra materials of value remaining after completion of associated Work have become the Owner's property, arrange for disposition of these materials as directed.

END OF SECTION 017700
SECTION 024119 - SELECTIVE STRUCTURE DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes the following:
   1. Demolition and removal of selected portions of building or structure.
   2. Salvage of existing items to be reused or recycled.
B. Related Sections include the following:
   1. Division 01 Section "Cutting and Patching" for cutting and patching procedures.

1.2 DEFINITIONS
A. Remove: Detach items from existing construction and legally dispose of them off-site, unless indicated to be removed and salvaged or removed and reinstalled.
B. Remove and Salvage: Detach items from existing construction and deliver them to Owner ready for reuse.
C. Remove and Reinstall: Detach items from existing construction, prepare them for reuse, and reinstall them where indicated.
D. Existing to Remain: Existing items of construction that are not to be removed and that are not otherwise indicated to be removed, removed and salvaged, or removed and reinstalled.

1.3 SUBMITTALS
A. Qualification Data: For demolition firm.
B. Schedule of Selective Demolition Activities: Indicate the following:
   1. Detailed sequence of selective demolition and removal work, with starting and ending dates for each activity. Ensure Owner's on-site operations are uninterrupted.
   2. Use of elevator and stairs.
   3. Locations of proposed dust- and noise-control temporary partitions and means of egress.
   4. Coordination of Owner's continuing occupancy of portions of existing building.
   5. Means of protection for items to remain and items in path of waste removal from building.

1.4 QUALITY ASSURANCE
A. Demolition Firm Qualifications: An experienced firm that has specialized in demolition work similar in material and extent to that indicated for this Project.
B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning selective demolition. Comply with hauling and disposal regulations of authorities having jurisdiction.
C. Standards: Comply with ANSI A10.6 and NFPA 241.
D. Predemolition Conference: Conduct conference at Project site to review methods and procedures related to selective demolition including, but not limited to, the following:
   1. Inspect and discuss condition of construction to be selectively demolished.
   2. Review structural load limitations of existing structure.
   3. Review and finalize selective demolition schedule and verify availability of materials, demolition personnel, equipment, and facilities needed to make progress and avoid delays.
   4. Review requirements of work performed by other trades that rely on substrates exposed by selective demolition operations.
5. Review areas where existing construction is to remain and requires protection.

1.5 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately adjacent to selective demolition area. Conduct selective demolition so Owner's operations will not be disrupted.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.

C. Notify Architect of discrepancies between existing conditions and Drawings before proceeding with selective demolition.

D. Hazardous Materials: It is not expected that hazardous materials will be encountered in the Work.
   1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Owner will remove hazardous materials under a separate contract.

E. Storage or sale of removed items or materials on-site is not permitted.

F. Utility Service: Maintain existing utilities indicated to remain in service and protect them against damage during selective demolition operations.
   1. Maintain fire-protection facilities in service during selective demolition operations.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

B. Inventory and record the condition of items to be removed and reinstalled and items to be removed and salvaged.

C. When unanticipated mechanical, electrical, or structural elements that conflict with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Architect.

D. Survey of Existing Conditions: Record existing conditions by use of preconstruction photographs.

3.2 MECHANICAL/ELECTRICAL SYSTEMS

A. Existing Services/Systems: Maintain services/systems indicated to remain and protect them against damage during selective demolition operations.

B. Service/System Requirements: Locate, identify, disconnect, and seal or cap off indicated utility services and mechanical/electrical systems serving areas to be selectively demolished.

   1. Owner will arrange to shut off indicated services/systems when requested by Contractor.

   2. If services/systems are required to be removed, relocated, or abandoned, before proceeding with selective demolition provide temporary services/systems that bypass area of selective demolition and that maintain continuity of services/systems to other parts of building.

   3. Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit after bypassing.

      a. Where entire wall is to be removed, existing services/systems may be removed with removal of the wall.

3.3 PREPARATION

A. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

B. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people and damage to adjacent buildings and facilities to remain.
1. Provide protection to ensure safe passage of people around selective demolition area and to and from occupied portions of building.

2. Protect existing finish work that are to remain or that are exposed during selective demolition operations.

C. Temporary Shoring: Provide and maintain shoring, bracing, and structural supports as required to preserve stability and prevent movement, settlement, or collapse of construction and finishes to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.4 SELECTIVE DEMOLITION, GENERAL

A. General: Demolish and remove existing construction only to the extent required by new construction and as indicated. Use methods required to complete the Work within limitations of governing regulations and as follows:

1. Neatly cut openings and holes plumb, square, and true to dimensions required. Use cutting methods least likely to damage construction to remain or adjoining construction. Use hand tools or small power tools designed for sawing or grinding, not hammering and chopping, to minimize disturbance of adjacent surfaces. Temporarily cover openings to remain.

2. Cut or drill from the exposed or finished side into concealed surfaces to avoid marring existing finished surfaces.

3. Do not use cutting torches.

4. Remove decayed, vermin-infested, or otherwise dangerous or unsuitable materials and promptly dispose of off-site.

5. Locate selective demolition equipment and remove debris and materials so as not to impose excessive loads on supporting framing.

6. Dispose of demolished items and materials promptly.

B. Removed and Salvaged Items:

1. Clean salvaged items.

2. Pack or crate items after cleaning. Identify contents of containers.

3. Store items in a secure area until delivery to Owner.

4. Transport items to Owner’s storage area on-site.

5. Protect items from damage during transport and storage.

C. Removed and Reinstalled Items:

1. Clean and repair items to functional condition adequate for intended reuse. Paint equipment to match new equipment.

2. Pack or crate items after cleaning and repairing. Identify contents of containers.

3. Protect items from damage during transport and storage.

4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make item functional for use indicated.

D. Existing Items to Remain: Protect construction indicated to remain against damage and soiling during selective demolition. When permitted by Architect, items may be removed to a suitable, protected storage location during selective demolition and cleaned and reinstalled in their original locations after selective demolition operations are complete.
3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. General: Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain Owner's property, remove demolished materials from Project site and legally dispose of them in an EPA-approved landfill.
   1. Do not allow demolished materials to accumulate on-site.
   2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.
   3. Remove debris from elevated portions of building by chute, hoist, or other device that will convey debris to grade level in a controlled descent.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off Owner's property and legally dispose of them.

3.6 CLEANING

A. Clean adjacent structures and improvements of dust, dirt, and debris caused by selective demolition operations. Return adjacent areas to condition existing before selective demolition operations began.

3.7 SELECTIVE DEMOLITION SCHEDULE

A. Existing Items and Construction to Be Removed: See notes on drawings.

B. Existing Items to Be Removed and Salvaged: See notes on drawings.

C. Existing Items to Be Removed and Reinstalled: See notes on drawings.

END OF SECTION 024119
SECTION 055000 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes the following:
   1. Miscellaneous steel framing and supports.
   2. Metal Ladders.
   3. Ladder Safety Cages

1.2 SUBMITTALS

A. Shop Drawings: Include plans, elevations, sections, and details of metal fabrications and their connections. Show anchorage and accessory items.

PART 2 - PRODUCTS

2.1 METALS

A. Metal Surfaces, General: Provide materials with smooth, flat surfaces without blemishes.

B. Ferrous Metals:
   1. Steel Shapes: ASTM A992/A992M, Grade 50.
   2. Steel Channels, Angles, Plates and Bars: ASTM A 36/A 36M.
   3. Slotted Channel Framing: Cold-formed metal channels complying with MFMA-3, 1-5/8 by 1-5/8 inches. Channels made from galvanized steel complying with ASTM A 653/A 653M, structural steel, Grade 33, with G90 coating; 0.079-inch nominal thickness.
   4. Steel Tubing: ASTM A 500, cold-formed steel tubing.
   5. Steel Pipe: ASTM A 53/A 53M, standard weight (Schedule 40), unless another weight is indicated or required by structural loads.

2.2 FASTENERS

A. General: Type 304 stainless-steel fasteners. Select fasteners for type, grade, and class required.

2.3 MISCELLANEOUS MATERIALS

A. Universal Shop Primer: Fast-curing, lead- and chromate-free, universal modified-alkyd primer complying with MPI #79.

2.4 FABRICATION

A. General: Preassemble items in the shop to greatest extent possible. Use connections that maintain structural value of joined pieces.
   1. Cut, drill, and punch metals cleanly and accurately. Remove burrs and ease edges. Remove sharp or rough areas on exposed surfaces.
   2. Weld corners and seams continuously. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals. Obtain fusion without undercut or overlap. Remove welding flux immediately. Finish exposed welds smooth and blended.
   3. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners where possible. Locate joints where least conspicuous.

B. Miscellaneous Framing and Supports: Provide steel framing and supports not specified in other Sections as needed to complete the Work. Fabricate units from steel shapes, plates, and bars of welded construction. Cut, drill, and tap units to receive hardware, hangers, and similar items.
2.5 FINISHES
   A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes. Finish metal fabrications after assembly.
   B. Steel and Iron Finishes:
      1. Preparation for Shop Priming: Prepare uncoated ferrous-metal surfaces to comply with requirements indicated below for environmental exposure conditions of installed metal fabrications:
         a. Interiors (SSPC Zone 1A): SSPC-SP 3, "Power Tool Cleaning."
      2. Shop Priming: Apply shop primer to uncoated surfaces of metal fabrications.

PART 3 - EXECUTION
3.1 INSTALLATION
   A. General: Perform cutting, drilling, and fitting required for installing metal fabrications. Set metal fabrications accurately in location, with edges and surfaces level, plumb, and true.
      1. Fit exposed connections accurately together. Do not weld, cut, or abrade surfaces of units that have manufacturer finish after fabrication.
      2. Provide anchorage devices and fasteners where metal fabrications are required to be fastened to in-place construction.
   B. Touch up surfaces and finishes after erection.
      1. Painted Surfaces: Clean field welds, bolted connections, and abraded areas and touch up paint with the same material as used for shop painting.

END OF SECTION 05500
SECTION 061053 - MISCELLANEOUS ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY
A. This Section includes the following:
   1. Wood blocking and nailers.

1.2 SUBMITTALS
A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.
   1. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements. Include physical properties of treated materials based on testing by a qualified independent testing agency.
   2. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
   3. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

B. Research/Evaluation Reports: For the following, showing compliance with building code in effect for Project:
   1. Fire-retardant-treated wood.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL
A. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.
   1. Factory mark each piece of lumber with grade stamp of grading agency.
   2. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
   3. Provide dressed lumber, S4S, unless otherwise indicated.

2.2 FIRE-RETARDANT-TREATED MATERIALS
A. General: Comply with performance requirements in AWPA C20 (lumber) and AWPA C27 (plywood).
   1. Use treatment that does not promote corrosion of metal fasteners.
   2. Use Interior Type A, unless otherwise indicated.

B. Identify fire-retardant-treated wood with appropriate classification marking of testing and inspecting agency acceptable to authorities having jurisdiction.

C. Application: Treat items indicated on Drawings, and the following:
   1. Concealed blocking.

2.3 MISCELLANEOUS LUMBER
A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:
   1. Blocking.
   2. Nailers.

B. For items of dimension lumber size, provide Construction or No. 2 grade lumber with 19 percent maximum moisture content of any species.
C. For blocking used for attachment of other construction, select and cut lumber to eliminate knots and other defects that will interfere with attachment of other work.

2.4 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

B. Nails, Brads, and Staples: ASTM F 1667.


D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

F. Lag Bolts: ASME B18.2.1.

G. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

H. Expansion Anchors: Anchor bolt and sleeve assembly of material indicated below with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in unit masonry assemblies and equal to 4 times the load imposed when installed in concrete as determined by testing per ASTM E 488 conducted by a qualified independent testing and inspecting agency.


PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit carpentry to other construction; scribe and cope as needed for accurate fit. Locate blocking, and similar supports to comply with requirements for attaching other construction.

B. Provide blocking as indicated and as required to support facing materials, fixtures, specialty items, and trim.

1. Provide metal clips for fastening gypsum board at corners and intersections where framing or blocking does not provide a surface for fastening edges of panels. Space clips not more than 16 inches o.c.

C. Sort and select lumber so that natural characteristics will not interfere with installation or with fastening other materials to lumber. Do not use materials with defects that interfere with function of member or pieces that are too small to use with minimum number of joints or optimum joint arrangement.

D. Securely attach carpentry work to substrate by anchoring and fastening as appropriate for best trade practices.

E. Use fasteners of size that is appropriate to substrate and exposed elements. Make tight connections between members. Install fasteners without splitting wood; do not countersink nail heads, unless otherwise indicated.

3.2 WOOD BLOCKING INSTALLATION

A. Attach items to substrates to support applied loading. Recess bolts and nuts flush with surfaces, unless otherwise indicated.

END OF SECTION 061053
SECTION 070150 - PREPARATION FOR RE-ROOFING

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Roof tear-off.

1.2 MATERIALS OWNERSHIP
A. Except for items or materials indicated to be reused, reinstalled, or otherwise indicated to remain Owner's property, demolished materials shall become Contractor's property and shall be removed from Project site.

1.3 DEFINITIONS
A. Roofing Terminology: Refer to ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
B. Existing Membrane Roofing System: Existing roofing membrane, roof insulation, surfacing, and components and accessories between deck and roofing membrane.
C. Roof Tear-Off: Removal of existing membrane roofing system from deck.
D. Remove: Detach items from existing construction and legally dispose of them off-site unless indicated to be removed and reinstalled.
E. Existing to Remain: Existing items of construction that are not indicated to be removed.

1.4 SUBMITTALS
A. Product Data: For each type of product indicated.

1.5 QUALITY ASSURANCE
A. Regulatory Requirements: Comply with governing EPA notification regulations before beginning membrane roofing removal. Comply with hauling and disposal regulations of authorities having jurisdiction.
B. Reroofing Conference: Conduct conference at Project site.
   1. Meet with Owner; Architect; Owner's insurer if applicable; testing and inspecting agency representative; roofing system manufacturer's representative; deck Installer; roofing Installer including project manager, superintendent, and foreman; and installers whose work interfaces with or affects reroofing including installers of roof accessories and roof-mounted equipment.
   2. Review methods and procedures related to roofing system tear-off and replacement including, but not limited to, the following:
      a. Reroofing preparation, including membrane roofing system manufacturer's written instructions.
      b. Temporary protection requirements for existing roofing system that is to remain during and after installation.
      c. Existing roof drains and roof drainage during each stage of reroofing, and roof drain plugging and plug removal requirements.
      d. Construction schedule and availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
      e. Condition and acceptance of existing roof deck and base flashing substrate for reuse.
      f. Structural loading limitations of deck during reroofing.
      g. Base flashings, special roofing details, drainage, penetrations, equipment curbs, and condition of other construction that will affect reroofing.
      h. HVAC shutdown and sealing of air intakes.
i. Governing regulations and requirements for insurance and certificates if applicable.

j. Existing conditions that may require notification of Architect before proceeding.

1.6 PROJECT CONDITIONS

A. Owner will occupy portions of building immediately below reroofing area. Conduct reroofing so Owner's operations will not be disrupted. Provide Owner with not less than 72 hours notice of activities that may affect Owner's operations.

1. Coordinate work activities daily with Owner so Owner can place protective dust or water leakage covers over sensitive equipment or furnishings, shut down HVAC and fire-alarm or -detection equipment if needed, and evacuate occupants from below the work area.

B. Protect building to be reroofed, adjacent buildings, walkways, site improvements, exterior plantings, and landscaping from damage or soiling from reroofing operations.

C. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities.

D. Limit construction loads on roof, rooftop equipment, wheel loads, and uniformly distributed loads.

E. Weather Limitations: Proceed with reroofing preparation only when existing and forecasted weather conditions permit Work to proceed without water entering existing roofing system or building.

F. Hazardous Materials: It is not expected that hazardous materials such as asbestos-containing materials will be encountered in the Work.

1. Hazardous materials will be removed by Owner before start of the Work. Existing roof will be left no less watertight than before removal.

2. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and Owner. Hazardous materials will be removed by Owner under a separate contract.

PART 2 - PRODUCTS

2.1 INFILL MATERIALS

A. Use infill materials matching existing membrane roofing system materials unless otherwise indicated.

B. Provide unit prices per Division 01 Section “Unit Prices” for cutting and patching substrate decking found not to be structurally sound.

2.2 TEMPORARY ROOFING MATERIALS

A. Design and selection of materials for temporary roofing are responsibilities of Contractor.

B. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).

C. Base Sheet: ASTM D 4601, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet.

D. Glass-Fiber Felts: ASTM D 2178, Type IV, asphalt-impregnated, glass-fiber felt.

E. Asphalt Primer: ASTM D 41.

F. Roofing Asphalt: ASTM D 312, Type III or IV.

PART 3 - EXECUTION

3.1 ROOF TEAR-OFF

A. General: Notify Owner each day of extent of roof tear-off proposed for that day.

B. Remove aggregate ballast from roofing membrane.

C. Remove walkway pavers and accessories from roofing membrane. Store and protect pavers and accessories for reuse. Discard cracked pavers.
D. Roof Tear-Off: Remove existing roofing membrane and other membrane roofing system components to extent indicated.

1. Bitumen and felts that are firmly bonded to concrete decks are permitted to remain if felts are dry. Remove unadhered bitumen and felts and wet felts.

2. Remove excess asphalt from steel deck. A maximum of 15 lb/100 sq. ft. of asphalt is permitted to remain on steel decks.

3. Remove fasteners from deck.

3.2 DECK PREPARATION

A. Inspect deck after tear-off of membrane roofing system.

B. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263 or by pouring 1 pint of hot roofing asphalt on deck at start of each day's work and at start of each roof area or plane. Do not proceed with roofing work if moisture condenses under the plastic sheet or if asphalt test sample foams or can be easily and cleanly stripped after cooling.

C. If broken or loose fasteners that secure deck panels to one another or to structure are observed or if deck appears or feels inadequately attached, immediately notify Architect. Do not proceed with installation until directed by Architect.

D. If deck surface is not suitable for receiving new roofing or if structural integrity of deck is suspect, immediately notify Architect. Do not proceed with installation until directed by Architect.

E. Provide additional deck securement as indicated on Drawings.

3.3 EXISTING BASE FLASHINGS

A. Remove existing base flashings around parapets, curbs, walls, and penetrations.

1. Clean substrates of contaminants such as asphalt, sheet materials, dirt, and debris.

B. Do not damage metal counterflashings that are to remain. Replace metal counterflashings damaged during removal with counterflashings of same metal, weight or thickness, and finish.

3.4 DISPOSAL

A. Collect demolished materials and place in containers. Promptly dispose of demolished materials. Do not allow demolished materials to accumulate on-site.

1. Storage or sale of demolished items or materials on-site is not permitted.

B. Transport and legally dispose of demolished materials off Owner's property.

END OF SECTION 070150
SECTION 075216 - STYRENE-BUTADIENE-STYRENE (SBS) MODIFIED BITUMINOUS MEMBRANE ROOFING

PART 1 - GENERAL

1.1 SUMMARY
   A. Section Includes:
      1. Styrene-butadiene-styrene (SBS) modified bituminous membrane roofing.
      2. Roof insulation.

1.2 DEFINITIONS
   A. Roofing Terminology: See ASTM D 1079 and glossary of NRCA’s "The NRCA Roofing and Waterproofing Manual" for definition of terms related to roofing work in this Section.
   B. Hot Roofing Asphalt: Roofing asphalt heated to its equiviscous temperature, the temperature at which its viscosity is 125 centipoise for mop-applied roofing asphalt and 75 centipoise for mechanical spreader-applied roofing asphalt, within a range of plus or minus 25 deg F, measured at the mop cart or mechanical spreader immediately before application.

1.3 PERFORMANCE REQUIREMENTS
   A. General Performance: Installed membrane roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Membrane roofing and base flashings shall remain watertight.
   B. Odor Control:
      1. Use fume recovery systems on kettles for heating asphalt.
      2. Close or cover intake louvers adjacent to roof areas receiving hot asphalt membrane system, or have intake diverted away from sources of asphalt fume odor.
   C. Material Compatibility: Provide roofing materials that are compatible with one another under conditions of service and application required, as demonstrated by membrane roofing manufacturer based on testing and field experience.
   D. Roofing System Design: Provide membrane roofing system that is identical to systems that have been successfully tested by a qualified testing and inspecting agency to resist uplift pressure calculated according to ASCE/SEI 7.
      2. Perimeter Uplift Pressure: 35 lbf/sq. ft.

1.4 SUBMITTALS
   A. Product Data: For each type of product indicated.
   B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work.
      1. Base flashings and membrane terminations.
      2. Tapered insulation, including slopes.
      3. Crickets, saddles, and tapered edge strips, including slopes.
      4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
   C. Odor Control: For methods of controlling fume emissions and odor during application of asphalt roofing materials.
D. Maintenance Data: For roofing system to include in maintenance manuals.

E. Warranties: Sample of special warranties.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is UL listed for membrane roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by membrane roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

C. Source Limitations: Obtain components including roof insulation and fasteners for membrane roofing system from same manufacturer as membrane roofing.

D. Fire-Resistance Ratings: Where indicated, provide fire-resistance-rated roof assemblies identical to those of assemblies tested for fire resistance per ASTM E 119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

E. Preinstallation Roofing Conference: Conduct conference at Project site.

1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.

2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
   a. Include methods of odor control.

3. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.

4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.

5. Review structural loading limitations of roof deck during and after roofing.

6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that will affect roofing system.

7. Review governing regulations and requirements for insurance and certificates if applicable.

8. Review temporary protection requirements for roofing system during and after installation.

9. Review roof observation and repair procedures after roofing installation.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials and place equipment in a manner to avoid permanent deflection of deck.

1.7 PROJECT CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.
1.8 WARRANTY

A. Special Warranty: Manufacturer's standard or customized form, without monetary limitation (NDL), in which manufacturer agrees to repair or replace components of membrane roofing system that fail in materials or workmanship within specified warranty period, including Labor and Material.
   1. Special warranty includes membrane roofing, base flashings, roof insulation, fasteners, and other components of membrane roofing system.
   2. Include edge metal in duration of Manufacturer’s Warranty.
   3. Base Bid: Warranty Period: 20 years from date of Substantial Completion.
   4. Alternate Bid: Warranty Period: 25 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of membrane roofing system such as membrane roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, and walkway products, for the following warranty period:
   1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SBS-MODIFIED ASPHALT-SHEET MATERIALS

A. SBS-Modified Bituminous “Energy Star Rated” Membrane Roofing:
   1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
      a. GAF Materials Corporation (Basis-of-Design).
      b. Johns Manville.
      c. Tremco Incorporated.

2.2 CAP SHEET MATERIALS

A. Granule-Surface Roofing Membrane Cap Sheet: ASTM D 6163, Grade G, Type II, ASTM E903, ASTM C1549, SBS-modified asphalt sheet (reinforced with glass fibers); granular surfaced; suitable for application method specified, and as follows:
   1. Granule Color: White, Energy Star Rated and Approved with minimum SRI of 0.87.
   2. Basis-Of-Design Product: GAF Ruberoid EnergyCap SBS 30FREC, or equivalent

2.3 SBS BASE-PLY SHEET MATERIALS

A. Ruberoid SBS Modified Base: Meeting ASTM D6164, Type 1, Grade S Polyester Reinforced (80 lbs/3.0 mm thick, and 107.6 gross square feet).
   1. Basis-Of-Design Product: GAF Ruberoid Mop Smooth (1 SQ. Roll), or equivalent

2.4 BASE-SHEET MATERIALS (VAPOR BARRIER)

A. Base Sheet: Type VI Roofing Felt meeting ASTM D2178.
   1. Base Bid Basis-Of-Design Product: GAF GAFGLAS Flexply 6, or equivalent.
   2. Alternate Bid Basis-Of-Design Product: 2 layers GAF GAFGLAS Flexply 6, or equivalent, mopped-in individually.

2.5 BASE FLASHING SHEET MATERIALS

A. Backer sheet and surfaced flashing sheet as recommended by roofing system manufacturer for intended use and compatible with roofing membrane.

B. Glass-Fiber Fabric: Woven glass-fiber cloth, treated with asphalt, complying with ASTM D 1668, Type I.
2.6 **AUXILIARY ROOFING MEMBRANE MATERIALS**

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing membrane.

1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Asphalt Primer: ASTM D 41.


C. Roofing Asphalt: ASTM D 312, Type III or IV as recommended by roofing system manufacturer for application.

D. Asphalt Roofing Cement: ASTM D 4586, asbestos free, of consistency required by roofing system manufacturer for application.

1. Basis-Of-Design: GAF Matrix Premium 201 Flashing Cement, Trowel Grade, or equivalent.

E. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.

F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions, designed for fastening roofing membrane components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing system manufacturer.

G. Liquid Flashing: Basis-of-Design: GAF Major Seal Liquid Flashing, or equivalent.

H. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.7 **ROOF INSULATION**

A. General: Preformed roof insulation boards manufactured or approved by roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 2, 20 psi, felt or glass-fiber mat facer on both major surfaces.

1. Basis-Of-Design Product: GAF EnergyGuard PolyIso Insulation, or equivalent. Maximum Board Size (4’x4’).

C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated. Maximum board size (4’x4’).

D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

2.8 **COVER BOARD**

A. Gypsum Fiber Board: 5/8-inch thickness. Maximum board size (4’x4’).


B. Mineral Wool Roof Insulation Board: With cover board, 2-inch thickness (R=7.6), ASTM C726. Maximum board size (4’x4’).

1. Basis-Of-Design Product: Roxul Toprock DD+, or equivalent.

2.9 **INSULATION ACCESSORIES**

A. General: Furnish roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with membrane roofing.

B. Insulation Cant Strips: Provide one of the following:

1. ASTM C 728, perlite insulation board.

2. Mineral wool cant, coated with a bitumen coating and a lightly sanded surface.
a. Basis-Of-Design: Roxul, or equivalent.

2.10 WALKWAYS
A. Walkway Cap Sheet Strips: ASTM D 6164, Polyester reinforced SBS-modified granular surfaced Factory coated with acrylic coating suitable for application method specified and as follows:

PART 3 - EXECUTION
3.1 EXAMINATION
A. Examine substrates, areas, and conditions, with Installer present, for compliance with the following requirements and other conditions affecting performance of roofing system:
   1. Verify that roof openings and penetrations are in place and curbs are set and braced and that roof drain bodies are securely clamped in place.
   2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
   3. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION
A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.
B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.
C. Prime surface of concrete deck with asphalt primer at a rate of 3/4 gal./100 sq. ft. and allow primer to dry if deck is concrete.

3.3 INSULATION INSTALLATION
A. Comply with roofing system manufacturer's written instructions for installing roof insulation. Hot mop insulation board as recommended by insulation and roofing manufacturers.
B. Insulation Cant Strips: Install and secure preformed 45-degree insulation cant strips at junctures of roofing membrane system with vertical surfaces or angle changes more than 45 degrees.
C. Install tapered insulation under area of roofing to conform to slopes indicated.
D. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
   1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.
E. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or more, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.
F. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.
G. Install tapered edge strips at perimeter edges of roof that do not terminate at vertical surfaces.
H. Adhered Insulation: Install each layer of insulation and adhere to substrate as follows:
   1. Prime surface of concrete deck with asphalt primer at a minimum rate of 3/4 gallon per 100 square feet and allow primer to dry.
2. Set each layer of insulation in a solid mopping of hot roofing asphalt applied at a minimum of 25 pounds of asphalt per square, per layer. Apply roofing asphalt within plus or minus 25 deg F of equiviscous temperature.

I. Base bid insulation/installation design:
1. Install 2-ply vapor barrier by hot mop application to the primed concrete deck.
2. Hot mop base layer of 3.8-inch PolyIso in place.
3. Hot mop final layer of 2.0-inch Miner Wool insulation in place. Stagger joints with base layer.
4. Install 2-ply SBS Roofing Membrane System.

J. Alternate bid insulation/installation design:
1. Install 2-ply vapor barrier by hot mop application to the primed concrete deck.
2. Hot mop base layer of 2.6-inch PolyIso in place.
3. Hot mop second layer of 2.6-inch PolyIso in place. Stagger joints with base layer.
4. Hot mop top layer of Gypsum Fiber Cover Board. Stagger joints with second layer.
5. Install 2-ply SBS Roofing Membrane System.

3.4 ROOFING MEMBRANE INSTALLATION, GENERAL
A. Install roofing membrane system according to roofing system manufacturer's written instructions and applicable recommendations in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."
1. Install roofing system MBS- 4- I- M- M, according to roof assembly identification matrix and roof assembly layout illustrations in NRCA's "The NRCA Roofing and Waterproofing Manual" and to requirements in this Section.
2. Basis-of-Design System: GAF I-0-1-30FREC.
B. Start installation of roofing membrane in presence of roofing system manufacturer's technical personnel.
C. Coordinate installation of roofing system so insulation and other components of the roofing membrane system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
1. At end of each day's work, provide tie-offs to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt, with joints and edges sealed.
2. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system.
3. Remove and discard temporary seals before beginning work on adjoining roofing.
D. Asphalt Heating:
1. Traditional Roofing Asphalt: Do not raise roofing asphalt temperature above equiviscous temperature range more than one hour before time of application. Do not exceed roofing asphalt manufacturer's recommended temperature limits during roofing asphalt heating. Do not heat roofing asphalt within 25 deg F of flash point. Discard roofing asphalt maintained at a temperature exceeding finished blowing temperature for more than four hours.
2. SEBS-Modified Roofing Asphalt: Heat and apply SEBS-modified roofing asphalt according to roofing system manufacturer's written instructions.
E. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging roofing system components or adjacent building construction.
3.5 BASE-SHEET INSTALLATION
   A. Install 2 plies lapped base-sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:
      1. Prime concrete deck before mopping in place.
      2. Adhere to substrate in a solid mopping of hot roofing asphalt.

3.6 BASE-PLY SHEET INSTALLATION
   A. Install SBS Mop Smooth base-ply sheet according to roofing system manufacturer's written instructions starting at low point of roofing system. Align SBS base-ply sheet without stretching. Extend sheets over and terminate beyond cants.
      1. Embed each SBS base-ply sheet in a continuous void-free mopping of hot roofing asphalt to form a uniform membrane.

3.7 SBS-MODIFIED BITUMINOUS MEMBRANE INSTALLATION
   A. Install modified bituminous roofing membrane sheets and cap sheet according to roofing manufacturer's written instructions, starting at low point of roofing system. Extend roofing membrane sheets over and terminate beyond cants, installing as follows:
      1. Adhere to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F.
      2. Unroll roofing membrane sheets and allow them to relax for minimum time period required by manufacturer.
   B. Laps: Accurately align roofing membrane sheets, without stretching, and maintain uniform side and end laps. Stagger end laps. Completely bond and seal laps, leaving no voids.
      1. Repair tears and voids in laps and lapped seams not completely sealed.
      2. Apply roofing granules to cover exuded bead at laps while bead is hot.
   C. Install roofing membrane sheets so side and end laps shed water.

3.8 FLASHING AND STRIPPING INSTALLATION
   A. Install base flashing over cant strips and other sloped and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions, and as follows:
      1. Prime substrates with asphalt primer if required by roofing system manufacturer.
      2. Backer Sheet Application: Either of the following as recommended by roofing system manufacturer's written instructions:
         a. Adhere backer sheet over roofing membrane at cants in a solid mopping of hot roofing asphalt.
         b. Adhere backer sheet to substrate in a solid mopping of hot roofing asphalt.
      3. Flashing Sheet Application: Either of the following as recommended by roofing system manufacturer's written instructions:
         a. Adhere flashing sheet to substrate in a solid mopping of hot roofing asphalt applied at not less than 425 deg F. Apply hot roofing asphalt to back of flashing sheet if recommended by roofing system manufacturer.
         b. Adhere flashing sheet to substrate in asphalt roofing cement at rate required by roofing system manufacturer.
   B. Extend base flashing up walls or parapets a minimum of 8 inches above roofing membrane and 8 inches onto field of roofing membrane.
   C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.

D. Install roofing membrane cap-sheet stripping where metal flanges and edgings are set on membrane roofing according to roofing system manufacturer's written instructions.

E. Roof Drains: Set 30-by-30-inch square metal flashing in bed of asphalt roofing cement on completed roofing membrane. Cover metal flashing with roofing membrane cap-sheet stripping and extend a minimum of 6 inches beyond edge of metal flashing onto field of roofing membrane. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.

1. Install stripping according to roofing system manufacturer's written instructions.

3.9 WALKWAY INSTALLATION

A. Cap Sheet Strips: Install additional layer of roofing membrane cap sheet using application method described above set in trowel grade flashing cement per Manufacturer’s Recommendation.

3.10 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections and to prepare test reports.

B. Test Cuts: Test specimens will be removed to evaluate problems observed during quality-assurance inspections of roofing membrane as follows:

1. Approximate quantities of components within roofing membrane will be determined according to ASTM D 3617.

2. Test specimens will be examined for interply voids according to ASTM D 3617 and to comply with criteria established in Appendix 3 in ARMA/NRCA's "Quality Control Guidelines for the Application of Polymer Modified Bitumen Roofing."

3. Repair areas where test cuts were made according to roofing system manufacturer's written instructions.

C. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.

1. Notify Architect and Owner 48 hours in advance of date and time of inspection.

D. Roofing system will be considered defective if it does not pass tests and inspections.

1. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.11 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction will not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.

C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.12 ROOFING INSTALLER'S WARRANTY

A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: Wayne State University.

2. Address: <Insert address>.

3. Area of Work: <Insert information>.
4. Acceptance Date: <Insert date>.
5. Warranty Period: <Insert time>.
6. Expiration Date: <Insert date>.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
   a. Lightning;
   b. Peak gust wind speed exceeding <Insert wind speed> mph;
   c. Fire;
   d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   e. Faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   f. Vapor condensation on bottom of roofing; and
   g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.

3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of
responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this <Insert day> day of <Insert month>, <Insert year>.

1. Authorized Signature: <Insert signature>.

2. Name: <Insert name>.

3. Title: <Insert title>.

END OF SECTION 075216
SECTION 075423 - THERMOPLASTIC POLYOLEFIN (TPO) ROOFING

PART 1 - GENERAL

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

1.2 SUMMARY
A. Section Includes:
   1. Mechanically fastened thermoplastic polyolefin (TPO) roofing system.
   2. Roof insulation.
B. Section includes the installation of insulation strips in ribs of roof deck. Insulation strips are furnished under Section 053100 "Steel Decking."
C. Related Requirements:
   1. Section 061053 "Miscellaneous Rough Carpentry" for wood nailers, curbs, and blocking; and for wood-based, structural-use roof deck panels.
   2. Section 061600 "Sheathing" for wood-based, structural-use roof deck panels.
   3. Section 072100 "Thermal Insulation" for insulation beneath the roof deck.
   4. Section 076200 "Sheet Metal Flashing and Trim" for metal roof flashings and counterflashings.
   5. Section 079200 "Joint Sealants" for joint sealants, joint fillers, and joint preparation.
   6. Section 221423 "Storm Drainage Piping Specialties" for roof drains.

1.3 DEFINITIONS
A. Roofing Terminology: Definitions in ASTM D 1079 and glossary in NRCA's "The NRCA Roofing and Waterproofing Manual" apply to work of this Section.

1.4 PREINSTALLATION MEETINGS
A. Preliminary Roofing Conference: Before starting roof deck construction, conduct conference at Project site.
   1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Review deck substrate requirements for conditions and finishes, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

B. Preinstallation Roofing Conference: Conduct conference at Project site.
1. Meet with Owner, Architect, Owner's insurer if applicable, testing and inspecting agency representative, roofing Installer, roofing system manufacturer's representative, deck Installer, and installers whose work interfaces with or affects roofing, including installers of roof accessories and roof-mounted equipment.
2. Review methods and procedures related to roofing installation, including manufacturer's written instructions.
3. Review and finalize construction schedule, and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
4. Examine deck substrate conditions and finishes for compliance with requirements, including flatness and fastening.
5. Review structural loading limitations of roof deck during and after roofing.
6. Review base flashings, special roofing details, roof drainage, roof penetrations, equipment curbs, and condition of other construction that affects roofing system.
7. Review governing regulations and requirements for insurance and certificates if applicable.
8. Review temporary protection requirements for roofing system during and after installation.
9. Review roof observation and repair procedures after roofing installation.

1.5 ACTION SUBMITTALS
A. Product Data: For each type of product.
B. Shop Drawings: For roofing system. Include plans, elevations, sections, details, and attachments to other work, including:
1. Base flashings and membrane terminations.
2. Tapered insulation, including slopes.
3. Roof plan showing orientation of steel roof deck and orientation of roofing, fastening spacings, and patterns for mechanically fastened roofing.
4. Insulation fastening patterns for corner, perimeter, and field-of-roof locations.
C. Color Sample: Provide 8 inch by 8 inch sample of roof materials for color confirmation.

1.6 INFORMATIONAL SUBMITTALS

A. Sample Warranties: For manufacturer's special warranties.

1.7 CLOSEOUT SUBMITTALS

A. Maintenance Data: For roofing system to include in maintenance manuals.

1.8 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer that is FM Global approved for roofing system identical to that used for this Project.

B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.

B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing system manufacturer. Protect stored liquid material from direct sunlight.

1. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.

C. Protect roof insulation materials from physical damage and from deterioration by sunlight, moisture, soiling, and other sources. Store in a dry location. Comply with insulation manufacturer's written instructions for handling, storing, and protecting during installation.

D. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing system to be installed according to manufacturer's written instructions and warranty requirements.

1.11 WARRANTY

A. Special Warranty: Manufacturer agrees to repair or replace components of roofing system that fail in materials or workmanship within specified warranty period.
1. Provide Manufacturer’s WeatherStopper Diamond Pledge Guarantee with the WellRoof Advantage or equivalent.
   a. Provide single-source coverage and no monetary limitation, where the manufacturer agrees to repair or replace components of the Roofing System, which cause a leak due to failure in materials or workmanship.

2. Special warranty includes roofing, base flashings, roof insulation, fasteners, cover boards, roofing accessories, and other components of roofing system.

3. Base Bid Warranty Period: 20 years from date of Substantial Completion.
   a. Provide optional coverage to the Owner that extends coverage by 25 percent of the original guarantee length, provided that the roof is inspected and maintained and maintained according to Manufacturer’s requirements.

4. Alternate Bid Warranty Period: 25 years from date of Substantial Completion.

B. Special Project Warranty: Submit roofing Installer's warranty, on warranty form at end of this Section, signed by Installer, covering the Work of this Section, including all components of roofing system such as roofing, base flashing, roof insulation, fasteners, cover boards, substrate boards, vapor retarders, roof pavers, and walkway products, for the following warranty period:

1. Warranty Period: Two years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturer: Subject to compliance with requirements, provide products by one of the following (Provide same Manufacturer as SBS Modified Bit. Roof):

1. GAF TPO Membrane (Basis-of-Design);
   a. GAF EverGard Extreme TPO 50 Mil Membrane (Base Bid).
   b. GAF EverGard Extreme TPO 55 Mil Membrane (Alternate Bid).
   1) Ricardo Aranguren – 810-844-0898.

2. Johns Manville.

3. Tremco Incorporated.

B. Source Limitations: Obtain components including roof insulation fasteners for roofing system from same manufacturer as membrane roofing or manufacturer approved by membrane roofing manufacturer.

2.2 PERFORMANCE REQUIREMENTS

A. General Performance: Installed roofing and base flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roofing and base flashings shall remain watertight.

1. Accelerated Weathering: Roofing system shall withstand 2000 hours of exposure when tested according to ASTM G 152, ASTM G 154, or ASTM G 155.
2. Impact Resistance: Roofing system shall resist impact damage when tested according to ASTM D 3746 or ASTM D 4272.

B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roofing manufacturer based on testing and field experience.

C. Roofing System Design: Tested by a qualified testing agency to resist the following uplift pressures:

   1. Corner Uplift Pressure: -65.9 lbf/sq. ft.

2.3 TPO ROOFING


   1. Thickness: 50 mils, nominal.
   2. Exposed Face Color:
      a. Manufacturer’s White.

2.4 AUXILIARY ROOFING MATERIALS

A. General: Auxiliary materials recommended by roofing system manufacturer for intended use and compatible with roofing.

   1. Liquid-type auxiliary materials shall comply with VOC limits of authorities having jurisdiction.

B. Sheet Flashing: Manufacturer's standard unreinforced TPO sheet flashing, 55 mils thick, minimum, of same color as TPO sheet.

C. Bonding Adhesive: Manufacturer's standard.

D. Slip Sheet: Manufacturer's standard, of thickness required for application.

E. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch thick; with anchors.

F. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roofing to substrate, and acceptable to roofing system manufacturer.

G. Miscellaneous Accessories: Provide pourable sealers, preformed cone and vent sheet flashings, preformed inside and outside corner sheet flashings, T-joint covers, lap sealants, termination reglets, and other accessories.
### 2.5 ROOF INSULATION

A. General: Preformed roof insulation boards manufactured or approved by TPO roofing manufacturer, selected from manufacturer's standard sizes suitable for application, of thicknesses indicated and that produce FM Global-approved roof insulation.

B. Polyisocyanurate Board Insulation: ASTM C 1289, Type II, Class 1, Grade 3, kraft, felt, or glass-fiber mat facer on both major surfaces.

C. Tapered Insulation: Provide factory-tapered insulation boards fabricated to slope of 1/4 inch per 12 inches unless otherwise indicated.

D. Provide preformed saddles, crickets, tapered edge strips, and other insulation shapes where indicated for sloping to drain. Fabricate to slopes indicated.

### 2.6 INSULATION ACCESSORIES

A. General: Roof insulation accessories recommended by insulation manufacturer for intended use and compatibility with roofing.

B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Global 4470, designed for fastening roof insulation and cover boards to substrate, and acceptable to roofing system manufacturer.

C. Cover Board: ASTM C 1177/C 1177M, glass-mat, water-resistant gypsum substrate, 1/4 inch thick, factory primed.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   
   a. CertainTeed Corporation.
   
   b. Georgia-Pacific Building Products.
   
   c. National Gypsum Company.
   
   d. Temple-Inland Building Products by Georgia-Pacific.
   
   e. United States Gypsum Company.

### PART 3 - EXECUTION

#### 3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:

1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.

2. Verify that wood blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.

3. Verify that surface plane flatness and fastening of steel roof deck complies with requirements in Section 053100 "Steel Decking."
4. Verify that minimum concrete drying period recommended by roofing system manufacturer has passed.

5. Verify that concrete substrate is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

6. Verify that concrete-curing compounds that will impair adhesion of roofing components to roof deck have been removed.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing system manufacturer's written instructions. Remove sharp projections.

B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction. Remove roof-drain plugs when no work is taking place or when rain is forecast.

C. Install insulation strips according to acoustical roof deck manufacturer's written instructions.

3.3 ROOFING INSTALLATION, GENERAL

A. Install roofing system according to roofing system manufacturer's written instructions.

B. Complete terminations and base flashings and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast. Remove and discard temporary seals before beginning work on adjoining roofing.

3.4 INSULATION INSTALLATION

A. Coordinate installing roofing system components so insulation is not exposed to precipitation or left exposed at the end of the workday.

B. Comply with roofing system and insulation manufacturer's written instructions for installing roof insulation.

C. Install tapered insulation under area of roofing to conform to slopes indicated.

D. Install insulation under area of roofing to achieve required thickness. Where overall insulation thickness is 2.7 inches or greater, install two or more layers with joints of each succeeding layer staggered from joints of previous layer a minimum of 6 inches in each direction.

E. Trim surface of insulation where necessary at roof drains so completed surface is flush and does not restrict flow of water.

F. Install 8 foot by 8 foot tapered sump area around each roof drain.

G. Install insulation with long joints of insulation in a continuous straight line with end joints staggered between rows, abutting edges and ends between boards. Fill gaps exceeding 1/4 inch with insulation.
1. Cut and fit insulation within 1/4 inch of nailers, projections, and penetrations.

H. Mechanically Fastened and Adhered Insulation: Install each layer of insulation to deck using mechanical fasteners specifically designed and sized for fastening specified board-type roof insulation to deck type.
   1. Fasten first layer of insulation according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
   2. Fasten second layer of insulation to resist uplift pressure at corners, perimeter, and field of roof.

I. Install cover boards over insulation at each rooftop man-door, and at all rooftop equipment service doors with long joints in continuous straight lines with end joints staggered between rows. Offset joints of insulation below a minimum of 6 inches in each direction. Loosely butt cover boards together and fasten to roof deck.
   1. Fasten cover boards according to requirements in FM Global's "RoofNav" for specified Windstorm Resistance Classification.
   2. Fasten cover boards to resist uplift pressure at corners, perimeter, and field of roof.

3.5 MECHANICALLY FASTENED ROOFING INSTALLATION

A. Mechanically fasten roofing over area to receive roofing according to roofing system manufacturer's written instructions. Unroll roofing and allow to relax before retaining.
   1. For in-splice attachment, install roofing with long dimension perpendicular to steel roof deck flutes.

B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.

C. Accurately align roofing, and maintain uniform side and end laps of minimum dimensions required by manufacturer. Stagger end laps.

D. Mechanically fasten or adhere roofing securely at terminations, penetrations, and perimeter of roofing.

E. Apply roofing with side laps shingled with slope of roof deck where possible.

F. In-Seam Attachment: Secure one edge of TPO sheet using fastening plates or metal battens centered within seam, and mechanically fasten TPO sheet to roof deck.

G. Seams: Clean seam areas, overlap roofing, and hot-air weld side and end laps of roofing and sheet flashings according to manufacturer's written instructions to ensure a watertight seam installation.
   1. Test lap edges with probe to verify seam weld continuity. Apply lap sealant to seal cut edges of sheet.
   2. Verify field strength of seams a minimum of twice daily, and repair seam sample areas.
   3. Repair tears, voids, and lapped seams in roofing that do not comply with requirements.

H. Spread sealant bed over deck-drain flange at roof drains, and securely seal roofing in place with clamping ring.
3.6 BASE FLASHING INSTALLATION

A. Install sheet flashings and preformed flashing accessories, and adhere to substrates according to roofing system manufacturer's written instructions.

B. Apply bonding adhesive to substrate and underside of sheet flashing at required rate, and allow to partially dry. Do not apply to seam area of flashing.

C. Flash penetrations and field-formed inside and outside corners with factory accessories.

D. Clean seam areas, overlap, and firmly roll sheet flashings into the adhesive. Hot-air weld side and end laps to ensure a watertight seam installation.

E. Terminate and seal top of sheet flashings and mechanically anchor to substrate through termination bars per manufacturer’s requirements.

3.7 WALKWAY INSTALLATION

A. Flexible Walkways: Install walkway products in locations indicated. Heat weld to substrate or adhere walkway products to substrate with compatible adhesive according to roofing system manufacturer's written instructions.

3.8 FIELD QUALITY CONTROL

A. Periodic Inspections: Arrange for roofing system manufacturer’s technical personnel to inspect membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.

B. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion.
   1. All application errors must be addressed and final punch list completed prior to substantial completion.

C. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine if replaced or additional work complies with specified requirements.

3.9 PROTECTING AND CLEANING

A. Protect roofing system from damage and wear during remainder of construction period. When remaining construction does not affect or endanger roofing, inspect roofing for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.

B. Correct deficiencies in or remove roofing system that does not comply with requirements, repair substrates, and repair or reinstall roofing system to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.10 **ROOFING INSTALLER'S SAMPLE WARRANTY**

A. WHEREAS _______________________________ of ___________________________, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:

1. Owner: <Insert name of Owner>.
2. Address: <Insert address>.
3. Building Name/Type: <Insert information>.
4. Address: <Insert address>.
5. Area of Work: <Insert information>.
6. Acceptance Date: ________________.
7. Warranty Period: <Insert time>.
8. Expiration Date: ________________.

B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period he will, at his own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.

D. This Warranty is made subject to the following terms and conditions:

1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
   a. lightning;
   b. peak gust wind speed exceeding 120 mph;
   c. fire;
   d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
   e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
   f. vapor condensation on bottom of roofing; and
   g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.

2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.

4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.

5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.

6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.

7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this ___________ day of __________________, ________________.

1. Authorized Signature: ________________________________.

2. Name: ________________________________.

3. Title: ________________________________.

END OF SECTION 075423
SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

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

1.2 SUMMARY
A. This Section includes sheet metal flashing and trim in the following categories:
   1. Roof-drainage systems.
   2. Copings.
B. Related Requirements
   1. Division 6 Section “Miscellaneous Rough Carpentry” for wood nailers, curbs, and blocking.

1.3 PERFORMANCE REQUIREMENTS
A. Install sheet metal flashing and trim to withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failing.

1.4 SUBMITTALS
A. Product Data: For each type of product.
   1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.
B. Shop Drawings of each item specified showing layout, profiles, methods of joining, and anchorage details.

1.5 QUALITY ASSURANCE
A. Installer Qualifications: Engage an experience Installer who has completed sheet metal flashing and trim work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

1.6 PROJECT CONDITIONS
A. Coordinate Work of this Section with interfacing and adjoining Work for proper sequencing of each installation. Ensure best possible weather resistance, durability of Work, and protection of materials and finishes.

PART 2 - PRODUCTS

2.1 METALS
A. Galvanized Steel Sheet: ASTM A 653, G 90, commercial quality, or lock-forming quality, hot-dip galvanized steel sheet with 0.20 percent copper, mill phosphatized where indicated for painting; not less than 0.0396 inch thick, unless otherwise indicated.
B. Coil-Coated Galvanized Steel Sheet: Zinc-coated, commercial-quality steel sheet conforming to ASTM A 755, G 90 coating designation, coil coated with high-performance fluoropolymer coating as specified in "Coil-Coated Galvanized Steel Sheet Finish" Article; not less than 0.0336 inch thick, unless otherwise indicated.
C. Lead Sheet: ASTM B 749, Type L51121, copper-bearing lead sheet, with a minimum thickness of 0.0625 inch except not less than 0.0937 inch thick for applications where burning (welding) is involved.

2.2 MISCELLANEOUS MATERIALS AND ACCESSORIES
A. Burning Rod for Lead: Same composition as lead sheet.
B. Solder: ASTM B 32, Grade Sn50, used with rosin flux.
C. Fasteners: Same metal as sheet metal flashing or other noncorrosive metal as recommended by sheet metal manufacturer. Match finish of exposed heads with material being fastened.

D. Asphalt Mastic: SSPC-Paint 12, solvent-type asphalt mastic, nominally free of sulfur and containing no asbestos fibers, compounded for 15-mil dry film thickness per coat.

E. Mastic Sealant: Polyisobutylene; nonhardening, nonskinning, nondrying, nonmigrating sealant.

F. Elastomeric Sealant: Generic type recommended by sheet metal manufacturer and fabricator of components being sealed and complying with requirements for elastomeric joint sealants as specified in ASTM C 920.

G. Adhesives: Type recommended by flashing sheet metal manufacturer for waterproof and weather-resistant seaming and adhesive application of flashing sheet metal.

H. Metal Accessories: Provide sheet metal clips, straps, anchoring devices, and similar accessory units as required for installation of Work, matching or compatible with material being installed; noncorrosive; size and thickness required for performance.

I. Roofing Cement: ASTM D 4586, Type I, asbestos free, asphalt based.

2.3 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

D. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

E. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

F. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

G. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.

H. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.

1. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

2.4 SHEET METAL FABRICATIONS

A. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements but not less than that listed below for each application and metal.

B. Exposed Trim, Gravel Stops, and Fasciae: Fabricate from the following material:

1. Aluminum-Zinc Alloy-Coated Steel: 0.0276 inch thick.

2. Coil-Coated Galvanized Steel: 0.0276 inch thick.

C. Copings: Fabricate from the following material:
1. Aluminum-Zinc Alloy-Coated Steel: 0.0396 inch thick.
2. Coil-Coated Galvanized Steel: 0.0396 inch thick.

D. Base Flashing: Fabricate from the following material:
   1. Galvanized Steel: 0.0276 inch thick.

E. Counterflashing: Fabricate from the following material:
   1. Galvanized Steel: 0.0217 inch thick.

F. Flashing Receivers: Fabricate from the following material:
   1. Galvanized Steel: 0.0217 inch thick.

G. Drip Edges: Fabricate from the following material:
   1. Galvanized Steel: 0.0217 inch thick.

H. Equipment Support Flashing: Fabricate from the following material:
   1. Galvanized Steel: 0.0276 inch thick.

I. Roof-Penetration Flashing: Fabricate from the following material:
   1. Lead: 4.0 lb/sq. ft., hard tempered.
   2. Galvanized Steel: 0.0276 inch thick.

2.5 COIL-COATED GALVANIZED STEEL SHEET FINISH

A. High-Performance Organic Coating Finish: Apply the following system by coil-coating process on galvanized steel sheet as recommended by coating manufacturers and applicator.
   1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 2605.
      a. Color and Gloss: Match metal wall panels as verified by, or color selected by, Architect.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. General: Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install Work with laps, joints, and seams that will be permanently watertight and weatherproof.

B. Install exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather-resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Expansion Provisions: Provide for thermal expansion of exposed sheet metal Work. Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and...
waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

D. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter. Pretin edges of sheets to be soldered to a width of 1-1/2 inches, except where pretinned surface would show in finished Work.

1. Do not use torches for soldering. Heat surfaces to receive solder and flow solder into joint. Fill joint completely. Completely remove flux and spatter from exposed surfaces.

E. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards. Fill joint with sealant and form metal to completely conceal sealant.

1. Use joint adhesive for nonmoving joints specified not to be soldered.

F. Seams: Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Counterflashings: Coordinate installation of counterflashings with installation of assemblies to be protected by counterflushing. Install counterflashings in reglets or receivers. Secure in a waterproof manner by means of snap-in installation and sealant, lead wedges and sealant, interlocking folded seam, or blind rivets and sealant. Lap counterflushing joints a minimum of 2 inches and bed with sealant.

H. Roof-Drainage System: Install drainage items fabricated from sheet metal, with straps, adhesives, and anchors recommended by SMACNA's Manual or the item manufacturer, to drain roof in the most efficient manner. Coordinate roof-drain flashing installation with roof-drainage system installation. Coordinate flashing and sheet metal items with roofing installation.

I. Equipment Support Flashing: Coordinate equipment support flashing installation with roofing and equipment installation. Weld or seal flashing to equipment support member.

J. Roof-Penetration Flashing: Coordinate roof-penetration flashing installation with roofing and installation of items penetrating roof. Install flashing as follows:

1. Turn lead flashing down inside vent piping, being careful not to block vent piping with flashing.

2. Seal and clamp flashing to pipes penetrating roof, other than lead flashing on vent piping.

3.3 COORDINATION

A. Coordinate installation schedule with siding and roofing installer to ensure a water tight installation between roofing, siding and flashing products.

1. Note any discrepancies in field conditions to Owner’s Representative.

2. Ensure all corners, differing elevations of panels, and end points are appropriately flashed and water tight.

3.4 CLEANING AND PROTECTION

A. Clean exposed metal surfaces, removing substances that might cause corrosion of metal or deterioration of finishes.

B. Provide final protection and maintain conditions that ensure sheet metal flashing and trim Work during construction is without damage or deterioration other than natural weathering at the time of Substantial Completion.

END OF SECTION
SECTION 077200 - ROOF ACCESSORIES

PART 1 - GENERAL

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

1.2 SUMMARY
   A. Section Includes:
      1. Equipment supports.
      2. Pipe supports.
      3. Pipe Curb Assemblies.
   B. Related Sections:
      1. Division 07 Section "Sheet Metal Flashing and Trim" for shop- and field-formed metal flashing, roof-drainage systems, roof expansion-joint covers, and miscellaneous sheet metal trim and accessories.
      2. Division 07 Section "Manufactured Roof Expansion Joints" for roof expansion joints.
      3. Division 23 Section "Packaged, Outdoor, Central-Station Air-Handling Units" for manufactured roof curbs.

1.3 PERFORMANCE REQUIREMENTS
   A. General Performance: Roof accessories shall withstand exposure to weather and resist thermally induced movement without failure, rattling, leaking, or fastener disengagement due to defective manufacture, fabrication, installation, or other defects in construction.

1.4 SUBMITTALS
   A. Product Data: For each type of roof accessory indicated. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes.
   B. Shop Drawings: For roof accessories. Include plans, elevations, keyed details, and attachments to other work. Indicate dimensions, loadings, and special conditions. Distinguish between plant- and field-assembled work.
   C. Coordination Drawings: Roof plans, drawn to scale, and coordinating penetrations and roof-mounted items. Show the following:
      1. Size and location of roof accessories specified in this Section.
      2. Method of attaching roof accessories to roof or building structure.
   D. Maintenance Data: For roof accessories to include in operation and maintenance manuals.

1.5 COORDINATION
   A. Coordinate layout and installation of roof accessories with roofing membrane and base flashing and interfacing and adjoining construction to provide a leakproof, weathertight, secure, and noncorrosive installation.
   B. Coordinate dimensions with rough-in information or Shop Drawings of equipment to be supported.

PART 2 - PRODUCTS

2.1 METAL MATERIALS
   A. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, paint bond G90 coating designation.
      1. Factory Prime Coating: Where field painting is indicated, apply pretreatment and white or light-colored, factory-applied, baked-on epoxy primer coat, with a minimum dry film thickness of 0.2 mil.
B. Steel Shapes: ASTM A 36/A 36M, hot-dip galvanized according to ASTM A 123/A 123M unless otherwise indicated.

2.2 MISCELLANEOUS MATERIALS

A. General: Provide materials and types of fasteners, protective coatings, sealants, and other miscellaneous items required by manufacturer for a complete installation.

B. Glass-Fiber Board Insulation: ASTM C 726, thickness as indicated.

C. Fasteners: Roof accessory manufacturer's recommended fasteners suitable for application and metals being fastened. Match finish of exposed fasteners with finish of material being fastened. Provide nonremovable fastener heads to exterior exposed fasteners. Furnish the following unless otherwise indicated:
   1. Fasteners for Zinc-Coated or Aluminum-Zinc Alloy-Coated Steel: Series 300 stainless steel or hot-dip zinc-coated steel according to ASTM A 153/A 153M or ASTM F 2329.

D. Gaskets: Manufacturer's standard tubular or fingered design of neoprene, EPDM, PVC, or silicone or a flat design of foam rubber, sponge neoprene, or cork.

2.3 EQUIPMENT SUPPORTS

A. Equipment Supports: Internally reinforced metal equipment supports capable of supporting superimposed live and dead loads, including equipment loads and other construction indicated on Drawings; with welded or mechanically fastened and sealed corner joints, stepped integral metal cant raised the thickness of roof insulation, and mounting flange at perimeter bottom.
   1. Basis-of-Design Product: Subject to compliance with requirements, provide The Pate Company or comparable product by one of the following:
      a. AES Industries, Inc.
      b. Curbs Plus, Inc.
      c. LM Curbs.
      d. Milcor Inc.; Commercial Products Group of Hart & Cooley, Inc.
      e. Roof Products, Inc.

B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment to be supported.

C. Loads: Coordinate loads with Shop Drawings of equipment to be supported.

D. Material: Zinc-coated (galvanized) steel sheet, 0.079 inch thick.
   1. Finish: Mill phosphatized.

E. Construction:
   1. Factory-installed continuous wood nailers 3-1/2 inches wide at tops of equipment supports.
   2. Metal Counterflashing: Manufacturer's standard, removable, fabricated of same metal and finish as equipment support.
   3. Fabricate equipment supports to minimum height of 12 inches unless otherwise indicated.
   4. Sloping Roofs: Where roof slope exceeds 1:48, fabricate each support with height to accommodate roof slope so that tops of supports are level with each other. Equip supports with water diverters or crickets on sides that obstruct water flow.
2.4 PIPE SUPPORTS
   A. Light-Duty Pipe Supports: Extruded-aluminum base assembly and Type 304 stainless-steel roller assembly for pipe sizes indicated, including manufacturer's recommended load-distributing baseplate.
      1. Basis-of-Design Product: Subject to compliance with requirements, provide The Pate Company or comparable product by the following:
         a. Thaler Metal USA Inc.
      2. Finish: Manufacturer's standard.

2.5 PIPE CURB ASSEMBLIES
   A. Pipe Curb Assemblies: Welded or mechanically fastened and sealed corner joints, insulated with 1-1/2-inch rigid fiberglass board insulation, integral metal cant raised the thickness of roof insulation, and mounting flange at perimeter bottom.
      1. Basis-of-Design Product: Subject to compliance with requirements, provide The Pate Company or comparable product by one of the following:
         a. AES Industries, Inc.
         b. Curbs Plus, Inc.
         c. LM Curbs.
         d. Milcor Inc.; Commercial Products Group of Hart & Cooley, Inc.
         e. Roof Products, Inc.
      B. Size: Coordinate dimensions with roughing-in information or Shop Drawings of equipment.
      C. Penetrations: Coordinate number of penetrations with Shop Drawings of equipment.
      D. Material: Zinc-coated (galvanized) steel sheet, 0.079 inch thick.
         1. Finish: Mill phosphatized.
      E. Construction:
         1. Factory-installed continuous wood nailers 3-1/2 inches wide at tops of equipment supports.
         2. Counterflashing Cap: Manufacturer's standard, removable, fabricated of acrylic-clad ABS thermoplastic, including graduated step PVC boots and adjustable stainless steel clamps.
         3. Fabricate equipment supports to minimum height of 12 inches unless otherwise indicated.
         4. Sloping Roofs: Where roof slope exceeds 1:48, fabricate each support with height to accommodate roof slope so that tops of supports are level with each other. Equip supports with water diverters or crickets on sides that obstruct water flow.

2.6 GENERAL FINISH REQUIREMENTS
   A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.
   B. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

PART 3 - EXECUTION
3.1 EXAMINATION
   A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.
   B. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
C. Verify dimensions of roof openings for roof accessories.
D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION
A. General: Install roof accessories according to manufacturer's written instructions.
   1. Install roof accessories level, plumb, true to line and elevation, and without warping, jogs in alignment, excessive oil canning, buckling, or tool marks.
   2. Anchor roof accessories securely in place so they are capable of resisting indicated loads.
   3. Use fasteners, separators, sealants, and other miscellaneous items as required to complete installation of roof accessories and fit them to substrates.
   4. Install roof accessories to resist exposure to weather without failing, rattling, leaking, or loosening of fasteners and seals.
B. Metal Protection: Protect metals against galvanic action by separating dissimilar metals from contact with each other or with corrosive substrates by painting contact surfaces with bituminous coating or by other permanent separation as recommended by manufacturer.
   1. Underlayment: Where installing roof accessories directly on cementitious or wood substrates, install a course of felt underlayment and cover with a slip sheet, or install a course of polyethylene sheet.
   2. Bed flanges in thick coat of asphalt roofing cement where required by manufacturers of roof accessories for waterproof performance.
C. Seal joints with elastomeric or butyl sealant as required by roof accessory manufacturer.

3.3 REPAIR AND CLEANING
A. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing according to ASTM A 780.
B. Touch up factory-primed surfaces with compatible primer ready for field painting according to Division 09 painting Sections.
C. Clean exposed surfaces according to manufacturer's written instructions.
D. Clean off excess sealants.
E. Replace roof accessories that have been damaged or that cannot be successfully repaired by finish touchup or similar minor repair procedures.

END OF SECTION 077200
SECTION 079200 - JOINT SEALANTS

PART 1 - GENERAL

1.1 SUMMARY
A. Section Includes:
   1. Urethane joint sealants.
   2. Latex joint sealants.
B. Related Sections:
   1. Division 08 Section "Glazing" for glazing sealants.

1.2 SUBMITTALS
A. Product Data: For each joint-sealant product indicated.
B. Joint-Sealant Schedule: Include the following information:
   1. Joint-sealant application, joint location, and designation.
   2. Joint-sealant manufacturer and product name.
C. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.
D. Warranties: Sample of special warranties.

1.3 QUALITY ASSURANCE
A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.
B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

1.4 PROJECT CONDITIONS
A. Do not proceed with installation of joint sealants under the following conditions:
   1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer.
   2. When joint substrates are wet.
   3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
   4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.5 WARRANTY
A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.
C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

2.2 POLYSULFIDE JOINT SEALANTS

A. Multicomponent, Nosag, Polysulfide Joint Sealant: ASTM C 920, Type M, Grade NS, Class25, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. BASF Building Systems; Sonolastic Polysulfide Sealant..
   b. Pacific Polymers International, Inc.; Elasto Seal 227 Type II.
   c. Pecora Corporation; Synthaalck GC 2+.
   d. W.R. Meadows, Inc.; Deck O Seal Gun Grade.

2.3 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. BASF Building Systems; Sonolac.
   b. Pecora Corporation; AC-20+.
   c. Tremco Incorporated; Tremflex 834.

2.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.
B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:
   
   a. Concrete.
   
   b. Masonry.
   
   c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.

4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:
   
   a. Metal.
   
   b. Glass.
   
   c. Porcelain enamel.
   
   d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.
B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.
   1. Do not leave gaps between ends of sealant backings.
   2. Do not stretch, twist, puncture, or tear sealant backings.
   3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:
   1. Place sealants so they directly contact and fully wet joint substrates.
   2. Completely fill recesses in each joint configuration.
   3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.
   1. Remove excess sealant from surfaces adjacent to joints.
   2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
   3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.

3.4 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.5 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.6 JOINT-SEALANT SCHEDULE

   1. Joint Locations:
      b. Control and expansion joints in unit masonry.
      c. Joints at vinyl siding.
      d. Joints between different materials.
      e. Perimeter joints between materials listed above and frames of doors, windows, and louvers.
f. Other joints as indicated.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.


1. Joint Locations:
   a. Control and expansion joints on exposed interior surfaces of exterior walls.
   b. Perimeter joints of exterior openings where indicated.
   c. Tile control and expansion joints.
   d. Vertical joints on exposed surfaces of interior unit masonry, concrete walls, and partitions.
   e. Perimeter joints between interior wall surfaces and frames of interior doors, windows, and elevator entrances.
   f. Other joints as indicated.

3. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

END OF SECTION 079200
PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes surface preparation and field painting of the following:
   1. Exposed exterior items and surfaces as specified.
   2. Exposed interior items and surfaces as specified.
   3. Existing painted surfaces damaged, abraded, or scuffed by construction.
   4. Surface preparation, priming, and finish coats specified in this Section are in addition to shop priming and surface treatment specified in other Sections.

B. Paint exposed surfaces, except where the paint schedules indicate that a surface or material is not to be painted or is to remain natural. If the paint schedules do not specifically mention an item or a surface, paint the item or surface the same as similar adjacent materials or surfaces whether or not schedules indicate colors. If the schedules do not indicate color or finish, the Owner will select from standard colors and finishes available.
   1. Metal surfaces to be painted include the following principal items:
      a. Shop primed steel fabrications.
      b. Shop primed structural steel building columns.
      c. Ferrous metal fabrications.

C. Do not paint prefinished items, concealed surfaces, finished metal surfaces, operating parts, and labels.
   1. Prefinished items include the following factory-finished components:
      a. Metal siding.
   2. Concealed surfaces include walls or ceilings in the following generally inaccessible spaces:
      a. Furred areas.
      b. Ceiling plenums.
   3. Finished metal surfaces include the following:
      a. Anodized aluminum.
      b. Stainless steel.
      c. Chromium plate.
      d. Copper.
      e. Bronze and brass.
      f. Galvanized steel.
   4. Labels: Do not paint over Underwriters Laboratories (UL), Factory Mutual (FM), or other code-required labels or equipment name, identification, performance rating, or nomenclature plates.

D. Related Sections:
   1. Division 5 Section "Metal Fabrications" for shop priming ferrous metal.
1.3 DEFINITIONS

A. General: Standard coating terms defined in ASTM D 16 apply to this Section.
   1. Semigloss refers to medium-sheen finish with a gloss range between 30 and 65 when measured at a 60-degree meter.
   2. Full gloss refers to high-sheen finish with a gloss range more than 65 when measured at a 60-degree meter.

1.4 SUBMITTALS

A. Product Data: For each paint system specified. Include block fillers and primers.
   1. Material List: An inclusive list of required coating materials. Indicate each material and cross-reference specific coating, finish system, and application. Identify each material by manufacturer's catalog number and general classification.
   2. Manufacturer's Information: Manufacturer's technical information, including label analysis and instructions for handling, storing, and applying each coating material proposed for use.
   3. Certification: From the manufacturer attesting that products supplied comply with local regulations controlling use of volatile organic compounds (VOCs).

B. Samples for Selection: Unless colors are specified in this Section, submit manufacturer's color charts showing the full range of colors available for each type of finish-coat material indicated.
   1. After color selection, the Owner's Representative will furnish color chips for surfaces to be coated.

C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.
   1. Submit Samples on rigid backing, 8 inches square.
   2. Step coats on Samples to show each coat required for system.
   3. Label each coat of each Sample.
   4. Label each Sample for location and application area.

D. Certification: Submit written certification that materials and equipment installed or consumed in construction, are free from traces of silicone.

E. Qualification Data: For firms and persons specified in the "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

1.5 QUALITY ASSURANCE

A. Applicator Qualifications: Engage an experienced applicator who has completed painting system applications similar in material and extent to that indicated for this Project with a record of successful in-service performance.

B. Source Limitations: Obtain block fillers, primers, and undercoat materials for each coating system from the same manufacturer as the finish coats.

C. Silicones: Materials and equipment furnished for this Project shall be silicone-free.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to the Project Site in manufacturer's original, unopened packages and containers bearing manufacturer's name and label, and the following information:
   1. Product name or title of material.
   2. Product description (generic classification or binder type).
3. Manufacturer's stock number and date of manufacture.
4. Contents by volume, for pigment and vehicle constituents.
5. Thinning instructions.
6. Application instructions.
7. Color name and number.
8. VOC content.

B. Store materials not in use in tightly covered containers in a well-ventilated area at a minimum ambient temperature of 45 deg F. Maintain containers used in storage in a clean condition, free of foreign materials and residue.

1. Protect from freezing. Keep storage area neat and orderly. Remove oily rags and waste daily. Take necessary measures to ensure that workers and work areas are protected from fire and health hazards resulting from handling, mixing, and application.

1.7 PROJECT CONDITIONS

A. Apply water-based paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 50 and 90 deg F.

B. Apply solvent-thinned paints only when the temperature of surfaces to be painted and surrounding air temperatures are between 45 and 95 deg F.

C. Do not apply paint in snow, rain, fog, or mist; or when the relative humidity exceeds 85 percent; or at temperatures less than 5 deg F above the dew point; or to damp or wet surfaces.

1. Painting may continue during inclement weather if surfaces and areas to be painted are enclosed and heated within temperature limits specified by manufacturer during application and drying periods.

D. Spray application to be used only with the approval of the Owner.

PART 2 - PRODUCTS

2.1 MANUFACTURERS' REPRESENTATIVES

A. PPG Industries, Inc. (PPG) and Glidden Professional (GP)
   1. Jim Breslin, phone 734-740-4221 breslin@ppg.com
   2. Wayde Hayley, phone 416-557-8386 wayde.hayley@ppg.com

B. Sherwin-Williams Company (S-W)
   1. Joe Ghattas, phone 734-395-2448
   2. Roger Hall, phone 216-224-7509

C. Benjamin Moore (BM)
   1. Mary Hoffman, phone 815-919-0209

2.2 MANUFACTURERS AND PRODUCTS

A. Products: Provide the products named in the paint schedules.

2.3 PAINT MATERIALS

A. Owner Compliance: Paint materials shall comply with Owner Standards for quality of their respective kinds, and for painting and color requirements of surfaces of items specified in this Section.
B. Material Compatibility: Provide block fillers, primers, undercoats, and finish-coat materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

C. Material Quality: Provide manufacturer's best-quality paint material of the various coating types specified. Paint-material containers not displaying manufacturer's product identification will not be acceptable.

D. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24), Green Seal Standard GS-11, Paints, Green Seal Standard GS-03, Anti-Corrosive Paints, and SCAQMD Rule 1113 Architectural Coatings.

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

2.4 CONCRETE UNIT MASONRY BLOCK FILLERS

2.5 EXTERIOR PRIMERS
   1. Exterior Concrete and Masonry Primer: Factory-formulated alkali-resistant acrylic-latex primer for exterior application.
      a. Sherwin-Williams; Loxon Exterior Masonry Acrylic Primer A24W300: Applied at a dry film thickness of not less than 3.0 mils.
      b. Sherwin-Williams; A-100 Latex Exterior Wood Primer B42W41: Applied at a dry film thickness of not less than 1.4 mils.

2.6 INTERIOR PRIMERS
   1. Interior Concrete and Masonry Primer: Factory-formulated alkali-resistant acrylic-latex interior primer for interior application.
      a. Sherwin-Williams; PrepRite Masonry Primer B28W300: Applied at a dry film thickness of not less than 3.0 mils.
   2. Interior Gypsum Board Primer: Factory-formulated latex-based primer for interior application.
      a. Sherwin-Williams; PrepRite 200 Latex Wall Primer B28W200 Series: Applied at a dry film thickness of not less than 1.6 mils.
   3. Interior Wood Primer for Acrylic-Enamel and Semigloss Alkyd-Enamel Finishes: Factory-formulated alkyd- or acrylic-latex-based interior wood primer.
      a. Sherwin-Williams; PrepRite Wall and Wood Primer B49W200 Series: Applied at a dry film thickness of not less than 1.6 mils.
b. Sherwin-Williams; PrepRite Classic Interior Primer B28W101 Series: Applied at a dry film thickness of not less than 1.6 mils.

4. Interior Wood Primer for Full-Gloss Alkyd-Enamel Finishes: Factory-formulated alkyd- or acrylic-latex-based interior wood primer.
   a. Sherwin-Williams; PrepRite Wall and Wood Primer B49W200 Series: Applied at a dry film thickness of not less than 1.6 mils.

2.7 COLORS
   A. Provide colors as verified by the Owner's Representative

PART 3 - EXECUTION

3.1 EXAMINATION
   A. Examine substrates, areas, and conditions, with the Applicator present, under which painting will be performed for compliance with requirements for maximum moisture content and with paint application requirements.
      1. Do not begin to apply paint until unsatisfactory conditions have been corrected and surfaces receiving paint are thoroughly dry.
      2. Start of painting will be construed as the Applicator's acceptance of surfaces and conditions within a particular area.

   B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
      1. Concrete: 12 percent.
      3. Wood: 15 percent.
      4. Gypsum Board: 12 percent.
      5. Plaster: 12 percent.

   C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
   D. Plaster Substrates: Verify that plaster is fully cured.
   E. Portland Cement Plaster Substrates: Verify that plaster is fully cured.
   F. Exterior Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
   G. Coordination of Work: Review other Sections in which primers are provided to ensure compatibility of the total system for various substrates. On request, furnish information on characteristics of finish materials to ensure use of compatible primers.
      1. Notify the Owner’s Representative about anticipated problems using the materials specified over substrates primed by others.

3.2 PREPARATION
   A. General: Remove hardware and hardware accessories, plates, machined surfaces, lighting fixtures, and similar items already installed that are not to be painted. If removal is impractical or impossible because of the size or weight of the item, provide surface-applied protection before surface preparation and painting.
      1. After completing painting operations in each space or area, reinstall items removed using workers skilled in the trades involved. Remove surface-applied protection.
B. Cleaning: Before applying paint or other surface treatments, clean the substrates of substances that could impair the bond of the various coatings. Remove oil and grease before cleaning. Schedule cleaning and painting so dust and other contaminants from the cleaning process will not fall on wet, newly painted surfaces.

C. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.
   1. Provide barrier coats over incompatible primers or remove and reprime.
   2. Cementitious Materials: Prepare concrete masonry block surfaces to be painted. Remove efflorescence, chalk, dust, dirt, grease, oils, and release agents. Roughen as required to remove glaze. If hardeners or sealers have been used to improve curing, use mechanical methods of surface preparation.
      a. Use abrasive blast-cleaning methods if recommended by paint manufacturer.
      b. Determine alkalinity and moisture content of surfaces by performing appropriate tests. If surfaces are sufficiently alkaline to cause the finish paint to blister and burn, correct this condition before application. Do not paint surfaces where moisture content exceeds that permitted in manufacturer's written instructions.
   3. Ferrous Metals: Clean ungalvanized ferrous-metal surfaces that have not been shop coated; remove oil, grease, dirt, loose mill scale, and other foreign substances. Use solvent or mechanical cleaning methods that comply with the Steel Structures Painting Council's (SSPC) recommendations.
      a. Touch up bare areas and shop-applied prime coats that have been damaged. Wire-brush, clean with solvents recommended by paint manufacturer, and touch up with the same primer as the shop coat.

D. Materials Preparation: Mix and prepare paint materials according to manufacturer's written instructions.
   1. Maintain containers used in mixing and applying paint in a clean condition, free of foreign materials and residue.
   2. Stir material before application to produce a mixture of uniform density. Stir as required during application. Do not stir surface film into material. If necessary, remove surface film and strain material before using.
   3. Use only thinners approved by paint manufacturer and only within recommended limits.

E. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of the same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.3 APPLICATION

A. General: Apply paint according to manufacturer's written instructions. Use applicators and techniques best suited for substrate and type of material being applied.
   1. Paint colors, surface treatments, and finishes are indicated in the schedules.
   2. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions detrimental to formation of a durable paint film.
   3. Provide finish coats that are compatible with primers used.
   4. The term "exposed surfaces" includes areas visible when permanent or built-in fixtures, convector covers, covers for finned-tube radiation, grilles, and similar components are in place. Extend coatings in these areas, as required, to maintain the system integrity and provide desired protection.
   5. Paint surfaces behind movable equipment and furniture the same as similar exposed surfaces. Before the final installation of equipment, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
   6. Paint back sides of access panels and removable or hinged covers to match exposed surfaces.
7. Finish exterior doors on tops, bottoms, and side edges the same as exterior faces.
8. Finish upper and lower edges of doors with at least two coats.
9. Sand lightly between each succeeding enamel coat.

B. Scheduling Painting: Apply first coat to surfaces that have been cleaned, pretreated, or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

1. The number of coats and the film thickness required are the same regardless of application method. Do not apply succeeding coats until the previous coat has cured as recommended by the manufacturer. If sanding is required to produce a smooth, even surface according to manufacturer's written instructions, sand between applications.
   a. Repaint existing painted surfaces damaged, abraded, or scuffed by construction, with one coat. Terminate paint with a neat line.

2. Omit primer on metal surfaces that have been shop primed and touchup painted.

3. If undercoats, stains, or other conditions show through final coat of paint, apply additional coats until paint film is of uniform finish, color, and appearance. Give special attention to ensure edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

4. Allow sufficient time between successive coats to permit proper drying. Do not recoat surfaces until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and where application of another coat of paint does not cause the undercoat to lift or lose adhesion.

C. Application Procedures: Apply paints and coatings by brush, roller, spray, or other applicators according to manufacturer's written instructions.

1. Brushes: Use brushes best suited for the type of material applied. Use brush of appropriate size for the surface or item being painted.

2. Rollers: Use rollers of carpet, velvet back, or high-pile sheep's wool as recommended by the manufacturer for the material and texture required.

3. Spray Equipment: Use airless spray equipment with orifice size as recommended by the manufacturer for the material and texture required. Spray application to be used only with the approval of the Owner.

D. Minimum Coating Thickness: Apply paint materials no thinner than manufacturer's recommended spreading rate. Provide the total dry film thickness of the entire system as recommended by the manufacturer.

E. Prime Coats: Before applying finish coats, apply a prime coat of material, as recommended by the manufacturer, to material that is required to be painted or finished and that has not been prime coated by others. Recoat primed and sealed surfaces where evidence of suction spots or unsealed areas in first coat appears, to ensure a finish coat with no burn through or other defects due to insufficient sealing.

F. Pigmented (Opaque) Finishes: Completely cover surfaces as necessary to provide a smooth, opaque surface of uniform finish, color, appearance, and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness, or other surface imperfections will not be acceptable.

G. Completed Work: Match approved samples for color, texture, and coverage. Remove, refinish, or repaint work not complying with requirements.

3.4 CLEANING

A. Cleanup: At the end of each workday, remove empty cans, rags, rubbish, and other discarded paint materials from the site.

1. After completing painting, clean glass and paint-spattered surfaces. Remove spattered paint by washing and scraping. Be careful not to scratch or damage adjacent finished surfaces.

3.5 PROTECTION
A. Protect work of other trades, whether being painted or not, against damage by painting. Correct damage by cleaning, repairing or replacing, and repainting, as approved by Owner's Representative.

B. Provide "Wet Paint" signs to protect newly painted finishes. Remove temporary protective wrappings provided by others to protect their work after completing painting operations.
   1. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces. Comply with procedures specified in PDCA P1.

3.6 EXTERIOR PAINT SCHEDULE

A. Ferrous Metal: Provide the following finish systems over exterior ferrous metal. Primer is not required on shop-primed items.
   1. Full-Gloss, Enamel Finish: 2 finish coats over a rust-inhibitive primer.
      a. Primer: Refer to Division 5 “Metal Fabrications.”
      b. First and Second Coats: Full-gloss, exterior, enamel applied at spreading rate recommended by the manufacturer to achieve a total dry film thickness of not less than 3.0 mils.
         1) GP: Devflex #4208 Gloss DTM.
         2) PPG: 90-1310 Pitt-Tech Plus Interior/Exterior High Gloss DTM.
         3) S-W: B66100 DTM Acrylic Gloss Coating.

B. Other Exterior Exposed Steel:
   1. Aliphatic, polyurethane coating applied to DFT of not less than 3.0 mils having:
      d. BM: Corotech V500 Aliphatic Acrylic Urethane Gloss.
   2. Color and Sheen: White, gloss

3.7 INTERIOR PAINT SCHEDULE

A. Ferrous Metal: Provide the following finish systems over exposed ferrous metal:
   1. Semigloss, Enamel Finish: One finish coat over an enamel undercoater and a primer, for all ferrous metal surfaces, unless otherwise specified.
      a. Primer: Refer to Division 5 “Metal Fabrications.”
      b. Undercoat: Interior enamel undercoat or semigloss, interior, enamel finish coat, applied at spreading to achieve a total dry film thickness of not less than 1.2 mils.
         1) GP: Devflex #4020 Metal Primer.
         4) BM: Corotech V110 Acrylic Metal Primer.
      c. Finish Coat: Odorless, semigloss, interior enamel applied at spreading rate to achieve a total dry film thickness of not less than 1.4 mils.
         1) GP: Devflex #4206 Semigloss.
4) BM: Corotech V331 Acrylic DTM Enamel Semi-Gloss.

2. Full-Gloss, Alkyd-Enamel Finish: 2 finish coats over an enamel undercoater and a primer, for stair railings.
   a. Primer: Refer to Division 5 “Metal Fabrications.”
   b. Undercoat: Interior enamel undercoat or full-gloss, interior, enamel finish coat, applied at spreading rate to achieve a total dry film thickness of not less than 1.2 mils.
      1) GP: Devflex #4208 Gloss.
      4) BM: Corotech V330 Acrylic DTM Enamel Gloss.
   c. Finish Coat: Full-gloss, interior enamel applied at spreading rate to achieve a total dry film thickness of not less than 1.2 mils.
      1) GP: Devflex #4208 Gloss.
      4) BM: Corotech V330 Acrylic DTM Enamel Gloss.

3. Asphaltic Paint: Where indicated for the base of structural steel columns embedded in concrete slab:
   a. Cold-applied asphalt mastic complying with SSPC-Paint 12, except containing no asbestos fibers, or cold-applied asphalt emulsion complying with ASTM D 1187.

3.8 MECHANICAL PIPE COLOR CODING AND COATINGS

A. Full-Gloss, Acrylic-Enamel Finish: 1 finish coat over a primer.

B. Refer to Section 099150 for Finish Paint Color Schedule
   1. Primer: Quick-drying, rust-inhibitive, alkyd-based or epoxy-metal primer, applied at spreading rate to achieve a total dry film thickness of not less than 1.5 mils.
   2. Finish Coat: Full-gloss, acrylic-latex, interior enamel applied at spreading rate to achieve a total dry film thickness of not less than 2.5 mils.

END OF SECTION
SECTION 220500 – COMMON WORK RESULTS FOR PLUMBING

PART 1 - GENERAL

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

1.2 SUMMARY
   A. This Section includes the following:
      1. Piping materials and installation instructions common to most piping systems.
      2. Transition fittings.
      3. Dielectric fittings.
      4. Mechanical sleeve seals.
      5. Sleeves.
      7. Grout.
      8. Plumbing demolition.
      9. Equipment installation requirements common to equipment sections.
      10. Concrete bases.
      11. Supports and anchorages.

1.3 DEFINITIONS
   A. Finished Spaces: Spaces other than mechanical and electrical equipment rooms, furred spaces, pipe and duct shafts, unheated spaces immediately below roof, spaces above ceilings, unexcavated spaces, crawlspaces, and tunnels.
   B. Exposed, Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.
   C. Exposed, Exterior Installations: Exposed to view outdoors or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.
   D. Concealed, Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in chases.
   E. Concealed, Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.4 SUBMITTALS
   A. Product Data: For the following:
      1. Transition fittings.
      2. Dielectric fittings.
      3. Mechanical sleeve seals.
      4. Escutcheons.
   B. Welding certificates.
1.5 QUALITY ASSURANCE

A. Steel Support Welding: Qualify processes and operators according to AWS D1.1, "Structural Welding Code--Steel."
B. Steel Pipe Welding: Qualify processes and operators according to ASME Boiler and Pressure Vessel Code: Section IX, "Welding and Brazing Qualifications."
   1. Comply with provisions in ASME B31 Series, "Code for Pressure Piping."
   2. Certify that each welder has passed AWS qualification tests for welding processes involved and that certification is current.
C. Electrical Characteristics for Plumbing Equipment: Equipment of higher electrical characteristics may be furnished provided such proposed equipment is approved in writing and connecting electrical services, circuit breakers, and conduit sizes are appropriately modified. If minimum energy ratings or efficiencies are specified, equipment shall comply with requirements.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver pipes and tubes with factory-applied end caps. Maintain end caps through shipping, storage, and handling to prevent pipe end damage and to prevent entrance of dirt, debris, and moisture.
B. Store plastic pipes protected from direct sunlight. Support to prevent sagging and bending.

1.7 COORDINATION

A. Arrange for pipe spaces, chases, slots, and openings in building structure during progress of construction, to allow for mechanical installations.
B. Coordinate installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.
C. Coordinate requirements for access panels and doors for mechanical items requiring access that are concealed behind finished surfaces. Access panels and doors are specified in Division 8 Section "Access Doors and Frames."

PART 2 - PRODUCTS

2.1 PIPE, TUBE, AND FITTINGS

A. Refer to individual Division 22 piping Sections for pipe, tube, and fitting materials and joining methods.

2.2 JOINING MATERIALS

A. Refer to individual Division 22 piping Sections for special joining materials not listed below.
B. Pipe-Flange Gasket Materials: Suitable for chemical and thermal conditions of piping system contents.
   1. ASME B16.21, nonmetallic, flat, asbestos-free, 1/8-inch maximum thickness unless thickness or specific material is indicated.
      a. Full-Face Type: For flat-face, Class 125, cast-iron and cast-bronze flanges.
      b. Narrow-Face Type: For raised-face, Class 250, cast-iron and steel flanges.
   2. AWWA C110, rubber, flat face, 1/8 inch thick, unless otherwise indicated; and full-face or ring type, unless otherwise indicated.
C. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, unless otherwise indicated.
D. Solder Filler Metals: ASTM B 32, lead-free alloys. Include water-flushable flux according to ASTM B 813.
E. Brazing Filler Metals: AWS A5.8, BCuP Series, copper-phosphorus alloys for general-duty brazing, unless otherwise indicated; and AWS A5.8, BAg1, silver alloy for refrigerant piping, unless otherwise indicated.
F.  Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

2.3 TRANSITION FITTINGS

A.  AWWA Transition Couplings: Same size as, and with pressure rating at least equal to and with ends compatible with, piping to be joined.

2.4 DIELECTRIC FITTINGS

A.  Description: Combination fitting of copper alloy and ferrous materials with threaded, solder-joint, plain, or weld-neck end connections that match piping system materials.

B.  Insulating Material: Suitable for system fluid, pressure, and temperature.

C.  Dielectric Unions: Factory-fabricated, union assembly, for 250-psig minimum working pressure at 180 deg F
   1.  Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
       a.  Capitol Manufacturing Co.
       b.  Central Plastics Company.
       c.  Eclipse, Inc.
       d.  Epco Sales, Inc.
       g.  Zurn Industries, Inc.; Wilkins Div.

D.  Dielectric Flanges: Factory-fabricated, companion-flange assembly, for 150- or 300-psig minimum working pressure as required to suit system pressures.
   1.  Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
       a.  Capitol Manufacturing Co.
       b.  Central Plastics Company.
       c.  Epco Sales, Inc.

E.  Dielectric Couplings: Galvanized-steel coupling with inert and noncorrosive, thermoplastic lining; threaded ends; and 300-psig minimum working pressure at 225 deg F
   1.  Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
       a.  Calpico, Inc.
       b.  Lochinvar Corp.

F.  Dielectric Nipples: Electroplated steel nipple with inert and noncorrosive, thermoplastic lining; plain, threaded, or grooved ends; and 300-psig minimum working pressure at 225 deg F
   1.  Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
       a.  Perfection Corp.
       b.  Precision Plumbing Products, Inc.
       c.  Sioux Chief Manufacturing Co., Inc.
       d.  Victaulic Co. of America.
2.5 MECHANICAL SLEEVE SEALS
A. Description: Modular sealing element unit, designed for field assembly, to fill annular space between pipe and sleeve.
   1. Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
      a. Advance Products & Systems, Inc.
      b. Calpico, Inc.
      c. Metraflex Co.
      d. Pipeline Seal and Insulator, Inc.
      e. Link-Seal
   2. Sealing Elements: EPDM interlocking links shaped to fit surface of pipe. Include type and number required for pipe material and size of pipe.
   3. Pressure Plates: Carbon steel. Include two for each sealing element.
   4. Connecting Bolts and Nuts: Carbon steel with corrosion-resistant coating of length required to secure pressure plates to sealing elements. Include one for each sealing element.

2.6 SLEEVES
A. Galvanized-Steel Sheet: 0.0239-inch minimum thickness; round tube closed with welded longitudinal joint.
B. Steel Pipe: ASTM A 53, Type E, Grade B, Schedule 40, galvanized, plain ends.
C. Cast Iron: Cast or fabricated "wall pipe" equivalent to ductile-iron pressure pipe, with plain ends and integral waterstop, unless otherwise indicated.

2.7 ESCUTCHEONS
A. Description: Manufactured wall and ceiling escutcheons and floor plates, with an ID to closely fit around pipe, tube, and insulation of insulated piping and an OD that completely covers opening.
B. One-Piece, Deep-Pattern Type: Deep-drawn, box-shaped brass with polished chrome-plated finish.
C. One-Piece, Cast-Brass Type: With set screw.
   1. Finish: Polished chrome-plated.
D. Split-Casting, Cast-Brass Type: With concealed hinge and set screw.
   1. Finish: Polished chrome-plated.
E. Split-Plate, Stamped-Steel Type: With concealed hinge, set screw or spring clips, and chrome-plated finish.
F. One-Piece, Floor-Plate Type: Cast-iron floor plate.
G. Split-Casting, Floor-Plate Type: Cast brass with concealed hinge and set screw.

2.8 GROUT
A. Description: ASTM C 1107, Grade B, nonshrink and nonmetallic, dry hydraulic-cement grout.
   2. Design Mix: 5000-psi, 28-day compressive strength.
PART 3 - EXECUTION

3.1 PLUMBING DEMOLITION

A. Refer to Division 1 Section "Cutting and Patching" and Division 2 Section "Selective Demolition" for general demolition requirements and procedures.

B. Disconnect, demolish, and remove plumbing systems, equipment, and components indicated to be removed.

1. Piping to Be Removed: Remove portion of piping indicated to be removed and cap or plug remaining piping with same or compatible piping material.

2. Piping to Be Abandoned in Place: Drain piping and cap or plug piping with same or compatible piping material.

3. Equipment to Be Removed: Disconnect and cap services and remove equipment.

4. Equipment to Be Removed and Reinstalled: Disconnect and cap services and remove, clean, and store equipment; when appropriate, reinstall, reconnect, and make equipment operational.

5. Equipment to Be Removed and Salvaged: Disconnect and cap services and remove equipment and deliver to Owner.

C. If pipe, insulation, or equipment to remain is damaged in appearance or is unserviceable, remove damaged or unserviceable portions and replace with new products of equal capacity and quality.

3.2 PIPING SYSTEMS - COMMON REQUIREMENTS

A. Install piping according to the following requirements and Division 22 Sections specifying piping requirements.

B. Drawing plans, schematics, and diagrams indicate general location and arrangement of piping systems. Indicated locations and arrangements were used to size pipe and calculate friction loss, expansion, pump sizing, and other design considerations. Install piping as indicated unless deviations to layout are approved on Coordination Drawings.

C. Install piping in concealed locations, unless otherwise indicated and except in equipment rooms and service areas.

D. Install piping indicated to be exposed and piping in equipment rooms and service areas at right angles or parallel to building walls. Diagonal runs are prohibited unless specifically indicated otherwise.

E. Install piping above accessible ceilings to allow sufficient space for ceiling panel removal.

F. Install piping to permit valve servicing.

G. Install piping at indicated slopes.

H. Install piping free of sags and bends.

I. Install fittings for changes in direction and branch connections.

J. Install piping to allow application of insulation.

K. Select system components with pressure rating equal to or greater than system operating pressure.

L. Install escutcheons for penetrations of walls, ceilings, and floors according to the following:

1. New Piping:
   a. Piping with Fitting or Sleeve Protruding from Wall: One-piece, deep-pattern type.
   b. Chrome-Plated Piping: One-piece, cast-brass type with polished chrome-plated finish.
   c. Insulated Piping: One-piece, stamped-steel type with spring clips.
   d. Bare Piping at Wall and Floor Penetrations in Finished Spaces: One-piece, cast-brass type with polished chrome-plated finish.
e. Bare Piping at Ceiling Penetrations in Finished Spaces: One-piece, cast-brass type with polished chrome-plated finish.

f. Bare Piping in Unfinished Service Spaces: One-piece, cast-brass type with polished chrome-plated finish.

g. Bare Piping in Equipment Rooms: One-piece, cast-brass type.

h. Bare Piping at Floor Penetrations in Equipment Rooms: One-piece, floor-plate type.

2. Existing Piping: Use the following:

a. Chrome-Plated Piping: Split-casting, cast-brass type with chrome-plated finish.

b. Insulated Piping: Split-plate, stamped-steel type with concealed hinge and spring clips.

c. Bare Piping at Wall and Floor Penetrations in Finished Spaces: Split-casting, cast-brass type with chrome-plated finish.

d. Bare Piping at Ceiling Penetrations in Finished Spaces: Split-casting, cast-brass type with chrome-plated finish.

e. Bare Piping in Unfinished Service Spaces: Split-casting, cast-brass type with polished chrome-plated finish.

f. Bare Piping in Equipment Rooms: Split-casting, cast-brass type.

g. Bare Piping at Floor Penetrations in Equipment Rooms: Split-casting, floor-plate type.

M. Sleeves are not required for core-drilled holes.

N. Install sleeves for pipes passing through concrete and masonry walls and concrete floor and roof slabs.

1. Cut sleeves to length for mounting flush with both surfaces.

a. Exception: Extend sleeves installed in floors of mechanical equipment areas or other wet areas 2 inches above finished floor level. Extend cast-iron sleeve fittings below floor slab as required to secure clamping ring if ring is specified.

2. Install sleeves in new walls and slabs as new walls and slabs are constructed.

3. Install sleeves that are large enough to provide 1/4-inch annular clear space between sleeve and pipe or pipe insulation. Use the following sleeve materials:

a. Steel Pipe Sleeves: For pipes smaller than NPS 6 inches.

b. Steel Sheet Sleeves: For pipes NPS 6" and larger, penetrating gypsum-board partitions.

c. Stack Sleeve Fittings: For pipes penetrating floors with membrane waterproofing. Secure flashing between clamping flanges. Install section of cast-iron soil pipe to extend sleeve to 2 inches above finished floor level. Refer to Division 7 for flashing.

1) Seal space outside of sleeve fittings with grout.

4. Except for underground wall penetrations, seal annular space between sleeve and pipe or pipe insulation, using joint sealants appropriate for size, depth, and location of joint. Refer to Division 7 Section "Joint Sealants" for materials and installation.

O. Aboveground, Exterior-Wall Pipe Penetrations: Seal penetrations using sleeves and mechanical sleeve seals. Select sleeve size to allow for minimum 1-inch annular clear space or per manufacturers recommendation between pipe and sleeve for installing mechanical sleeve seals.

1. Install steel pipe for sleeves unless otherwise indicated on the Drawings or directed.

2. Install cast-iron "wall pipes" for sleeves where indicated on the Drawings.
3. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

P. Underground, Exterior-Wall Pipe Penetrations or Pit Penetration: Install cast-iron "wall pipes" for sleeves. Seal pipe penetrations using mechanical sleeve seals. Select sleeve size to allow for minimum 1-inch annular clear space or per manufacturers recommendation between pipe and sleeve for installing mechanical sleeve seals.

1. Mechanical Sleeve Seal Installation: Select type and number of sealing elements required for pipe material and size. Position pipe in center of sleeve. Assemble mechanical sleeve seals and install in annular space between pipe and sleeve. Tighten bolts against pressure plates that cause sealing elements to expand and make watertight seal.

Q. Fire-Barrier Penetrations: Maintain indicated fire rating of walls, partitions, ceilings, and floors at pipe penetrations. Seal pipe penetrations with firestop materials. Refer to Division 7 Section "Penetration Firestopping" for materials.

R. Verify final equipment locations for roughing-in.

S. Refer to equipment specifications in other Sections of these Specifications for roughing-in requirements.

3.3 PIPING JOINT CONSTRUCTION

A. Join pipe and fittings according to the following requirements and Division 22 Sections specifying piping materials.

B. Ream ends of pipes and tubes and remove burrs. Bevel plain ends of steel pipe.

C. Remove scale, slag, dirt, and debris from inside and outside of pipe and fittings before assembly.

D. Soldered Joints: Apply ASTM B 813, water-flushable flux, unless otherwise indicated, to tube end. Construct joints according to ASTM B 828 or CDA's "Copper Tube Handbook," using lead-free solder alloy complying with ASTM B 32.


F. Threaded Joints: Thread pipe with tapered pipe threads according to ASME B1.20.1. Cut threads full and clean using sharp dies. Ream threaded pipe ends to remove burrs and restore full ID. Join pipe fittings and valves as follows:

1. Apply appropriate tape or thread compound to external pipe threads unless dry seal threading is specified.

2. Damaged Threads: Do not use pipe or pipe fittings with threads that are corroded or damaged. Do not use pipe sections that have cracked or open welds.

G. Welded Joints: Construct joints according to AWS D10.12, using qualified processes and welding operators according to Part 1 "Quality Assurance" Article.

H. Flanged Joints: Select appropriate gasket material, size, type, and thickness for service application. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

I. Plastic Piping Solvent-Cement Joints: Clean and dry joining surfaces. Join pipe and fittings according to the following:

1. Comply with ASTM F 402 for safe-handling practice of cleaners, primers, and solvent cements.

2. PVC Nonpressure Piping: Join according to ASTM D 2855.

3.4 PIPING CONNECTIONS

A. Make connections according to the following, unless otherwise indicated:
1. Install unions, in piping NPS 2 and smaller, adjacent to each valve and at final connection to each piece of equipment.
2. Install flanges, in piping NPS 2-1/2 and larger, adjacent to flanged valves and at final connection to each piece of equipment.
3. Dry Piping Systems: Install dielectric unions and flanges to connect piping materials of dissimilar metals.

3.5 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS
A. Install equipment to allow maximum possible headroom unless specific mounting heights are not indicated.
B. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, unless otherwise indicated.
C. Install plumbing equipment to facilitate service, maintenance, and repair or replacement of components. Connect equipment for ease of disconnecting, with minimum interference to other installations. Extend grease fittings to accessible locations.
D. Install equipment to allow right of way for piping installed at required slope.

3.6 PAINTING AND LABELING
A. Painting and Labeling of mechanical systems, equipment, and components is specified in Division 9 Sections “Painting” and "Piping Identification".
B. Damage and Touchup: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish.

3.7 ERECTION OF METAL SUPPORTS AND ANCHORAGES
A. Refer to Division 5 Section "Metal Fabrications" for structural steel.
B. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.
C. Field Welding: Comply with AWS D1.1.

3.8 GROUTING
A. Mix and install grout for mechanical equipment base bearing surfaces, pump and other equipment base plates, and anchors.
B. Clean surfaces that will come into contact with grout.
C. Provide forms as required for placement of grout.
D. Avoid air entrapment during placement of grout.
E. Place grout, completely filling equipment bases.
F. Place grout on concrete bases and provide smooth bearing surface for equipment.
G. Place grout around anchors.
H. Cure placed grout.

END OF SECTION
SECTION 221423 – STORM DRAINAGE PIPING SPECIALTIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS
A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY
A. This Section includes the following plumbing specialties for water distribution systems, storm, and soil, waste, and vent systems.
   1. Roof drains.
   2. Miscellaneous storm drainage piping specialties.

1.3 PERFORMANCE REQUIREMENTS
A. Provide components and installation capable of producing piping systems with following minimum working-pressure ratings, unless otherwise indicated:
   1. Storm Drainage Piping: 10-foot head of water.

1.4 SUBMITTALS
A. Product Data: Include rated capacities and shipping, installed, and operating weights. Indicate materials, finishes, dimensions, required clearances, and methods of assembly of components; and piping connections for each type of product indicated.
B. Maintenance Data: For storm drainage piping specialties to include in maintenance manuals.

1.5 QUALITY ASSURANCE
A. Product Options: Drawings indicate size, profiles, and dimensional requirements of storm drainage piping specialties and are based on the specific system indicated.
B. Drainage piping specialties shall bear label, stamp, or other markings of specified testing agency.
C. ASME Compliance: Comply with ASME B31.9, "Building Services Piping," for piping materials and installation.

PART 2 - PRODUCTS

2.1 ROOF DRAINS
A. Manufacturers: Unless otherwise directed by the Owner, provide products by one of the following:
   1. Ancon
   2. Josam
   3. Smith
   4. Wade
   5. Zurn
B. General: Size outlet to match existing roof drains.
   1. Basis-of-Design Product: Zurn ZC-100-EA-R-AC-XJ Expando roof drain, “Dura-Coated” cast iron body with cast iron dome strainer, or equivalent. Provide extension sleeve as required, roof sump receiver, and angular underdeck clamp.
C. Expansion Joints: ASME A112.21.1M, assembly for roof drain outlet, consisting of cast iron body, with bronze sleeve, packing gland, and packing, of size and end types corresponding to connected piping.
1. Size: Same as roof drain outlet when connected to roof drain and same as connected piping when installed in piping.

2.2 FLASHING MATERIALS

A. Zinc-Coated Steel Sheet: ASTM A 653 with 0.20 percent copper content and 0.04-inch minimum thickness, unless otherwise indicated. Include G90 hot-dip galvanized, mill-phosphatized finish for painting if indicated.


C. Fasteners: Metal compatible with material and substrate being fastened.

D. Metal Accessories: Sheet metal strips, clamps, anchoring devices, and similar accessory units required for installation; matching or compatible with material being installed.

E. Solder: ASTM B 32, lead-free alloy.

F. Bituminous Coating: SSPC-Paint 12, solvent-type, bituminous mastic.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Refer to Division 22 Section "Common Work Results For Plumbing" for piping joining materials, joint construction, and basic installation requirements.

1. Size same as drainage piping up to NPS 4. Use NPS 4 for larger drainage piping unless larger cleanout is indicated.

2. Locate at each change in direction of piping greater than 45 degrees.

B. Install flashing flange and clamping device with each stack and cleanout passing through floors with waterproof membrane.

C. Install roof drains at low points of roof areas according to roof membrane manufacturer's written installation instructions.

1. Install roof-drain flashing collar or flange so no leakage occurs between drain and adjoining roofing. Maintain integrity of waterproof membranes where penetrated.

2. Position roof drains for easy access and maintenance.

D. Fasten wall-hanging storm drainage piping specialties securely to supports attached to building substrate if supports are specified and to building wall construction if no support is indicated.

3.2 CONNECTIONS

A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.

B. Install piping adjacent to equipment to allow service and maintenance.

3.3 FLASHING INSTALLATION

A. Fabricate flashing manufactured from single piece unless large pans, sumps, or other drainage shapes are required.

B. Install sheet flashing on pipes, sleeves, and specialties passing through or embedded in floors and roofs with waterproof membrane.

1. Pipe Flashing: Sleeve type, matching pipe size, with minimum length of 10 inches and skirt or flange extending at least 8 inches around pipe.

2. Sleeve Flashing: Flat sheet, with skirt or flange extending at least 8 inches around sleeve.
3. Embedded Specialty Flashing: Flat sheet, with skirt or flange extending at least 8 inches around specialty.
C. Set flashing on floors and roofs in solid coating of bituminous cement.
D. Secure flashing into sleeve and specialty clamping ring or device.
E. Install flashing for piping passing through roofs with counterflashing or commercially made flashing fittings, according to Division 7 Section "Sheet Metal Flashing and Trim."

3.4 PROTECTION
A. Protect drains during remainder of construction period to avoid clogging with dirt and debris and to prevent damage from traffic and construction work.
B. Place plugs in ends of uncompleted piping at end of each day or when work stops.

3.5 COMMISSIONING
A. Before startup, perform the following checks:
   1. System tests are complete.
   2. Damaged and defective specialties and accessories have been replaced or repaired.
   3. Clear space in provided for servicing specialties.
B. Before operating systems, perform the following steps:
   1. Verify that drainage piping is clear of obstructions. Flush with water until clear.
C. Startup Procedures: Follow manufacturer’s written instructions.
D. Adjust operation and correct deficiencies discovered during commissioning.

END OF SECTION