Division of Finance and Business Operations

Wayne State University

Scott Hall Roof Replacement

WSU Project Number 612-256214

Prevailing Wage Work

FOR:
Board of Governors
Wayne State University
Detroit, Michigan

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

Owner's Agent:
Robert Kuhn, **Sr. Buyer**
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-4567 / 313-577-3747 fax
Ac6243@wayne.eduand copy **ab3577@wayne.edu**

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

March 4, 2015

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INFORMATION FOR BIDDERS

OWNER:	Board of Governors Wayne State University
PROJECT:	**Scott Hall Roof Replacement** **Project No. 612-256214**
LOCATION:	Wayne State University 540 E. Canfield Detroit, Michigan 48202
OWNER'S AGENT:	**Robert Kuhn**, **Sr. Buyer** WSU – Procurement & Strategic Sourcing 5700 Cass, Suite 4200 Detroit, Michigan 48202 **313-577-4567** / 313-577-3747 fax **Ac6243@wayne.edu**& copy **ab3577@wayne.edu**
OWNER'S REPRESENTATIVE:	**Robert Jacobs , Project Manager** Facilities Planning & Management Design & Construction Services Wayne State University 5454 Cass Avenue Detroit, Michigan 48202
Architect:	**NSA Architects, Engineers, Planners** **23761 Research Drive** **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: March 4, 2015

BIDDING: Bidding documents may be obtained by vendors from the University Purchasing Web Site at **http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html** beginning **March 4, 2015**. 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: 3:00 p. m., local time, March 10, 2015 to be held at Wayne State University – **Scott Hall 540 E. Canfield**, **Room 1358,** 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 **March 17, 2015 at 12:00 Noon.** All questions must be reduced to writing and emailed to the attention of **Robert Kuhn**, **Sr. Buyer** at **Ac6243@wayne.edu**, copy to **Cynthia Branch**, **Buyer** at: **ab3577@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 **March 24, 2015,** 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 prequalification, 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 Pre Award 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://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html.
Information that is not posted to the website is not available/not known

INSTRUCTIONS TO BIDDERS

OWNER: Board of Governors
Wayne State University

PROJECT: **Scott Hall Roof Replacement**
Project No. 612-256214

LOCATION: Wayne State University
540 E. Canfield,
Detroit, Michigan 48202

OWNER'S AGENT: **Robert Kuhn**, **Sr. Buyer**
WSU – Procurement & Strategic Sourcing
5700 Cass, Suite 4200
Detroit, Michigan 48202
313-577-4567 / 313-577-3747 fax
Ac6243@wayne.edu& copy **ab3577@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 informality 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 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.

13. NOTICE OF AWARD/ACCEPTANCE OF BID PROPOSAL *(revised, 12-15-2009)*

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. An executed Contract is anticipated mid May 2015 with Start of Construction after Memorial Day holiday and no later than May 27, 2015.

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 **March 4, 2015**through Wayne State University Procurement & Strategic Sourcing's Website for Advertised Bids: **http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html**. The plans for this project can be viewed in advance and/or printed from the above website. Copies of the RFP will not be available at the pre-proposal meeting.

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B. **DOCUMENTS ON FILE *(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://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html**.
Information that is not posted to the website is not available/not known.

(2) Notification of this Bid Opportunity has been sent to *DUNN BLUE (for purchase of Bid Documents only), DODGE REPORTS, REED CONSTRUCTION, CONSTRUCTION NEWS and the CONSTRUCTION ASSOCIATION OF MICHIGAN (CAM).*

(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://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html**, and click on the "Join our List-serve" link at the top of the page.

NOTICE OF MANDATORY PRE-BID CONFERENCE

PROJECT: **Scott Hall Roof Replacement**,

PROJECT NOS.: **WSU PROJECT NO. 612-256214**

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
Scott Hall 540 E. Canfield, Room 1358
Detroit MI 48202

3:00 p. m., local time, March 10, 2015

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.

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 **$7.00**. A detailed list of Cash & Coin operated lots can be viewed at **http://purchasing.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://www.forms.purchasing.wayne.edu/Adv_bid/Adv_bid.html.
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 fax number and email address (LEGIBLY) 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 List-Serv. See **http://www.forms.purchasing.wayne.edu/Adv_bid/Adv_Bid_List-Serve.html** for a list of List-Serv Bid Lists.
   C. Minutes will be emailed to all participants of the meeting within a reasonable amount of time. (be sure to include your email address/addresses on the sign in sheet)
   D. Questions and concerns that come up after this meeting are to be addressed to **Robert Kuhn**, 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 **March 17, 2015, 12:00 noon**.

IV. Proposal Due Date- **March 24, 2015, 2:00 p.m.**

V. Final Comments

VI. Adjourn

VENDOR NAME_____

GENERAL CONTRACT - PROPOSAL FORM *(revised 1 - 2011)*

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:	**Scott Hall Roof Replacement**
PROJECT NO.:	**WSU PROJECT NO. 612-256214**
PROJECT TYPE:	**General Contractor, roofing, steel, sheet metal, plumbing, mechanical, carpentry Work**
PURCHASING AGENT:	**Robert Kuhn**, **Sr. Buyer** WSU – Procurement & Strategic Sourcing 5700 Cass, Suite 4200 Detroit, Michigan 48202 **313-577-4567**/ 313-577-3747 fax **Ac6243@wayne.edu**& copy **ab3577@wayne.edu**
OWNER'S REPRESENTATIVE:	**Robert Jacobs , 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 **Scott Hall Roof Replacement** project (WSU Project No. **612-256214**) in accordance with the Bidding Documents for the following amounts:

$ _____ Dollars

ALLOWANCE: A $10,000.00 General Construction Allowance shall be included within the base bid to cover costs associated with furnishing all labor, materials, equipment, supervision and incidentals necessary to perform miscellaneous patch/repairs and removal/replacement items discovered during the progress of the work. The allowance expenditure must be approved in advance by WSU with a signed Allowance Authorization Form. All work must have required support documentation including daily time and materials work tickets signed by the WSU PM, documenting final quantities with itemized charges for work noted in order to apply to monthly progress billing.

$10,000.00 Dollars

TOTAL BASE PROPOSAL WITH ALLOWANCE:

$ _____ Dollars

ALTERNATES: The following alternates 1 thru 4 to the base proposal 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.

The undersigned agrees to enter into an agreement to complete the Alternates 1 thru 4 for the Scott Hall Roof Replacement (WSU Project No. 612-256214) and to provide all labor and material associated with the Bidding Documents for the following amount(s):

ALTERNATE 1 **Add an additional three new roof sumps, strainers, and associated storm drainage piping.**

(Select one) ADD _____ $ _____ Dollars

DEDUCT _____ ($ _____ Dollars)

ALTERNATE 2 **Prep and paint all existing rooftop vents and flashings not otherwise removed.**

(Select one) ADD _____ $ _____ Dollars

DEDUCT _____ ($ _____ Dollars)

ALTERNATE 3 **Provide Full Metal Coping with two concealed cleats as indicated on drawings.**

(Select one) ADD _____ $ _____ Dollars

DEDUCT _____ ($ _____ Dollars)

ALTERNATE 4 **Leave mechanical unit indicated on drawings in an "as-is" condition. Roof and Flash around supports, associated connections and penetrations.**

(Select one) ADD _____ $ _____ Dollars

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 4-01-2011)*** The undersigned agrees to the following pricing formula and rates for changes in the contract work:

1. For subcontract work, Contractor's markup for handling, overhead, profit and bonding on subcontractors sell price, shall not exceed **5%.**

   1.1. For subcontract work that is provided on a time and material basis, the subcontractor shall be permitted a single markup for handling, overhead, profit and bonding of 5%. When a markup is identified

in the subcontractor's hourly labor rate, additional markup on labor is not permitted.

1.1.1 For changes that are based upon a lump sum value, subcontractor shall provide all labor and material back-ups to ensure that duplicative charges are avoided and authorized mark-ups for OH&P can be confirmed

2. For work by his own organization, Contractor's markup for job* and general overhead, profit and bonding shall not exceed **5%** of the net labor** and material costs.

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 **June 30, 2015.**

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 **$1,000.00, One Thousand Dollars per day**, and therefore the contractor shall pay as liquidated damages to the Owner the sum of **$1,000.00, One Thousand 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:

WSU considers this project: General Contractor, roofing, steel, sheet metal, plumbing, mechanical, carpentry Work.

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

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

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

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

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

_____ Corporation _____ Individual

_____ Partnership _____ Joint Venture

_____ Other (Explain)

_____

_____

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: _____

Project: _____ Owner: _____

Contract Amount:_____ Date Completed: _____

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

Project:_____ Owner:_____

Contract Amount: _____ Date Completed: _____

Project: _____ Owner: _____

Contract Amount: _____ Date Completed: _____

Project: _____ Owner: _____

Contract Amount: _____ Date Completed: _____

14. Is your Company "bondable"? Yes _____ No_____

15. What is your present bonding capacity? $ _____

16. Who is your bonding agent?

NAME: _____

ADDRESS: _____

PHONE: (_____) _____

CONTACT: _____

17. Does your company agree to provide financial reports to the University upon request? Failure to agree may result in disqualification of your bid. 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_____

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. It will 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://purchasing.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

F. **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://purchasing.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.

SEE ATTACHED STATE PREVAILING WAGE INFORMATION

State of Michigan

WHPWRequest@michigan.gov

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement
Project Number: 612-256214

Wayne County

Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
Contract must be awarded by: 5/24/2015
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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Asbestos & Lead Abatement Laborer							
Asbestos & Lead Abatement Laborer	4 ten hour days @ straight time allowed Monday-Saturday, must be consecutive	MLDC	10/1/2014	$40.25	$53.64	$67.03	H H H X X X X D Y
Asbestos & Lead Abatement, Hazardous Material Handler							
Asbestos and Lead Abatement, Hazardous Material Handler	4 ten hour days @ straight time allowed Monday-Saturday, must be consecutive	AS207	10/1/2014	$40.25	$53.58	$66.90	H H H X X X X D Y
Boilermaker							
Boilermaker		BO169	2/17/2015	$54.70	$81.08	$107.45	H H H H H H H D Y
	Apprentice Rates:						
	1st 6 months			$40.31	$59.49	$78.67	
	2nd 6 months			$41.45	$61.21	$80.95	
	3rd 6 months			$42.57	$62.88	$83.19	
	4th 6 months			$43.69	$64.57	$85.43	
	5th 6 months			$44.81	$66.24	$87.67	
	6th 6 months			$48.63	$72.50	$96.36	
	7th 6 months			$49.32	$73.01	$96.69	
	8th 6 months			$51.58	$76.40	$101.21	

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015

Contract must be awarded by: 5/24/2015

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Bricklayer						
Bricklayer, stone mason, pointer, cleaner,	BR1	10/15/2014	$52.43	$78.65	$104.86	H H D H D D D D Y
Make up day allowed comment						
Saturday for 5 day 8 hour week Friday for 4 day 10 hour week 4 10s allowed M-TH						
	Apprentice Rates:					
	First 6 months		$31.87	$47.81	$63.74	
	2nd 6 months		$33.72	$50.60	$67.44	
	3rd 6 months		$35.57	$53.37	$71.14	
	4th 6 months		$37.42	$56.14	$74.84	
	5th 6 months		$39.27	$58.92	$78.54	
	6th 6 months		$41.12	$61.70	$82.24	
	7th 6 months		$42.97	$64.46	$85.94	
	8th 6 months		$44.82	$67.24	$89.64	
Carpenter						
Diver	CA 687 D	6/25/2014	$64.65	$93.14	$121.63	X X H X X H H D Y
Four 10s allowed M-Sat; double time due when over 12 hours worked per day						
Make up day allowed comment						
Saturday						

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement
Project Number: 612-256214
County: Wayne

Official Rate Schedule

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Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015

Contract must be awarded by: 5/24/2015

Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Carpet and Resilient Floor Layer, (does not include installation of prefabricated formica & parquet flooring which is to be paid carpenter rate)	CA1045	6/12/2014	$49.21	$70.18	$91.14	X X H X X X X D Y
Apprentice Rates:						
1st 6 months			$24.23	$32.71	$41.18	
2nd 6 months			$28.25	$38.73	$49.22	
3rd 6 months			$30.35	$41.88	$53.42	
4th 6 months			$32.44	$45.02	$57.60	
5th 6 months			$34.54	$48.17	$61.80	
6th 6 months			$36.63	$51.31	$65.98	
7th 6 months			$38.74	$54.48	$70.20	
8th 6 months			$40.82	$57.59	$74.36	
Carpenter four 10s allowed Mon-Sat; double time due when over 12 hours worked per day *Make up day allowed comment* Saturdays	CA687Z1	6/24/2014	$55.24	$79.04	$102.84	X X H X X H H D Y
Apprentice Rates:						
1st year			$33.82	$46.92	$60.00	
3rd 6 months			$36.21	$50.49	$64.78	
4th 6 months			$38.58	$54.05	$69.52	
5th 6 months			$40.97	$57.64	$74.30	
6th 6 months			$43.33	$61.17	$79.02	
7th 6 months			$45.72	$64.77	$83.80	
8th 6 months			$48.09	$68.32	$88.54	

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule

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Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
Contract must be awarded by: 5/24/2015
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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Piledriver Four 10s allowed Monday-Saturday; double time due when over 12 hours worked per day *Make up day allowed comment* Saturday	CA687Z1P	6/24/2014	$55.24	$79.04	$102.84	X X H X X H H D Y
Apprentice Rates:						
1st 6 months			$33.82	$46.92	$60.00	
2nd 6 months			$38.58	$54.05	$69.52	
3rd 6 months			$43.33	$61.17	$79.02	
4th 6 months			$48.09	$68.32	$88.54	
Cement Mason						
Cement Mason	br1cm	10/15/2014	$50.05	$71.17	$92.28	X X H H H H H D N
Apprentice Rates:						
1st 6 months			$29.13	$39.45	$49.77	
2nd 6 months			$31.20	$42.54	$53.87	
3rd 6 months			$35.31	$48.67	$62.01	
4th 6 months			$39.46	$54.85	$70.23	
5th 6 months			$41.52	$57.91	$74.30	
6th 6 months			$45.67	$64.10	$82.52	
Cement Mason	CE514	11/10/2011	$46.30	$64.89	$83.48	H H D H H H H D N
Apprentice Rates:						
1st 6 months			$26.77	$36.07	$45.36	
2nd 6 months			$28.68	$38.91	$49.13	
3rd 6 months			$32.50	$44.59	$56.66	
4th 6 months			$36.32	$50.26	$64.19	
5th 6 months			$38.24	$53.11	$67.98	
6th 6 months			$42.06	$58.79	$75.51	

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Drywall						
Drywall Taper	PT-22-D	9/5/2014	$44.41	$57.66	$70.91	H H D H D D D D Y
Four 10s allowed Monday-Thursday						
Make up day allowed comment						
Friday make-up day for bad weather or holidays						
Apprentice Rates:						
First 3 months			$31.16	$37.79	$44.41	
Second 3 months			$33.81	$41.76	$49.71	
Second 6 months			$36.46	$45.73	$55.01	
Third 6 months			$39.11	$49.71	$60.31	
4th 6 months			$40.43	$51.69	$62.95	
Electrician						
Inside Wireman	EC-58-IW	10/2/2014	$58.91	$77.39	$95.87	H H H H H H H D N
Apprentice Rates:						
0-1000 hours			$36.73	$44.12	$51.51	
1000-2000 hours			$38.58	$46.89	$55.21	
2000-3500 hours			$40.43	$49.67	$58.91	
3500-5000 hours			$42.27	$52.44	$62.59	
5000-6500 hours			$45.97	$57.98	$69.99	
6500-8000 hours			$49.67	$63.53	$77.39	
Sound and Communication Installer/Technician	EC-58-SC	10/2/2014	$37.48	$50.29	$63.09	H H H H H H H D N
Apprentice Rates:						
Period 1			$24.67	$31.07	$37.47	
Period 2			$25.95	$32.99	$40.03	
Period 3			$27.24	$34.93	$42.61	
Period 4			$28.51	$36.83	$45.15	
Period 5			$29.79	$38.75	$47.71	
Period 6			$31.07	$40.67	$50.27	

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
Contract must be awarded by: 5/24/2015
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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Elevator Constructor							
Elevator Constructor		EL 36	8/7/2007	$56.46		$94.99	D D D D D D D D Y
Elevator Constructor							
Make up day allowed							
	Apprentice Rates:						
	1st Year Apprentice			$37.74		$58.93	
	2nd Year Apprentice			$41.90		$66.94	
	3rd Year Apprentice			$43.98		$70.95	
	4th Year Apprentice			$48.14		$78.96	
Glazier							
Glazier		GL-357	10/2/2014	$47.35	$65.97	$84.58	H H H H H H H D Y
If a four 10 hour day workweek is scheduled, four 10s must be consecutive, M-F.							
	Apprentice Rates:						
	1st 6 months			$32.45	$43.62	$54.78	
	2nd 6 months			$33.94	$45.85	$57.76	
	3rd 6 months			$36.92	$50.33	$63.72	
	4th 6 months			$38.41	$52.56	$66.70	
	5th 6 months			$39.90	$54.79	$69.68	
	6th 6 months			$41.39	$57.03	$72.66	
	7th 6 months			$42.88	$59.27	$75.64	
	8th 6 months			$45.86	$63.73	$81.60	
Heat and Frost Insulator							
Spray Insulation		AS25S	3/5/2007	$20.14	$29.14		H H H H H H H H N

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement
Project Number: 612-256214
County: Statewide

Official Rate Schedule

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
Contract must be awarded by: 5/24/2015
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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Heat and Frost Insulator and Asbestos Worker							
Heat and Frost Insulators and Asbestos Workers		AS25	1/29/2014	$60.25	$76.00	$91.74	H H H H H H H D Y
Four 10s must be worked for a minimum of 2 weeks consecutively, Monday thru Thursday. All hours worked in excess of 10 will be paid at double time. All hours worked on the fifth day,							
	comment						
Four 10s must be worked for a minimum of 2 consecutive weeks. OVERTIME is different on a four 10 week. OT is 2x for hours beyond 10. All hours on fifth day, M-F require time and one half. Sat first 8 hours, 1.5, all hours after 8 require double time.							
	Apprentice Rates:						
	1st Year			$46.08	$54.74	$63.40	
	2nd Year			$49.23	$59.46	$69.70	
	3rd Year			$50.80	$61.82	$72.84	
	4th Year			$53.95	$66.54	$79.14	
Ironworker							
Fence, Sound Barrier & Guardrail erection/installation and Exterior Signage work Four ten hour work days may be worked during Monday-Saturday.		IR-25-F1	2/24/2015	$34.65	$46.65	$58.65	X X H X X X H D Y
	Apprentice Rates:						
	60% Level			$24.25	$31.45	$38.65	
	65% Level			$25.55	$33.35	$41.15	
	70% Level			$26.86	$35.26	$43.66	
	75% Level			$28.15	$37.15	$46.15	
	80% Level			$29.45	$39.05	$48.65	
	85% Level			$30.75	$40.95	$51.15	

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule
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Official 2015 Prevailing Wage Rates for State Funded Projects

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Contract must be awarded by: 5/24/2015
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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Siding, Glazing, Curtain Wall 4 tens may be worked Monday thru Thursday @ straight time. *Make up day allowed comment* Friday	IR-25-GZ2	9/4/2014	$46.41	$58.07	$69.73	X X H H H H D D Y
Apprentice Rates:						
Level 1			$29.48	$36.09	$42.68	
Level 2			$31.59	$38.83	$46.05	
Level 3			$33.71	$41.58	$49.44	
Level 4			$35.83	$44.33	$52.82	
Level 5			$37.94	$47.07	$56.20	
Level 6			$40.06	$49.82	$59.58	
Pre-engineered Metal Work *Make up day allowed comment* 4 tens allowed M-Th with Saturday make up day	IR-25-PE-Z1	6/3/2014	$45.24	$55.53	$65.81	X X H X X X X D Y
Apprentice Rates:						
1st Year			$26.11	$31.58	$37.06	
3rd 6 month period			$28.23	$34.46	$40.68	
4th 6 month period			$30.36	$37.35	$44.33	
5th 6 month period			$32.48	$40.21	$47.95	
6th 6 month period			$34.61	$43.99	$53.37	
Reinforced Iron Work *Make up day allowed*	IR-25-RF	9/3/2014	$55.36	$82.91	$110.45	H H D H D D D D N
Apprentice Rates:						
Level 1			$36.01	$53.89	$71.75	
Level 2			$38.38	$57.43	$76.49	
Level 3			$40.74	$60.98	$81.21	
Level 4			$43.28	$64.78	$86.29	
Level 5			$45.81	$68.59	$91.35	
Level 6			$48.35	$72.39	$96.43	

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule

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Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Rigging Work	IR-25-RIG	9/3/2014	$61.33	$91.67	$122.00	H H H H H H H D N
Apprentice Rates:						
Level 1& 2			$36.63	$54.59	$72.55	
Level 3			$39.46	$58.84	$78.21	
Level 4			$42.28	$63.07	$83.85	
Level 5			$45.11	$67.31	$89.51	
Level 6			$47.94	$71.56	$95.17	
Decking 4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time. *Make up day allowed comment* Friday for 4 tens M-Th Saturday for 5 eights M-F	IR-25-SD	9/4/2014	$53.29	$79.63	$105.96	X X H H H H D D Y
Structural, ornamental, welder and pre-cast 4 tens may be worked Monday thru Thursday @ straight time. If bad weather, Friday may be a make up day. If holiday celebrated on a Monday, 4 10s may be worked Tuesday thru Friday. Work in excess of 12 hours per day must be paid @ double time. *Make up day allowed*	IR-25-STR	9/3/2014	$61.46	$91.84	$122.21	H H H H H H D D Y
Apprentice Rates:						
Levels 1 & 2			$36.05	$54.01	$71.97	
Level 3			$38.88	$58.26	$77.63	
Level 4			$41.70	$62.49	$83.27	
Level 5			$44.53	$66.73	$88.93	
Level 6			$47.36	$70.98	$94.59	
Level 7			$50.18	$75.20	$100.23	
Level 8			$53.01	$79.46	$105.89	

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Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Project Number: 612-256214
County: Wayne

Official Rate Schedule
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Official 2015 Prevailing Wage Rates for State Funded Projects

Issue Date: 2/23/2015
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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Industrial Door erection & construction	IR-25-STR-D	9/4/2014	$42.02	$62.68	$83.33	H H H H H H D D Y
Make up day allowed comment						
Friday for bad weather when 4 tens scheduled for M-Th. If holiday celebrated on M, 4 tens may be worked T-F. Work in excess of 12 hours per day must be paid @ double time.						

Laborer

Construction Laborer, Demolition Laborer, Mason Tender,Carpenter Tender, Drywall Handler, Concrete Laborer, Cement Finisher Tender, Concrete Chute, and Concrete Bucket Handler	L33401-A-CC	7/15/2013	$43.54	$61.94	$80.33	H H H H H H H D Y
If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8						
Make up day allowed comment						
Saturday						

Apprentice Rates:			
0-1,000 work hours	$37.60	$53.03	$68.45
1,001 - 2,000 work hours	$38.79	$54.81	$70.83
2,001 - 3,000 work hours	$39.98	$56.60	$73.21
3,001 - 4,000 work hours	$42.35	$60.15	$77.95

Signal Man (on sewer & caisson work), Air, Electric or Gasoline Tool Operator, Concrete Vibrator Operator, Acetylene Torch & Air Hammer Operator; Scaffold Builder, Caisson Worker	L33401-B-SB	7/16/2013	$43.80	$62.33	$80.85	H H H H H H H D Y
If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8						
Make up day allowed comment						
Saturday						

Official Request #: 225 **Official Rate Schedule**
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement

Every contractor and subcontractor shall keep posted on the construction site, in a conspicuous place, a copy of all prevailing wage and fringe benefit rates prescribed in a contract.

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Furnace Battery Heater Tender, Burning Bar & Oxy-Acetylene Gun	L33401-D-HH	7/16/2013	$44.04	$62.69	$81.33	H H H H H H H D Y
If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8 hours of work on Saturdays @ straight time. *Make up day allowed comment* Saturday						
Expediter Man, Top Man and/or Bottom Man (Blast Furnace Work or Battery Work)	L33401-E-EX	7/16/2013	$44.79	$63.81	$82.83	H H H H H H H D Y
If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8 hours of work on Saturdays @ straight time. *Make up day allowed comment* Saturday						
Cleaner/Sweeper Laborer; Furniture Laborer	L33401-F-CL	7/16/2013	$38.09	$53.76	$69.43	H H H H H H H D Y
If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8 hours of work on Saturdays @ straight time. *Make up day allowed comment* Saturday						
Lansing Burner, Blaster & Powder Man; Air, Electric or Gasoline Tool Operator (Blast Furance Work or Battery Work)	L334C	7/16/2013	$44.29	$63.06	$81.83	X X H X H H H D Y
Make up day allowed comment SaturdayOfficial Request #: 225						

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Plasterer Tender, Plastering Machine Operator		LPT-1	10/25/2013	$43.54	$61.94	$80.33	X X H H H H H D Y

If conditions beyond the employer/employee's control prevent one or more hours of working during Mon-Fri, the employer may choose to work up to 10 hour straight time weekdays. Work may be scheduled up to 10 hours per Mon-Fri for the purpose of reaching 40 hours @ straight time. Make up days may also include 8

Make up day allowed comment
Saturday

Apprentice Rates:			
0 - 1,000 hours	$37.60	$53.03	$68.45
1,001 - 2,000 hours	$38.79	$54.81	$70.83
2,001 - 3,000 hours	$39.98	$56.60	$73.21
3,001 - 4,000 hours	$42.35	$60.15	$77.95

Laborer - Hazardous

Class A performing work in conjunction with site preparation and other preliminary work prior to actual removal, handling, or containment of hazardous waste substances not requiring use of personal protective equipment required by state or federal regulations; or a laborer performing work in conjunction with the removal, handling, or containment of hazardous waste substances when use of personal protective equipment level "D" is required.	LHAZ-Z1-A	11/7/2014	$43.54	$61.94	$80.33	H H H H H H H D Y

Make up day allowed comment
4 10s allowed M-Th or T-F; inclement weather makeup day Friday

Apprentice Rates:			
0-1,000 work hours	$37.60	$53.03	$68.45
1,001-2,000 work hours	$38.79	$54.81	$70.83
2,001-3,000 work hours	$39.98	$56.60	$73.21
3,001-4,000 work hours	$42.35	$60.15	$77.95

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class B performing work in conjunction with the removal, handling, or containment of hazardous waste substances when the use of personal protective equipment levels "A", "B" or "C" is required.		LHAZ-Z1-B	11/7/2014	$44.54	$63.44	$82.33	H H H H H H H D Y
Make up day allowed comment							
4 10s allowed M-Th or T-F; inclement weather makeup day Friday							
	Apprentice Rates:						
	0-1,000 work hours			$38.36	$54.17	$69.97	
	1,001-2,000 work hours			$39.59	$56.01	$72.43	
	2,001-3,000 work hours			$40.83	$57.87	$74.91	
	3,001-4,000 work hours			$43.30	$61.58	$79.85	

Laborer Underground - Tunnel, Shaft & Caisson

Class I - Tunnel, shaft and caisson laborer, dump man, shanty man, hog house tender, testing man (on gas), and watchman.		LAUCT-Z1-1	9/6/2013	$37.87	$48.66	$59.44	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.05	$41.43	$49.80	
	1,001-2,000 work hours			$34.02	$42.88	$51.74	
	2,001-3,000 work hours			$34.98	$44.32	$53.66	
	3,001-4,000 work hours			$36.91	$47.21	$57.52	
Class II - Manhole, headwall, catch basin builder, bricklayer tender, mortar man, material mixer, fence erector, and guard rail builder.		LAUCT-Z1-2	9/6/2013	$37.98	$48.82	$59.66	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.14	$41.56	$49.98	
	1,001-2,000 work hours			$34.10	$43.00	$51.90	
	2,001-3,000 work hours			$35.07	$44.45	$53.84	
	3,001-4,000 work hours			$37.01	$47.37	$57.72	

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class III - Air tool operator (jack hammer man, bush hammer man and grinding man), first bottom man, second bottom man, cage tender, car pusher, carrier man, concrete man, concrete form man, concrete repair man, cement invert laborer, cement finisher, concrete shoveler, conveyor man, floor man, gasoline and electric tool operator, gunnite man, grout operator, welder, heading dinky man, inside lock tender, pea gravel operator, pump man, outside lock tender, scaffold man, top signal man, switch man, track man, tugger man, utility man, vibrator man, winch operator, pipe jacking man, wagon drill and air track operator and concrete saw operator (under 40 h.p.).		LAUCT-Z1-3	9/6/2013	$38.04	$48.91	$59.78	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.18	$41.62	$50.06	
	1,001-2,000 work hours			$34.15	$43.07	$52.00	
	2,001-3,000 work hours			$35.12	$44.53	$53.94	
	3,001-4,000 work hours			$37.07	$47.45	$57.84	
Class IV - Tunnel, shaft and caisson mucker, bracer man, liner plate man, long haul dinky driver and well point man.		LAUCT-Z1-4	9/6/2013	$38.22	$49.18	$60.14	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.32	$41.83	$50.34	
	1,001-2,000 work hours			$34.30	$43.30	$52.30	
	2,001-3,000 work hours			$35.28	$44.77	$54.26	
	3,001-4,000 work hours			$37.24	$47.71	$58.18	Official Request #: 225

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class V - Tunnel, shaft and caisson miner, drill runner, keyboard operator, power knife operator, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars)	LAUCT-Z1-5	9/6/2013	$38.47	$49.56	$60.64	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$33.50	$42.10	$50.70	
1,001-2,000 work hours			$34.50	$43.60	$52.70	
2,001-3,000 work hours			$35.49	$45.09	$54.68	
3,001-4,000 work hours			$37.48	$48.07	$58.66	
Class VI - Dynamite man and powder man.	LAUCT-Z1-6	9/6/2013	$38.80	$50.05	$61.30	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$33.75	$42.47	$51.20	
1,001-2,000 work hours			$34.76	$43.99	$53.22	
2,001-3,000 work hours			$35.77	$45.51	$55.24	
3,001-4,000 work hours			$37.79	$48.53	$59.28	
Class VII - Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes and flagstones.	LAUCT-Z1-7	9/6/2013	$32.08	$39.97	$47.86	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$28.71	$34.91	$41.12	
1,001-2,000 work hours			$29.38	$35.92	$42.46	
2,001-3,000 work hours			$30.06	$36.94	$43.82	
3,001-4,000 work hours			$31.41	$38.97	$46.52	

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Landscape Laborer						
Landscape Specialist includes air, gas, and diesel equipment operator, skidsteer (or equivalent), lawn sprinkler installer on landscaping work where seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintenance of landscape projects occurs. Sundays paid at time & one half. Holidays paid at double time.	LLAN-Z1-A	6/26/2014	$28.58	$39.49	$50.39	X X H X X X H D Y
Skilled Landscape Laborer: small power tool operator, lawn sprinkler installers' tender, material mover, truck driver when seeding, sodding, planting, cutting, trimming, backfilling, rough grading or maintaining of landscape projects occurs Sundays paid at time & one half. Holidays paid at double time.	LLAN-Z1-B	6/26/2014	$24.36	$33.16	$41.95	X X H X X X H D Y
Marble Finisher						
Marble Finisher A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.	BR1-MF	10/20/2014	$43.48	$54.29	$65.10	H H D H D D D D Y
Apprentice Rates:						
Level 1			$19.04	$25.12	$31.20	
Level 2			$20.24	$26.92	$33.60	
Level 3			$27.01	$33.96	$40.90	
Level 4			$28.47	$36.14	$43.82	
Level 5			$29.99	$37.84	$45.70	
Level 6			$31.61	$39.86	$48.10	
Level 7			$33.30	$41.59	$49.87	
Level 8			$34.79	$43.48	$52.17	Official Request #: 225

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Marble Mason						
Marble Mason A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.	BR1-MM	10/17/2014	$50.29	$64.51	$78.72	H H D H D D D D Y
Apprentice Rates:						
Level 1			$25.14	$32.65	$40.15	
Level 2			$28.20	$36.49	$44.78	
Level 3			$33.41	$41.97	$50.53	
Level 4			$36.15	$45.66	$55.17	
Level 5			$38.42	$48.17	$57.92	
Level 6			$42.07	$53.56	$65.05	
Level 7			$42.74	$54.38	$66.02	
Level 8			$43.67	$55.78	$67.88	
Operating Engineer						
Crane with boom & jib or leads 120' or longer *comment* Double time after 12 hours M-F	EN-324-A120	6/12/2014	$57.11	$74.62	$92.13	X X H H D D D D Y
Crane with boom & jib or leads 140' or longer Work in excess of 12 per day M-F shall be paid at double time.	EN-324-A140	6/12/2014	$57.93	$75.85	$93.77	X X H H D D D D Y
Crane with boom & jib or leads 220' or longer Work in excess of 12 per day M-F shall be paid at double time.	EN-324-A220	6/12/2014	$58.23	$76.30	$94.37	X X H H D D D D Y
Crane with boom & jib or leads 300' or longer Work in excess of 12 per day M-F shall be paid at double time.	EN-324-A300	6/12/2014	$59.73	$78.55	$97.37	X X H H D D D D Y

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Crane with boom & jib or leads 400' or longer	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-A400	6/12/2014	$61.23	$80.80	$100.37	X X H H D D D D Y
Compressor or welding machine	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-CW	6/12/2014	$46.26	$58.35	$70.43	X X H H D D D D Y
Forklift, lull, extend-a-boom forklift	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-FL	6/12/2014	$53.57	$69.31	$85.05	X X H H D D D D Y
Fireman or oiler	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-FO	6/12/2014	$45.23	$56.80	$68.37	X X H H D D D D Y
Regular crane, job mechanic, concrete pump with boom	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-RC	6/12/2014	$56.25	$73.33	$90.41	X X H H D D D D Y
Regular engineer, hydro-excavator, remote controlled concrete breaker	Work in excess of 12 per day M-F shall be paid at double time.	EN-324-RE	6/12/2014	$55.28	$71.88	$88.47	X X H H D D D D Y

Apprentice Rates:

0-999 hours	$44.32	$55.94	$67.55
1,000-1,999 hours	$45.99	$58.45	$70.89
2,000-2,999 hours	$47.64	$60.92	$74.19
3,000-3,999 hours	$49.30	$63.41	$77.51
4,000-4,999 hours	$50.96	$65.90	$80.83
5,000-5,999 hours	$52.62	$68.39	$84.15

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Operating Engineer - DIVER							
Diver/Wet Tender/Tender/Rov Pilot/Rov Tender		GLF D	4/2/2014	$52.80	$79.20	$105.60	H H H H H H H D N
Operating Engineer - Marine Construction							
Diver/Wet Tender, Engineer (hydraulic dredge)		GLF-1	2/12/2014	$65.00	$84.85	$104.70	X X H H H H H D Y
	Make up day allowed						
	Subdivision of county all Great Lakes, islands therein, & connecting & tributary waters						
Crane/Backhoe Operator, 70 ton or over Tug Operator, Mechanic/Welder, Assistant Engineer (hydraulic dredge), Leverman (hydraulic dredge), Diver Tender		GLF-2	2/12/2014	$63.50	$82.60	$101.70	X X H H H H H D Y
	Holiday pay = $120.80 per hour, wages &						
	Make up day allowed						
	Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters						
Friction, Lattice Boom or Crane License Certification		GLF-2B	2/12/2014	$64.50	$84.10	$103.70	X X H H H H H D Y
	Holiday pay = $123.30						
	Make up day allowed						
	Subdivision of county All Great Lakes, islands, therein, & connecting & tributary waters						
Deck Equipment Operator, Machineryman, Maintenance of Crane (over 50 ton capacity) or Backhoe (115,000 lbs or more), Tug/Launch Operator, Loader, Dozer on Barge, Deck Machinery		GLF-3	2/12/2014	$59.30	$76.30	$93.30	X X H H H H H D Y
	Holiday pay = $110.30 per hour, wages &						
	Make up day allowed						
	Subdivision of county All Great Lakes, islands therein, & connecting & tributary waters						

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Deck Equipment Operator, (Machineryman/Fireman), (4 equipment units or more), Off Road Trucks, Deck Hand, Tug Engineer, & Crane Maintenance 50 ton capacity and under or Backhoe 115,000 lbs or less, Assistant Tug Operator		GLF-4	2/12/2014	$53.60	$67.75	$81.90	X X H H H H H D Y
Holiday pay = $96.05 per hour, wages & fringes *Make up day allowed*							
Subdivision of county	All Great Lakes, islands therein, & connecting & tributary waters						

Operating Engineer Steel Work

Forklift, 1 Drum Hoist *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-ef	9/5/2014	$58.16	$76.37	$94.58	H H D H H H D D Y
Crane w/ 120' boom or longer *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW120	9/5/2014	$60.86	$80.42	$99.98	H H D H H H D D Y
Crane w/ 120' boom or longer w/ Oiler *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW120-OY	9/5/2014	$61.86	$81.92	$101.98	H H D H H H D
Crane w/ 140' boom or longer *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW140	9/5/2014	$62.04	$82.19	$102.34	H H D H H H D D Y
Crane w/ 140' boom or longer W/ Oiler *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW140-OY	9/5/2014	$63.04	$83.69	$104.34	H H D H H H D
Boom & Jib 220' or longer *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW220	9/5/2014	$62.31	$82.60	$102.88	H H D H H H D D Y
Crane w/ 220' boom or longer w/ Oiler *Make up day allowed comment* 4 10s allowed M-Th with Friday makeup day because of bad weather		EN-324-SW220-OY	9/5/2014	$63.31	$84.10	$104.88	H H D H H H D

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Boom & Jib 300' or longer	EN-324-SW300	9/5/2014	$63.81	$84.85	$105.88	H H D H H H D D Y
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Crane w/ 300' boom or longer w/ Oiler	EN-324-SW300-OY	9/5/2014	$64.81	$86.35	$107.88	H H D H H H D D
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Boom & Jib 400' or longer	EN-324-SW400	9/5/2014	$65.31	$87.10	$108.88	H H D H H H D D Y
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Crane w/ 400' boom or longer w/ Oiler	EN-324-SW400-OY	9/5/2014	$66.31	$88.60	$110.88	H H D H H H D D
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Crane Operator, Job Mechanic, 3 Drum Hoist & Excavator	EN-324-SWCO	9/5/2014	$60.50	$79.88	$99.26	H H D H H H D D Y
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Apprentice Rates:						
0-999 hours			$47.87	$61.43	$75.00	
1,000-1,999 hours			$49.81	$64.35	$78.88	
2,000-2,999 hours			$51.74	$67.24	$82.74	
3,000-3,999 hours			$53.68	$70.15	$86.62	
4,000-4,999 hours			$55.62	$73.07	$90.50	
5,000 hours			$57.56	$75.97	$94.38	
Crane Operator w/ Oiler	EN-324-SWCO-OY	9/5/2014	$61.50	$81.38	$101.26	H H D H H H D D
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						
Compressor or Welder Operator	EN-324-SWCW	9/5/2014	$53.15	$68.86	$84.56	H H D H H H D D Y
Make up day allowed comment						
4 10s allowed M-Th with Friday makeup day because of bad weather						

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County: Wayne

Official Rate Schedule

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Hoisting Operator, 2 Drum Hoist, & Rubber Tire Backhoe		EN-324-SWHO	9/5/2014	$59.86	$78.92	$97.98	H H D H H H D D Y
Make up day allowed comment							
4 10s allowed M-Th with Friday makeup day because of bad weather							
Oiler		EN-324-SWO	9/5/2014	$51.64	$66.59	$81.54	H H D H H H D D Y
Make up day allowed comment							
4 10s allowed M-Th with Friday makeup day because of bad weather							
Tower Crane & Derrick where work is 50' or more above first level	D	EN-324-SWTD50	9/5/2014	$61.59	$81.52	$101.44	H H D H H H D Y
Make up day allowed comment							
4 10s allowed M-Th with Friday makeup day because of bad weather							
Tower Crane & Derrick 50' or more w/ Oiler where work station is 50' or more above first	D	EN-324-SWTD50-O	9/5/2014	$62.59	$83.02	$103.44	H H D H H H D Y
Make up day allowed comment							
4 10s allowed M-Th with Friday makeup day because of bad weather							

Operating Engineer Underground

Class I Equipment	EN-324A1-UC1	10/14/2014	$51.74	$66.98	$82.22	H H H H H H H D Y
Apprentice Rates:						
0-999 hours			$41.79	$52.45	$63.12	
1,000-1,999 hours			$43.32	$54.75	$66.18	
2,000-2,999 hours			$44.84	$57.03	$69.22	
3,000-3,999 hours			$46.36	$59.31	$72.26	
4,000-4,999 hours			$47.89	$61.61	$75.32	
5,000-5,999 hours			$49.41	$63.89	$78.36	
Class II Equipment	EN-324A1-UC2	10/14/2014	$47.01	$59.89	$72.76	H H H H H H H D Y
Class III Equipment	EN-324A1-UC3	10/14/2014	$46.28	$58.79	$71.30	H H H H H H H D Y

Official Request #: 225
Requestor: Wayne State University
Project Description: Scott Hall Penthouse Mechanical Room - Roof Replacement
Project Number: 612-256214
County: Wayne

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class IV Equipment		EN-324A1-UC4	10/14/2014	$45.71	$57.94	$70.16	H H H H H H H D Y
Master Mechanic		EN-324A1-UMM	10/14/2014	$51.99	$67.81	$83.63	H H H H H H H D Y
Painter							
Painter (8 hours of repaint work performed on Sunday shall be paid time & one half rate)		PT-22-P	10/8/2014	$42.82	$55.63	$68.43	H H D H D D D D Y
Four 10s allowed Monday-Thursday with Friday makeup day if job down due to weather, holiday or other conditions beyond the control of the employer.							
Make up day allowed comment							
Fridays for bad weather or holidays							
	Apprentice Rates:						
	First 6 months			$30.02	$36.43	$42.83	
	Second 6 months			$33.86	$42.19	$50.51	
	Third 6 months			$35.14	$44.11	$53.07	
	Fourth 6 months			$36.42	$46.03	$55.63	
	Fifth 6 months			$37.70	$47.95	$58.19	
	Final 6 months			$38.98	$49.87	$60.75	
Pipe and Manhole Rehab							
General Laborer for rehab work or normal cleaning and cctv work-top man, scaffold man, CCTV assistant, jetter-vac assistant		TM247	10/15/2012	$27.20	$36.70		H H H H H H H H N
Tap cutter/CCTV Tech/Grout Equipment Operator: unit driver and operator of CCTV; grouting equipment and tap cutting equipment		TM247-2	10/15/2012	$31.70	$43.45		H H H H H H H H N

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
CCTV Technician/Combo Unit Operator: unit driver and operator of cctv unit or combo unit in connection with normal cleaning and televising work		TM247-3	10/15/2012	$30.45	$41.57		H H H H H H H H N
Boiler Operator: unit driver and operator of steam/water heater units and all ancillary equipment associated		TM247-4	10/15/2012	$32.20	$44.20		H H H H H H H H N
Combo Unit driver & Jetter-Vac Operator		TM247-5	10/15/2012	$32.20	$44.20		H H H H H H H H N
Pipe Bursting & Slip-lining Equipment Operator		TM247-6	10/15/2012	$33.20	$45.70		H H H H H H H H N
Pipefitter							
Pipefitter		PF-636	6/30/2014	$66.73	$87.93	$105.13	H H D H D D D D Y

comment

Four 10s allowed during the week preceding, following and/or the week of a holiday.

Apprentice Rates:			
1st & 2nd periods	$26.93	$35.28	$42.28
3rd period	$28.93	$38.28	$46.28
4th period	$30.18	$40.16	$48.78
5th period	$31.43	$42.03	$51.28
6th period	$32.68	$43.90	$53.78
7th period	$33.93	$45.78	$56.28
8th period	$34.93	$47.28	$58.28
9th period	$35.93	$48.78	$60.28
10th period	$37.36	$50.92	$63.14

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Plasterer							
Plasterer		BR1P	11/1/2012	$45.04	$67.56	$90.08	H H H H H H H D N
Make up day allowed comment							
Saturday							
	Apprentice Rates:						
	1st 6 months			$32.11	$48.17	$64.22	
	2nd 6 months			$33.40	$50.10	$66.80	
	3rd 6 months			$34.69	$52.04	$69.38	
	4th 6 months			$37.28	$55.92	$74.56	
	5th 6 months			$39.87	$59.81	$79.74	
	6th 6 months			$42.45	$63.68	$84.90	
Plasterer		PL67	9/8/2010	$44.72	$60.11	$75.50	H H H X D D D D N
	Apprentice Rates:						
	1st 6 months			$29.33	$37.02	$44.72	
	2nd 6 months			$30.87	$39.34	$47.80	
	3rd 6 months			$32.41	$41.64	$50.88	
	4th 6 months			$35.49	$46.26	$57.04	
	5th 6 months			$38.56	$51.16	$63.76	
	6th 6 months			$41.64	$55.49	$69.34	

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Plumber						
Plumber	PL-98	7/18/2013	$64.45	$84.87	$101.29	H H D H D D D D Y
comment						
4 tens allowed M-Th or T-F; OT of time and one half required on 11th & 12th hour of any ten hour days						
Apprentice Rates:						
Period 1			$19.93	$26.43	$32.93	
Period 2			$23.90	$31.40	$38.90	
Period 3			$30.60	$39.19	$47.77	
Period 4			$31.23	$40.13	$49.03	
Period 5			$32.39	$41.87	$51.35	
Period 6			$33.54	$43.59	$53.65	
Period 7			$34.69	$45.32	$55.95	
Period 8			$35.86	$47.07	$58.29	
Period 9			$37.01	$48.80	$60.59	
Period 10			$38.16	$50.53	$62.89	
Roofer						
Commercial Roofer Straight time is not to exceed ten (10) hours per day or forty (40) hours per week.	RO-149-WOM	8/18/2008	$48.46	$62.29	$76.62	H H D H H H D D N
Make up day allowed						
Apprentice Rates:						
Apprentice 1			$32.62	$39.86	$48.04	
Apprentice 2			$36.80	$44.80	$53.30	
Apprentice 3			$38.22	$46.93	$56.14	
Apprentice 4			$39.25	$48.48	$58.20	
Apprentice 5			$40.47	$50.30	$60.64	
Apprentice 6			$41.87	$52.40	$63.44	
Sewer Relining						
Class I-Operator of audio visual CCTV system including remote in-ground cutter and other equipment used in conjunction with CCTV	SR-I	11/3/2014	$42.76	$57.75	$72.74	H H H H H H H D N

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Class II-Operator of hot water heaters and circulation system; water jetters; and vacuum and mechanical debris removal systems and those assisting.		SR-II	11/3/2014	$41.23	$55.46	$69.68	H H H H H H H D N
Sheet Metal Worker							
Sheet Metal Worker A 4 10 schedule may be worked, 4 consecutive days Monday thru Friday.		SHM-80	9/9/2014	$61.83	$78.74	$95.65	H H D X H H H D Y
	Apprentice Rates:						
	1st & 2nd Periods Indentured after 6-1-11			$39.18	$46.79	$54.40	
	3rd & 4th Periods Indentured after 6-1-11			$40.88	$49.34	$57.80	
	5th & 6th Periods Indentured after 6-1-11			$42.56	$51.86	$61.16	
	7th & 8th Periods Indentured after 6-1-11			$44.25	$54.40	$64.54	
	9th & 10th Periods Indentured before 6-1-11			$51.92	$64.44	$76.96	
Siding and decking		SHM-80-SD	1/13/2014	$42.07	$54.28	$66.48	H H H H H H H D Y

Make up day allowed Official Request #: 225

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Sprinkler Fitter							
Sprinkler Fitter		SP 704	12/19/2014	$64.92	$86.15	$107.38	H H D H D D D D Y
4 ten hour days allowed Monday-Friday Double time pay due after 12 hours worked M-F							
	Apprentice Rates:						
	1st Period			$28.29	$36.78	$45.27	
	2nd Period			$41.57	$51.12	$60.68	
	3rd Period			$43.69	$54.30	$64.92	
	4th Period			$45.81	$57.48	$69.16	
	5th Period			$47.94	$60.68	$73.42	
	6th Period			$50.06	$63.86	$77.66	
	7th Period			$52.18	$67.04	$81.90	
	8th Period			$54.30	$70.22	$86.14	
	9th Period			$56.43	$73.42	$90.40	
	10th Period			$58.55	$76.60	$94.64	
Terrazzo							
Terrazzo Finisher		BR1-TRF	10/17/2014	$43.97	$55.03	$66.08	H H D H D D D D Y
A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.							
	Apprentice Rates:						
	Level 1			$19.04	$25.12	$31.20	
	Level 2			$20.24	$26.92	$33.60	
	Level 3			$27.01	$33.96	$40.90	
	Level 4			$28.47	$36.14	$43.82	
	Level 5			$29.99	$37.84	$45.70	
	Level 6			$31.61	$39.86	$48.10	
	Level 7			$33.30	$41.59	$49.87	
	Level 8			$34.79	$43.48	$52.17	

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Terrazzo Worker	A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.	BR1-TRW	10/17/2014	$49.73	$63.67	$77.60	H H D H D D D D Y
	Apprentice Rates:						
	Level 1			$25.14	$32.65	$40.15	
	Level 2			$28.20	$36.49	$44.78	
	Level 3			$33.41	$41.97	$50.53	
	Level 4			$36.15	$45.66	$55.17	
	Level 5			$38.42	$48.17	$57.92	
	Level 6			$42.07	$53.56	$65.05	
	Level 7			$42.74	$54.38	$66.02	
	Level 8			$43.67	$55.78	$67.88	
Tile							
Tile Finisher	A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.	BR1-TF	10/17/2014	$43.50	$54.32	$65.14	H H D H D D D D Y
	Apprentice Rates:						
	Level 1			$19.04	$25.12	$31.20	
	Level 2			$20.24	$26.92	$33.60	
	Level 3			$27.01	$33.96	$40.90	
	Level 4			$28.47	$36.14	$43.82	
	Level 5			$29.99	$37.84	$45.70	
	Level 6			$31.61	$39.86	$48.10	
	Level 7			$33.30	$41.59	$49.87	
	Level 8			$34.79	$43.48	$52.17	

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Tile Layer	A 4 ten workweek may be worked Monday thru Thursday or Tuesday thru Friday.	BR1-TL	10/17/2014	$49.68	$63.59	$77.50	H H D H D D D Y
	Apprentice Rates:						
	Level 1			$25.14	$32.65	$40.15	
	Level 2			$28.20	$36.49	$44.78	
	Level 3			$33.41	$41.97	$50.53	
	Level 4			$36.15	$45.66	$55.17	
	Level 5			$38.42	$48.17	$57.92	
	Level 6			$42.07	$53.56	$65.05	
	Level 7			$42.74	$54.38	$66.02	
	Level 8			$43.67	$55.78	$67.88	
Truck Driver							
	on all trucks of 8 cubic yard capacity or less (except dump trucks of 8 cubic yard capacity or over, tandem axle trucks, transit mix and semis, euclid type equipment, double bottoms and low boys)	TM-RB1	8/8/2013	$41.92	$37.85		H H H H H H H Y
	of all trucks of 8 cubic yard capacity or over	TM-RB1A	8/8/2013	$41.30	$38.00		H H H H H H H Y
	on euclid type equipment	TM-RB1B	8/8/2013	$41.45	$38.23		H H H H H H H Y

Make up day allowed Official Request #: 225

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Classification Name / Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Class I						
Construction Laborer	LAUC-Z1-1	9/5/2013	$37.72	$48.43	$59.14	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$32.94	$41.26	$49.58	
1,001-2,000 work hours			$33.90	$42.70	$51.50	
2,001-3,000 work hours			$34.85	$44.13	$53.40	
3,001-4,000 work hours			$36.76	$46.99	$57.22	
Underground Laborer Open Cut, Class II						
Mortar and material mixer, concrete form man, signal man, well point man, manhole, headwall and catch basin builder, guard rail builders, headwall, seawall, breakwall, dock builder and fence erector.	LAUC-Z1-2	10/25/2013	$37.83	$48.60	$59.36	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$33.02	$41.38	$49.74	
1,001-2,000 work hours			$33.98	$42.82	$51.66	
2,001-3,000 work hours			$34.95	$44.27	$53.60	
3,001-4,000 work hours			$36.87	$47.15	$57.44	
Underground Laborer Open Cut, Class III						
Air, gasoline and electric tool operator, vibrator operator, drillers, pump man, tar kettle operator, bracers, rodder, reinforced steel or mesh man (e.g. wire mesh, steel mats, dowel bars, etc.), cement finisher, welder, pipe jacking and boring man, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger man, and directional boring man.	LAUC-Z1-3	9/5/2013	$37.88	$48.67	$59.46	X X X X X X X D Y
Apprentice Rates:						
0-1,000 work hours			$33.06	$41.44	$49.82	
1,001-2,000 work hours			$34.02	$42.88	$51.74	
2,001-3,000 work hours			$34.99	$44.33	$53.68	
3,001-4,000 work hours			$36.92	$47.23	$57.54	

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Class IV							
	Trench or excavating grade man.	LAUC-Z1-4	9/5/2013	$37.96	$48.79	$59.62	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.12	$41.53	$49.94	
	1,001-2,000 work hours			$34.09	$42.99	$51.88	
	2,001-3,000 work hours			$35.06	$44.44	$53.82	
	3,001-4,000 work hours			$36.99	$47.33	$57.68	
Underground Laborer Open Cut, Class V							
	Pipe Layer	LAUC-Z1-5	9/5/2013	$38.02	$48.88	$59.74	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$33.16	$41.59	$50.02	
	1,001-2,000 work hours			$34.14	$43.06	$51.98	
	2,001-3,000 work hours			$35.11	$44.51	$53.92	
	3,001-4,000 work hours			$37.05	$47.43	$57.80	
Underground Laborer Open Cut, Class VI							
	Grouting man, top man assistant, audio visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances.	LAUC-Z1-6	9/5/2013	$35.47	$45.06	$54.64	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$31.25	$38.73	$46.20	
	1,001-2,000 work hours			$32.10	$40.00	$47.90	
	2,001-3,000 work hours			$32.94	$41.26	$49.58	
	3,001-4,000 work hours			$34.63	$43.79	$52.96	

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Classification Name	Description		Last Updated	Straight Hourly	Time and a Half	Double Time	Overtime Provision
Underground Laborer Open Cut, Class VII							
	Restoration laborer, seeding, sodding, planting, cutting, mulching and topsoil grading and the restoration of property such as replacing mail boxes, wood chips, planter boxes, flagstones etc.	LAUC-Z1-7	9/5/2013	$32.09	$39.99	$47.88	X X X X X X X D Y
	Apprentice Rates:						
	0-1,000 work hours			$28.72	$34.93	$41.14	
	1,001-2,000 work hours			$29.39	$35.93	$42.48	
	2,001-3,000 work hours			$30.07	$36.95	$43.84	
	3,001-4,000 work hours			$31.42	$38.98	$46.54	

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WAYNE STATE UNIVERSITY
PAYMENT PACKAGE DOCUMENT REQUIREMENTS *(Revised 5-06-2011)*:

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

AIA DOCUMENT G702 & G703 – (or facsimile thereof) Payment Application Checklist:

- o Correct Project Name – Found on your contract.
- o Correct Project Number – Found on your contract.
- o Purchase Order Number – Required prior to beginning work.
- o Correct Application Number. (i.e. 1, 2, 3, etc.)
- o Correct Period Reporting Dates – Applications support docs must be sequential and within application range.
- o Approved & Executed Change Orders must be listed. (Cannot invoice for unapproved changes.)
- o Schedule of values percentages and amounts match the approved Pencil Copy Review – Signed by the Architect, Contractor, and University Project Manager.
- o Correct Dates – Back dating not accepted.
- o Signed and Notarized.

SWORN STATEMENT – Checklist:

- o List all contractors, sub-contractors, suppliers… ≥ $1000.00
- o Contractor's Sworn Statement amounts must coincide with Column "C" of the schedule of values document. Any unassigned or uncommitted value of contract shall be shown on an entry "Contractor – Unassigned" followed by the amount necessary to cause the „contracted to date" column of the sworn statement to equate with the schedule of value column totals.
- o Current Date – Back dating not accepted.
- o Signed and Notarized.
  A Sworn Statement is required from every Sub Contractor on the job with a material purchase or sub-subcontract of $1,000 or more. (all the way down to the bottom tier)

DEPT. of LABOR FORM WH-347 – Certified Payroll Checklist:
(Union and Non-Union)

- o For every contractor & sub-contractors work, for each week within the application for payment reporting period. (For every „boot" on the floor representing the weeks within the application period)
- o Wayne State University Project Number – Found on your contract.
- o List ALL workers who have worked on the project site.
- o Make sure workers addresses are listed.
- o NO Social Security Numbers, if present they MUST be blackened out or listed in XXX-XX-1234 format.
- o 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. (Refer to Section 410 of Bid Front End Documents.)
  http://www.cis.state.mi.us/bwuc/bsr/wh/revised_rates/whc_tbl.htm
- o Apprenticeship program status – proof of enrolled program and current completion required for any workers paid at Apprenticeship rates.
- o Rate of Pay verified against the Prevailing Wage Schedule with an hourly costs breakdown of fringes paid. (Refer to attachment for State of Michigan instructions and example)
- o Authorized signatures on affidavit.

APPLICATION PACKAGE SUPPORTING DOCUMENTATION –
Must accompany all package reporting periods: (Union and Non-Union)

- o Copies of Pay Stubs may be required for each Certified Payroll period reported – (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.)
- o Proof of Ownership for any „Owner Operator" (Sole Proprietor) contractors not claiming their time under prevailing wage act. – (Must list their hours and dates worked on the WH-347 Form and enter EXEMPT on the income brackets.). The Owner Operator must provide copies of "DBA" registration form confirming status as exempt from prevailing wage requirements.

- o Proof of Stored Materials – (Detailed Bill of Sale, certificate of insurance or endorsement page specifically insuring the stored materials, pictures, when large value. WSU reserves the right to on site verification of material. Stored material must be separated from ordinary inventory and labeled for WSU project.
- o Partial Unconditional Waivers – Must release the accumulated amount paid for work and be immediately provided, or provided with the subsequent application for payment. Waivers shall be provided for contractors, sub-contractors, and suppliers listed on the Sworn Statements. (This is required at all tiers)
- o Full Unconditional Waivers – Prime Contractor must deliver fully executed Full Unconditional Waiver upon receipt of final payment. Full Unconditional waivers may be required of sub-contractors and suppliers in advance of final Contractor payment on bonded projects This requirement shall be determined on a project-by-project basis. Full Unconditional waivers shall be required in advance of or at the time of final payment on all non-bonded projects from all subcontractors and suppliers listed on Sworn Statements, or who have provided a notice of furnishing.
- o Partial Conditional Waivers – The Contractor shall provide a Partial Conditional Waivers covering the entire amount of the application for payment. For non-bonded Projects – A partial conditional waiver from all subcontractors must accompany any application for payment within which a subcontractor draw is included.
- o Sworn Statements – Required for all Sub Contractors, and Sub-subcontractors (etc.) with any contracts or purchases exceeding $1,000.

FINAL PAYMENT EXCHANGE – Checklist:

- o Clear and concise As-Built drawings.
- o Operation and Maintenance Manuals.
- o Required training must be completed (if applicable).
- o Warranty of work in accordance with project documents.
- o Certificate of Substantial Completion.
- o Full Unconditional Waiver

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

Revised 5-6-2011

Contractor Performance Evaluation

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

Contractor Evaluation Sheet

Contractor Name : _____ Project Name: _____

Contractor's PM:_____ PM Name:_____

Superintendent:_____ Project Number:_____ PO#:_____

Designer:_____

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

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

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

Evaluator

Signature_____ Date:_____

Title:

Name:

Please Print

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.

WAYNE STATE UNIVERSITY

AGREEMENT BETWEEN THE UNIVERSITY AND CONTRACTOR FOR CONSTRUCTION SERVICES (rev 6-2013)

Executed as of the _____ day of _____, 2014 by and between:

The Board of Governors, Wayne State University
Detroit, Michigan 48202
(The University)

and

CONTRACTOR'S_NAME
CONTRACTOR'S_ADDRESS

regarding

Scott Hall Roof Replacement
540 E. Canfield
WSU Project No. 612-256214

In consideration of the mutual covenants and conditions contained herein, the Parties agree as follows:

Article 1 - Scope of Work

1.1 This Agreement provides for the removal and replacement of the upper roof above the penthouse mechanical room, at the University's Scott Hall, School of Medicine. The Scott Hall Building is located at 540 E. Canfield, Detroit, MI 48201. The documents listed in Article 4 fully define the scope of work.

1.2 The Contractor shall furnish all the labor, materials, equipment, services, and supervision to perform all the work shown on the drawings and specifications listed in Article 18, including any addenda issued during the bid phase, and approved change orders issued during the construction phase.

1.3 The Contractor shall notify the University in writing within five (5) calendar days when the Contractor discovers any condition that will affect the contract amount or the completion date.

Article 2 - Time of Completion

2.1 The work to be performed under this Agreement shall commence upon the Contractor's receipt of a fully-executed Agreement, and substantial completion shall be achieved by **June 30, 2015**.

Article 3 - The Contract Sum

3.1 The University shall pay the Contractor a "lump sum/not-to-exceed (pick one)" amount of $$$$$$ ("Amount in words 00" /100 dollars) for the performance of all work associated with the Contractor's Base Bid "and Alternates (List)".

3.2 The University may, at its sole discretion, during the life of the contract, award the following alternates at the amounts indicated: "(If section 3.2 is not used, delete all text and enter_Deleted"

Description	Amount
Alternate #1	
Alternate #2	
Alternate #3	

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

Work Item	Unit Price
1.	
2.	
3.	

Article 4 - The Contract Documents

4.1 The Contract Documents shall consist of this Agreement, the drawings and specifications as listed in Article 18, the General Conditions of the Contract for Construction as defined by AIA Document A201 1970 Edition, except as otherwise provided herein, and Wayne State University's Supplementary General Conditions 1997 Edition.

4.2 For any inconsistencies found among or between these Contract Documents, the language contained in this Agreement shall prevail over all other documents and the Supplementary General Conditions shall prevail over the General Conditions. In the event of a conflict between the Drawings and Specifications, the requirement for the higher quantity and/or higher quality shall prevail.

Article 5 – Examination of Premises

5.1 The Contractor acknowledges that the University provided the opportunity for a thorough examination of the project site and its surroundings and that the Contractor knows of no conditions preventing accomplishment

of the full scope of work within the time and for the amount specified in this Agreement.

5.2 The University will deny all claims for additional time and/or cost for conditions that could have been reasonably discovered during such an examination.

Article 6 - The Architect/Engineer

6.1 The Architect/Engineer for this project is:
"(List the Architect and Engineer separately if appropriate)"

NSA Architects, Engineers, Planners
23761 Research Drive
Farmington Hills, MI 48335
(Architect Phone No / Fax No)

6.2 The University will appoint a Project Manager who will be the University's point of contact for all matters of contract administration including, but not limited to, interpretation of documents, defining the scope of work, approving work schedules, and approving contract payments.

Article 7 - Additional Work

7.1 The University reserves the right to let other Agreements in connection with this work. The Contractor will afford other Contractors or the University's own workforce reasonable opportunity for the delivery and storage of their material and for the performance of their work and shall properly connect and coordinate its work with theirs.

7.2 If any part of the Contractor's work depends for proper execution or results upon the work of another Contractor or the University's own workforce, the Contractor shall inspect and promptly report to the University's Project Manager any defects in such work that render it unsuitable for such proper execution and results. The Contractor's failure to so inspect and report shall constitute an acceptance of the work of others as fit and proper for reception of the Contractor's work and as a waiver of any claim or defense against the University or other contractor which relies in whole or in part upon the contention that such work was unsuitable for proper execution and resolution.

Article 8 – Dispute Resolution

8.1 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 Wayne State 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. Specifically, all references to Arbitration contained in the General Conditions are superceded by this Article.

8.2 In any claim or dispute by the Contractor against the University, which cannot be resolved by negotiation, the Contractor shall submit the dispute in writing for an administrative decision by the University's Vice President for Finance and Administration, within 30 days of the end of negotiations. Any decision of the Vice President shall be made within 45 days of receipt from the Contractor and is final unless it is challenged by the Contractor by filing a lawsuit in the Court of Claims of the State of Michigan within one year of the issuance of the decision. The Contractor agrees that appeal to the Vice President is a condition precedent to filing suit in the Michigan Court of Claims.

8.3 For purposes of this section, the "end of negotiations" shall be deemed to have occurred when:

8.3.1 Either party informs the other that pursuant to this section, negotiations are at an impasse; or

8.3.2 The Contractor submits the dispute in writing to the Vice President.

8.4 Unless otherwise agreed by the University in writing, and notwithstanding any other rights or obligations of either of the parties under any Contract Documents or Agreement, the Contractor shall continue with the performance of its services and duties during the pendency of any negotiations or proceedings to resolve any claim or dispute, and the University shall continue to make payments in accordance with the Contract Documents; however, the University shall not be required or obligated to make payments on or against any such claims or disputes during the pendency of any proceeding to resolve such claims or disputes.

Article 9 - Termination for Convenience

9.1 Upon thirty days written notice to the Contractor, the University may, without cause and without prejudice to any other right or remedy of the University, elect to terminate the contract. In such case, the Contractor shall only be paid (without duplication of any items), using a Close out Change Order, for the following:

9.1.1 For completed and acceptable work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;

9.1.2 For expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted work, including fair and reasonable sums for overhead and profit on such expenses.

9.2 The Contractor shall not be paid on account of loss of anticipated profits or revenue, delay or disruption, or other economic loss arising out of or resulting from such termination. For purposes of this section, "fair and reasonable sums for overhead and profit" shall be determined by reference to Michigan law, without reference to principles used for such determinations in arbitration.

Article 10 - Progress Payments

10.1 On or before the 20th day of each month, the Contractor shall submit a written application for payment, using form AIA G702, to the Architect/Engineer and the University's Project Manager for review. The Architect/Engineer shall have ten (10) calendar days to accept or reject the Contractor's application for payment. Acceptable applications for payment shall then be submitted to the University for Payment of authorized amount(s) within thirty (30) calendar days of receipt by the University's Project Manager.

10.2 The application for payment shall contain a full schedule of values organized and sorted by subcontractor, by Construction Specifications Institute standard work categories, or in another format acceptable to the University.

10.3 Monthly progress payments shall show the percentage of work installed as of the date of the application, less amount previously installed and the amount due for the application period. The Contractor shall deduct a 10% retainage from the balance due for each progress payment and indicate the net amount due on each application.

10.4 When 50% of the work associated with this Agreement is installed, the Contractor shall not deduct additional retainage from the balance due from the University. When substantial completion is achieved and acknowledged by the Architect/Engineer, the Contractor and the University in writing, the University shall remit to the Contractor all but 2% of the retainage. The remaining 2% shall be retained by the University until the final payment is authorized and remitted to the Contractor.

Article 11 - Acceptance and Final Payments

11.1 Final payment shall be due thirty (30) days after the completion of the work, including all punch list items, provided the work is fully completed and the Agreement fully performed.

11.2 Upon receipt of written notice that the work is ready for final inspection and acceptance, the Architect/Engineer shall promptly inspect the work. When the Architect/Engineer concludes that the work is acceptable and the Agreement to be fully performed, the Architect/Engineer shall promptly issue a final certificate with an original signature, stating that the work provided is complete and acceptable and that the entire remaining balance found to be due the Contractor shall be remitted by the University once the final

application for payment is received.

11.3 If, after the work has been substantially completed, full completion thereof is materially delayed through no fault of the Contractor, and the Architect/Engineer so certifies, the University shall, upon certificate of the Architect/Engineer, and without terminating the Contract, make payments of the balance due for that portion of the work fully completed and accepted. Such payments shall be made under the terms and conditions governing final payment, except that it shall not constitute a waiver of claims.

Article 12 - Non-Discrimination

12.1 The Contractor agrees that it will not discriminate against any employee or applicant for employment, to be employed in the performance of this Agreement, with respect to hire, tenure, terms, conditions or privileges of employment or any matter directly or indirectly related to employment, because of race, color, religion, sex, age, national origin, or ancestry. Breach of this covenant may be regarded as material breach of this Agreement.

12.2 The Contractor further agrees that it will, in all subcontracts relating to the performance of the work under this Agreement, provide in its subcontracts that the subcontractor will not discriminate against any employee or applicant for employment, to be employed in the performance of such contract, with respect to hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment because of race, sex, age, color, religion, national origin or ancestry. Breach of this covenant may also be regarded as a material breach of this Agreement.

Article 13 – Laborers and Mechanics

13.1 All laborers and mechanics must be covered by 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.

13.2 The Contractor acknowledges and shall abide by the University's prohibition on use of 1099 independent contractors and owner / operator business entities. 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 Trade Contractor for any tier thereof, and that each worker is covered by workers compensation insurance.

Article 14 - Prevailing Wages

14.1 The Contractor and each subcontractor shall pay to each class of mechanics and laborers not less than the wage and fringe benefit rates prevailing in the Detroit Metropolitan Area, as determined by the United States Department of Labor. The Contractor shall 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.

14.2 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 employed in connection with this contract. The Contractor and each subcontractor shall make certified payroll records available to the University's representatives upon request.

14.3 If a Contractor or subcontractor fails to pay the prevailing rates of wages and fringe benefits and does not cure such failure within ten (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:

14.3.1 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.

14.3.2 Terminate part or all of this Agreement or any sub-agreement and proceed to complete the

Agreement or sub-agreement 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.

14.4 The Contractor shall include terms identical or substantially similar to this section in any Agreement or sub-agreement pertaining to the project.

Article 15 - Save Harmless (Revised 2-2015)

15.1 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, the Architect and Architect's Consultants, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or 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 , the Architect or the Architect's consultants 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.

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University, the Architect and Architect's Consultants, 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 indemnification described in this Article.

Article 16 - Liquidated Damages

16.1 It is understood and agreed that, if the project is not completed within the time specified in the Agreement plus any extension of time allowed pursuant thereto, the actual damages sustained by the University because of any such delay will be uncertain and difficult to ascertain, and it is agreed that the reasonable foreseeable value of the use of said project by the University would be the sum of **$1,000.00, One Thousand Dollars** per day. Therefore, the Contractor shall pay as liquidated damages to the University the sum of **$1,000.00, One Thousand Dollars** per day for each day's delay in substantially completing said project beyond the time specified in this Agreement and any extensions of time allowed thereunder.

"ENTER N/A FOR ABOVE AMOUNT IF NO LIQUIDATED DAMAGES"

Article 17- Interpretation

17.1 This Agreement shall be interpreted and construed according to the laws of the State of Michigan.

17.2 If one part of this Agreement is found to be void by legal or legislative action, the remainder of the contract remains in full effect.

Article 18 - Drawings and Specifications

18.1 The Technical Specifications and the Project Manual dated **March 4, 2015 ,** and the following List of Drawings represents the scope of work as defined in the Contract Documents from Article 4.

DRAWINGS

Drawing No.:	Description	dated
T-1.0	DRAWING LIST / LOCATION PLAN	2-24-15
A-1.1	ROOF PLAN	
A-1.2	ELEVATION AND SECTION	
A-2.1	DETAILS	
A-2.2	DETAILS	

IN WITNESS WHEREOF the parties to these presents have hereunto set their hands as of the day and year first written above.

Signed, sealed and delivered
in the presence of:

CONTRACTOR'S NAME GOES HERE

By_____
signature

_____
Please print name here

_____
Date signed

_____
Title

_____
Witness

THE BOARD OF GOVERNORS of
WAYNE STATE UNIVERSITY

By_____
Richard J. Nork, Vice President for
Finance and Facilities

_____
Date signed

Form Contract Approved by OGC 06/13 – LG
File_reference_here

FORM OF GUARANTEE

PROJECT: Scott Hall Roof Replacement

OWNER: BOARD OF GOVERNORS, WAYNE STATE UNIVERSITY

CONTRACTOR: _____

DATE: _____

Know all men by these presents that, in consideration of my (our) having been awarded the Contract or Subcontract for complete furnishing and installation of:

Scott Hall Roof Replacement (**612-256214**)

For: **Board of Governors, Wayne State University**

In conformity with drawings and specifications prepared by Architect or Engineer, **NSA Architects, Engineers, Planners**, and known as the buildings indicated above, I (we) do hereby agree that, should I (we) be notified that the said work has proved faulty, etc., that I (we) will return to the buildings within three (3) working days of the receipt of such notice, and will furnish the necessary labor and material to repair such work to the satisfaction of the Owner and without cost to the Owner.

The Agreement shall remain in full force and effect **for a one year period (DATE TBD)**

WITNESS:

signed:_____
Subcontractor

by:_____

address:_____

city/state/zip:_____

signed:_____
General Contractor

by:_____

(THIS FORM TO BE FILED IN DUPLICATE.)

GENERAL CONDITIONS (Revised 10-2009)

A. Although AIA Document A201 - Twelfth Edition (April 1970) - "General Conditions of the Contract for Construction" is not bound herein, it forms a part of these construction documents.

B. A reference copy of AIA Document A201 - Twelfth Edition (April 1970) - "General Conditions of the Contract for Construction" is on file at the following location:

Wayne State University
Finance & Facilities Management
Procurement & Strategic Sourcing
Academic / Administrative Services Building
5700 Cass Avenue
Detroit Michigan 48202

SUPPLEMENTARY GENERAL CONDITIONS

OF

THE CONTRACT FOR CONSTRUCTION

Facilities Planning & Management - Design & Construction Services

Wayne State University

WSU SUPPLEMENTARY GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

NOTE: The following items related to A.I.A. General Conditions, A.I.A. Document A-201 - Twelfth Edition (April 1970), by specific number being amended to. These items, as amendments, shall have precedence over the article being amended.

ARTICLE 1 - CONTRACT DOCUMENTS

1.1 DEFINITIONS

1.1.5 The Agreement

The Agreement executed by the Contractor and the Owner.

1.2 EXECUTION, CORRELATION, INTENT, AND INTERPRETATIONS

1.2.6 "General Conditions and "Supplementary General Conditions" apply with equal force to all Contractors, Subcontractors work, and extra work required under this Contract.

1.2.7 Precedence of Drawings and Specifications.
The Agreement has precedence over WSU Supplementary General Conditions.

WSU Supplementary General Conditions have precedence over A.I.A. A-201 General Conditions of the Contract.

Specifications have precedence over drawings. Full-size drawings have precedence over scale drawings. Large-scale plans and details have precedence over small-scale plans and details. Figured dimensions have precedence over plans and elevations.

ARTICLE 2 - ARCHITECT

2.1 DEFINITION

2.1.1.1 The term Architect or Architect/Engineer as used in these specifications refers to Facilities Planning and Management - Design Services, and/or Consulting Architect/Engineer.

2.2 ADMINISTRATION OF THE CONTRACT

2.2.16 The Architect will assign Field Representatives to make periodic visits to the project for the purpose of assisting the Architect in carrying out his field responsibilities at the site. The duties, responsibilities and limitations of authority of any such Field Representative shall be as follows:

a. Explain Contract Documents: Assist the Contractor via the Contractor's Superintendent to understand the intent of the Contract Documents.

b. Observations: Conduct on-site observations and spot checks of the work in progress as a basis for determining conformance of the work, material, and equipment with the Contract Documents.

c. Additional Information: Obtain from the Architect, additional details or information, if and when required, at the job site for proper execution of the work.

d. Modifications: Consider and evaluate suggestions or modifications that may be submitted by the Contractor and report them with recommendations to the Architect for final decision.

e. Construction Schedule and Completion: Be alert to the completion, and report same to the Architect. When the construction work has been completed in accordance with the Contract Documents, advise the Architect that the work is ready for general inspection and

acceptance.

f. Job Conferences: Attend and report to the Architect on all required conferences held at the job site.

g. Observe Tests: See that tests which are required by the Contract Documents are actually conducted; observed, record and report to the Architect all details relative to the test procedures; and advise the architect's office in advance of the schedules of tests.

h. Inspection by Others: If inspectors, representing local, state or federal agencies having jurisdiction over the project, visit the job site, accompany such inspectors during their trips through the project, record the outcome of these inspections, and report same to the Architect's office.

i. Shop Drawings: Do not permit the installation of any materials and equipment for which shop drawings are required unless such drawings have been duly approved and issued by the Architect.

j. Contractor's Requisitions for Payment: Review and make recommendations to the Architect for disposition.

k. List of Items for Correction: After substantial completion, make a list of items for correction before final inspection and check each item as it is corrected.

l. Owner's Occupancy of the Building: If the Owner occupies (to any degree) the building prior to actual completion of the work by the Contractor, be especially alert to possibilities of claims for damage to completed work prior to the acceptance of the building.

m. Owner Existing Operation: In the case of additions to or Demolitions of an existing facility, which must be maintained as an operational unit, be alert to conditions on the job site which may have an effect on the Owner's existing operation.

n. Limitations of Authority: Do not become involved in any of the following areas of responsibility unless specific exceptions are established by written instructions issued by the Architect.

aa. Do not authorize deviations from the Contract Documents.

bb. Avoid conducting any test personally.

cc. Do not enter into the area of responsibility of the Contractor's field superintendent.

dd. Do not expedite job for Contractor unless so instructed by the Architect.

ee. Do not advise on or issue directions relative to any aspect of the building technique or sequence unless a specific technique or sequence is called for in the Specifications or by written instructions from the Architect.

ff. Do not approve shop drawings or samples.

gg. Do not authorize or advise the Owner to occupy the Project, in whole or in part, prior to the final acceptance of the building.

hh. Do not issue a Certificate for Payment.

ARTICLE 3 - OWNER

3.5 OWNER'S RIGHT TO DO WORK

3.5.1 The Owner may exercise his right, which is hereby acknowledged by the Contractor, to let independent of the Contract for the work herein specified, any other work on the premises even if of

like character and trades, and the Owner shall not be liable for any damage, loss or expense incurred by the Contractor through the fault of any other Contractor so employed by the Owner. The Contractor acknowledges the necessity of work by others, to be performed at approximately the same time as the work hereunder, and agrees to perform his work in full cooperation with the work of such other trades and/or Contractors, partially or entirely completed, by such other trades and/or Contractors, or by the Owner, when, in the opinion of the Architect, such access or use is necessary for the performance and completion of any portion or all of the work of others or of any work on the site.

3.6 OWNER'S ACCESS AND PARTIAL OCCUPANCY

3.6.1 The Owner shall have access to the work at all times, and at his election, may from time to time (prior to the stipulated contract completion date) occupy any of the units or parts of the project as the work in connection therewith is complete to such a degree as will, in the opinion of the Owner, permit their temporary or permanent use. The Owner will, prior to any such partial occupancy, give notice to the Contractor thereof and such occupancy shall be upon the following terms:

a. Such occupancy shall not constitute an acceptance of work not performed in accordance with the Contract nor shall such occupancy relieve the Contractor of liability to perform any work by the Contract by not complete at the time of occupancy.

b. Except as otherwise provided by an agreement at the time of such partial occupancy, the Contractor shall be relieved of all maintenance costs on units or parts so occupied.

c. The Contractor shall not be responsible for wear and tear or damage resulting from partial occupancy.

d. The Owner shall assume risk of loss with respect to any unit or part so occupied.

e. The Contractor shall, if required by the Owner, furnish heat, light, water, or other such services to the units or parts occupied and the Owner shall make proper remuneration therefore to the Contractor.

3.6.2 The Contractor agrees that the Owner shall have the right, after seven (7) days' written notice to the Contractor, to place and install as much equipment and machinery during the progress of the work as is possible before the completion of the various parts of the work; and further agrees that such placing and installation of equipment shall not in any way evidence the completion of the work or any portion thereof, nor signify the Owner's acceptance of the work or any portion thereof. Should the Owner place or install such equipment and machinery with his own forces he shall be responsible for any damage to work of the Contractor caused by the Owner's work or workmen. Should the Owner have such placement or installation performed by another Contractor, then the Owner shall require said Contractor to be responsible for all such damage caused by his work, his workers, or his subcontractors.

ARTICLE 4 - CONTRACTOR

4.4 LABOR AND MATERIALS

4.4.3 All materials shall be so delivered, stored and handled to prevent the inclusion of foreign materials and the damage of materials by water or breakage. Packaged materials shall be delivered and stored in original packages until ready for use. Packages or materials showing evidence of water or other damage shall be rejected. All materials shall be of the respective qualities specified herein.

4.4.4 The Contractor shall be responsible for the proper care and protection of all his materials, equipment, etc., delivered at the site. Building materials, equipment, etc., may be stored on the premises subject to the approval of the Architect.

4.4.5 To insure timely availability of critical materials in case of national emergency, the Contractor may order his subcontractors to proceed with fabrication of the same earlier than required by normal sequence of construction. In the event storage facilities are not available on the site or at the source of fabrication, the Owner will endeavor to provide such storage space as may be available to care for same. Where this is necessary, the Contractor shall be paid for all stored material on the

Owner's property or on the properties approved by the Owner upon approval of certified invoices. It shall be the Contractor's obligation to pay for all handling costs and damage to this material. The Contractor shall protect this property against damage.

4.6 TAXES

4.6.1 The Bidder shall include in his 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.

4.7 PERMITS, FEES AND NOTICES

4.7.3 The Contractor shall pay highway or DPW fees for damages to sidewalks, streets, or other public property or to any public utilities.

4.7.4 Permits and licenses of a temporary nature necessary for the execution of the work shall be secured and paid for by the Contractor.

4.7.5 **Except for the General Building Permit (which is not required), the Contractor shall secure and pay for all other required permits, including the following:**

Electrical	**-**	**State of Michigan**
Plumbing	**-**	**State of Michigan**
Mechanical	**-**	**State of Michigan**
Elevator	**-**	**City of Detroit**

4.7.6 The Contractor shall secure certificates of inspection and of occupancy that may be required by authorities having jurisdiction over the work. These certificates shall be delivered to the Architect upon completion of the work.

4.9 SUPERINTENDENT

4.9.2 The Contractor shall give sufficient supervision to the work, using his best skill and attention. He shall carefully study and compare all drawings, specifications, and other instructions, and shall at once report to the Architect any error, inconsistency, or omission which he may discover, but he shall not be held responsible for their existence or discovery.

4.9.3 The Contractor's superintendent shall periodically inspect the entire project to make certain that all of the stipulations of all of the articles of the General Conditions are being observed.

4.12 DRAWINGS AND SPECIFICATIONS AT THE SITE

4.12.1.1 Refer to Paragraph 4.12.1, of A.I.A. General Conditions of the Contract for Construction. Modify the last sentence of this paragraph to read:

> "The Drawings, marked to record all changes made during construction, shall be incorporated in the Contractor's 'Informational Package'."

4.12.2 As a basic and interim step for the fulfillment of the "Informational Package", accurate records of all non-structural underground and concealed work shall be kept, including, but not limited to, all piping, conduit, equipment, and drainage and tunnel work. In addition, such records shall be available for review during various steps of the project.

4.13 SHOP DRAWINGS AND SAMPLES

4.13.9 Immediately before and as a condition of substantial completion, the Contractor shall provide the Owner an "Informational Package" and instructional sessions on the operation, maintenance, and service of the facility. The "Informational Package" shall include:

1. One (1) set of transparency (sepia) of the approved shop drawings and descriptive material submitted during construction. Any shop documents unobtainable in sepia shall be supplied in three (3) sets.

2. One (1) set of transparency (sepia) of constructional shop drawings with all installation revisions incorporated to reflect the as-built condition. Examples of constructional shop drawings are dimensioned conduit, piping and ductwork layout drawings.

3. Three (3) sets of instructional manuals on the installation, operation, maintenance and service of equipment and systems, including parts lists.

Examples of Specific Information Required:

1. Electrical

   a. Conduit layout of light, power, and special systems, indicating dimensionally the locations and size of runs; circuit grouping and conductor size and number in conduit runs.
   b. System description and elementary diagrams, connection and interconnection diagrams, and device internal diagrams.

2. Mechanical

   a. Piping and ductwork layout indicating dimensionally the location and size of the runs.

   b. Description and diagrams of control systems.

Following the submittal of the "Informational Package", the Contractor shall schedule and provide, at the Owner's convenience, instructional sessions for Owner's personnel to acquaint them with the operation, maintenance, and service of the system.

3. Elevators

   a. Elementary diagrams and description of sequence of operation of the system control components, connection and interconnection diagrams, and device internal diagrams.

ARTICLE 5 - SUBCONTRACTORS

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.3 Delete Article 5.2.3 in its entirety.

5.2.4 Delete Article 5.2.4 in its entirety.

ARTICLE 7 - MISCELLANEOUS PROVISIONS *(Revised 6-13-2011)*

7.5 PERFORMANCE BOND AND LABOR AND MATERIAL PAYMENT BOND

7.5.1 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.

A. 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 Labor and Material Payment 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 Performance 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.

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

C. The Contractor shall include with his bid evidence of his ability to obtain a Performance Bond in the amount of 100% of the bid amount, and in accordance with the terms and conditions outlined in this section, Such evidence shall be project specific and shall be submitted on a form provided by the Surety or Agent thereof.

7.7 ROYALTIES AND PATENTS

7.7.1 Indemnification and Hold Harmless (***Revised 2-2015***).
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, the Architect and Architect's Consultants, and officers, employees, representatives and agents of each of them, from and against any and all claims or losses arising out of or 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 , the Architect or the Architect's consultants 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.

The Contractor shall also be liable for and hereby agrees to pay, reimburse, fully indemnify and hold the University, the Architect and Architect's Consultants, 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 indemnification described in this Article.

7.9 INTEREST

7.9.1 Delete Article 7.9 in its entirety.

ARTICLE 8 - TIME

8.1 DEFINITIONS

8.1.3 The Date of Substantial Completion of the Work is the Date certified by the Architect when construction of the entire work is sufficiently complete, in accordance with the Contract Documents, so the Owner may occupy the Work for the use for which it is intended. It is the beginning date for the guarantees on all the Project Work.

8.3.5 LIQUIDATED DAMAGES

It is understood that if said Contract is not completed within the time specified in the Contract plus any extension of time thereto, the Contractor shall pay Liquidated Damages to the Owner as set forth in Article 11 of the Agreement between Contractor and Owner for Construction.

ARTICLE 9 - PAYMENT AND COMPLETION

9.3 PROGRESS PAYMENTS

9.3.1 On or before the 20th day of each month, the Contractor shall submit to the Architect on the Owner's Standard Form, a written application for payment showing the proportionate value of the work installed to date from which shall be deducted, a reserve of 10% and all previous payments, and the balance of the amount as approved by the Architect shall be due and payable to the Contractor on or about the 15th day of the succeeding month.

9.3.2.2 No payments will be made because of materials or equipment stored off the site, except as provided for in Subparagraph 4.4.5 of the Supplementary General Conditions or other special cases the Owner may approve.

9.6 FAILURE OF PAYMENT

9.6.1 Delete Article 9.6 in its entirety.

ARTICLE 11 - INSURANCE *(Revised 2-06-2015)*

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.2 The insurance required by Subparagraph 11.1.1 shall be written for not less than any limits of liability specified herein, or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the Contractor's obligations under Paragraph 4.18.

During the life of the Contract, the Contractor shall maintain the following types of insurance:

A. General Requirements

Type of Insurance	**Minimum Requirement**
1. Commercial General Liability (CGL) Contractor shall maintain commercial general liability (CGL) CGL insurance shall be written on Insurance Services form CG 00 01 (or substitute form providing equivalent coverage) and shall cover liability arising from premises, operation, independent contractors, products-completed operation, and personal injury, contractual liability broad form property damage liability, products and completed operations coverage and X,C,U (explosion, collapse, underground) hazards.	$1,000,000 combined single limit per occurrence $2,000,000 aggregate Umbrella Liability per occurrence and in the annual aggregate of $5,000,000.
2. Commercial Automobile Liability (CSL) (including hired and non-owned vehicles)	$1,000,000 combined single limit
3. Workers' Compensation (Employers' Liability)	Statutory-Michigan $500,000
4. Professional Liability insurance This limit shall be dedicated to the risks of Professional Liability and it shall not be combined with limits of any other coverages such as Environmental/Pollution General Liability, or Umbrella Liability unless otherwise approved by the Owner. Coverage shall be for the benefit of the Contracting or Design- Build entity, its principles, Employees, affiliates, agents, and partners-whether joint or several. It is presumed that this insurance will be Claims Made, and therefore must have a Retro-active date prior to the performance of any work for the Owner, whether or not such work is under contract or purchase order. This insurance will be placed with an insurer licensed to do	$5,000,000 **NA** Per Occurrence and in the Aggregate annually.

business in the State of Michigan and rated no less that A X; by AM Best

B. Maximum Acceptable Deductibles

Type of Insurance	Maximum Deductible
Comprehensive General Liability	$5,000
Fire Legal Liability	$5,000
Comprehensive Automobile Liability	-0-
Workers' Compensation	-0-
Property - All Risk	$ 500

11.1.3 The Board of Governors, Wayne State University, shall be named as an additional insured but only with respect to accidents arising out of the performance of said contract. The contractor shall prepare a certificate of insurance which shall name the "Office of Risk Management; 5700 Cass Avenue" as the Wayne State University certificate holder.

11.1.3.1 The Contractor shall either 1) require each of his Subcontractors to procure and to maintain during the life of his subcontract, Subcontractors' Comprehensive General Liability, Automobile Liability and Property Damage Liability Insurance of the type and in the same amounts as specified in the Subparagraph, or 2) insure the activity of his subcontractors in his own policy.

11.2 OWNER'S LIABILITY INSURANCE

Delete Article 11.2 in its entirety.

11.3 PROPERTY INSURANCE

Delete Article 11.3 in its entirety and replace with the following:

11.3.1 The Contractor shall purchase and maintain property insurance upon the entire work at the site to the full insurable value thereof. This insurance shall include the interests of the Owner, the Contractor, Subcontractors, and sub-subcontractors in the work and shall insure against the perils of Fire, Extended Coverage, Vandalism, and Malicious Mischief.

11.3.2 The Owner and Contractor waive all rights against each other for damages caused by fires or other perils to the extent covered by insurance provided under Subparagraph 11.3.1. The Contractor shall require similar waivers by Subcontractors and sub-subcontractors in accordance with Clause 5.3.1.5.

11.3.3 Insurance must be issued by an insurance company with an "A rating as denoted in the AM Best Key Rating Guide".

ARTICLE 12 - CHANGES IN THE WORK

12.1 CHANGE ORDERS

12.1.8 Percentage markups in pricing under Subparagraphs 12.1.3.1, 12.1.3.3, and 1.2.4 shall be as limited in the Contract Documents. Unit price of Subparagraph 12.1.3.2 shall represent total unit cost to the Owner and shall include the Contractor's markup for overhead and profit.

ARTICLE 14 - TERMINATION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 If the work is stopped for a period of thirty days under any order of any court or other public

authority having jurisdiction, or as a result of any act of government, such as a declaration of a national emergency making materials unavailable, through no act or fault of the contract or a subcontractor or their agents or employees or other persons performing any of the Work under a contract with the contractor, then the contractor may, upon seven days' written notice to the Owner and the Architect, terminate the contract and recover from the Owner payment for all Work executed and for any proven loss sustained upon any materials, equipment, tools, construction equipment, and machinery, including reasonable profit and damages.

ARTICLE 15 - ADDITIONAL CONDITIONS

15.1 SUBSTITUTION OF MATERIALS AND EQUIPMENT

15.1.1 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 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.

15.2 NON-DISCRIMINATION PROVISION AND WAGE AND HOUR ACT

15.2.1 During the performance of this contract, the Contractor agrees as follows:

15.2.1.1 The Contractor shall not discriminate against any employee or applicant for employment because of sex, race, creed, color, age, or national origin. The Contractor will take affirmative action to insure that applicants are employed, and that employees are treated during employment without regard to their sex, race, age, creed, color, or national origin.

15.2.1.2 Such action shall include but not be limited to, the following: employment; upgrading; demotion; or transfer; recruitment or recruitment advertising; layoff or terminations; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided setting forth the provisions of this non-discrimination clause.

15.2.1.3 The Contractor will, in all solicitations, 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 sex, race, creed, color, age or national origin.

15.2.1.4 The Contractor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice advising the labor union or worker's representative of the Contractor's commitments under Section 202 of Executive Order No. 11246 of October 27, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

15.2.1.5 The Contractor will comply with all provisions of the Executive Order No. 11246 of October 27, 1965, and of the rules, regulations and relevant orders of the Secretary of Labor or other government agency or authority having jurisdiction.

15.2.1.6 The Contractor will furnish all information and reports required by Executive Order No. 11246 of October 27, 1965, and by the rules, regulations, and orders of the Secretary of Labor or other government agency or authority having jurisdiction, and will permit access to his books, records, and accounts by the administrative agency and the Secretary of Labor for the purposes of investigation to ascertain compliance with such rules, regulations and orders.

15.2.1.7 In the event of the Contractor's noncompliance with the non-discrimination clauses of this contract, or with any of the said rules, regulations, or orders, this Contract may be canceled, terminated or suspended in whole or in part, and the Contractor may be declared ineligible for further University contracts or federally-assisted contracts in accordance with procedure authorized in Executive

Order No. 11246 of October 27, 1965, or by rule, regulation, or order of the Secretary of Labor or other government agency or authority having jurisdiction.

15.2.1.8 The Contractor will include in the provisions of Subparagraph 15.2.1.1 through 15.2.1.8 in every subcontract or purchase order unless exempted by rules, regulations or orders of the President's Committee on Equal Employment Opportunity issued pursuant to Section 204 of Executive Order No. 11246 of September 14, 1965, so that provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the Contractor becomes involved as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interest of the United States.

15.3 COMPLIANCE WITH COPELAND ANTI-KICKBACK ACT AND REGULATIONS

15.3.1 The Contractor shall comply with the Copeland Anti-Kickback Act and Regulations of the Secretary of Labor (29CFR, Part 3) which are herein incorporated by reference.

15.4 PREVAILING WAGES

15.4.1 Contractors and subcontractors shall pay all mechanics and laborers, including apprentices and trainees, no less than the wage and fringe benefit rates prevailing in the locality in which the work is performed. Wage and fringe benefit rates are determined by the Federal Government Department of Labor.

15.4.2 Classifications not provided in the schedule shall be determined prior to the award of the contract and shall be no less than the wage and fringe benefit rates determined by the Federal Department of Labor.

15.4.3 Contractors and subcontractors shall adhere to the ratios of apprentices to journey workers as determined by the Federal Department of Labor.

15.4.4 Contractors and subcontractors shall keep a copy of the prescribed wage and benefit rates posted at the construction site in a conspicuous place.

15.4.5 Contractors and subcontractors shall keep an accurate record of the name, occupation, and the actual benefits paid to each mechanic or laborer for the contract. This record shall be made available for reasonable inspection by the Federal Department of Labor and the Owner.

DRAWINGS

The Technical Specifications dated **March 4, 2015**and the following List of Drawings represent the scope of work as defined in the Contract Documents from Article 4.

DRAWINGS

Drawing No.:	**Description**	**Dated**
T-1.0	DRAWING LIST / LOCATION PLAN	2-24-15
A-1.1	ROOF PLAN	
A-1.2	ELEVATION AND SECTION	
A-2.1	DETAILS	
A-2.2	DETAILS	

GENERAL REQUIREMENTS

GENERAL

A. **CONTRACTOR'S RESPONSIBILITY**

It is not the responsibility of the Architect/Engineer or Owner's Representative to notify the Contractor or subcontractors when to commence, to cease, or to resume work; nor in any way to superintend so as to relieve the Contractor of responsibility or of any consequences of neglect or carelessness by him or his subordinates. All material and labor shall be furnished at times best suited for all Contractors and subcontractors concerned, so that the combined work of all shall be properly and fully completed on the date fixed by the Contract.

The Contractor shall be responsible for all items contained in both the specifications and on the drawings for all trades. He shall be responsible for the proper division of labor according to current labor union agreements regardless of the division of responsibility implied in the contract documents.

B. **CODES AND STANDARDS**

Reference to standard specifications for workmanship, apparatus, equipment and materials shall conform to the requirements of latest specifications of the organization referenced, i.e., American Society for Testing Materials (ASTM), Underwriters Laboratories, Inc. (UL), American National Standards Institute, Inc. (ANSI), and others so listed in the Technical Specifications.

C. **PERMITS, FEES AND NOTICES**

See 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: **http://networks.wayne.edu/WSU-Communications-Standards.pdf**

2. Automation System Program Code

   A. All automation system non-compiled 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.

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 flame proofed.

I. **WATER SERVICE**

Sources of water are available at the site. The Owner will pay for reasonable amounts of water used for construction purposes.

The Contractor shall provide, at the earliest possible date, temporary connections to the water supply sources and maintain adequate distribution for all construction requirements. The Contractor shall protect sources against damage.

Methods of conveying this water shall be approved by the Architect/Engineer and shall not interfere with the Owner's operations.

J. **ELECTRICAL SERVICES**

All charges for reasonable amounts of electrical power energy used for temporary lighting and power required for this work will be paid by the Owner.

The Contractor shall provide and maintain any temporary electrical lighting and power required for this work. At the completion of the work, all such temporary electrical facilities shall be removed and disposed of by the Contractor.

Temporary lighting and power shall comply with the regulations and requirements of the National Electrical Code

INSPECTIONS AND TESTS

The Architect/Engineer shall at all times have access to the work wherever it is in preparation or in progress and the Contractor shall provide proper facilities for such access and for observation.

No failure of the Architect/Engineer, during the progress of the work, to discover or reject materials or work not in accordance with the Contract Specifications and Drawings shall be deemed an acceptance thereof nor a waiver of defects therein. Likewise, no acceptance or waiver shall be inferred or implied due to payments made to contractor or by partial or entire occupancy of the work, or installation of materials that are not strictly in accordance with the Contract Specifications and Drawings.

Where tests are specifically called for in the Specifications, the Owner shall pay all costs of such tests and engineering services unless otherwise stated in the contract.

Where tests are not specifically called for in the Specifications, but are required by the Architect/Engineer or Consultant, the Owner shall pay all costs of such tests and engineering services unless the tests reveal that the workmanship or materials used by the Contractor are not in conformity with the Drawings, Specifications, and/or approved shop drawings. In such event, the Contractor shall pay for the tests, shall remove all work and materials so failing to conform and replace with work and materials that are in full conformity.

CLEAN-UP

The Contractor shall at all times keep the Owner's premises and the adjoining premises, driveways and streets clean of rubbish caused by the Contractor's operations and at the completion of the work shall remove all the rubbish, all of his tools, equipment, temporary work and surplus materials, from and about the premises, and shall leave the work clean and ready for use. If the contractor does not attend to such cleaning immediately upon request, the Architect/Engineer may cause such cleaning to be done by others and charge the cost of same to the Contractor.

The Contractor will be responsible for all damage from fire that originates in, or is propagated by, accumulations of rubbish or debris.

All rubbish and debris shall be disposed of off the Owner's property in an approved sanitary landfill site. No open burning of debris or rubbish will be permitted. Job site shall be left neat and clean at the completion of each day's operation.

PROJECT CLOSE-OUT

A. RECORD DRAWINGS

At beginning of job, provide one copy of Working Drawings, and record changes, between Working Drawings and "As Builts", including changes made by Addenda, Change Orders, Shop Drawings, etc. These shall be kept up to date. Update to indicate make of all mechanical and electrical equipment and fixtures installed. Keep these Record Prints in good condition and available for inspection by the Architect/Engineer.

Upon completion of the job, turn over to the Architect/Engineer Record Prints of Working Drawings showing all job changes.

B. OPERATING AND MAINTENANCE DATA

Prepare and furnish to the Architect/Engineer three (3) bound copies of "Operating and Maintenance Manual" on all equipment installed under this Contract.

Manual shall include copies of all Manufacturers' "Operating and Service Instructions", including Parts List, Control Diagrams, Description of Control Systems, Operating, Electrical Wiring, and any other information needed to understand, operate and maintain the equipment. The names and addresses of all subcontractors shall be included. These instructions shall be custom-prepared for this job -- catalog cuts will **not** be accepted. Equipment shall be cross-referenced to Section of Specifications and to location shown and scheduled on drawings.

Include Test-Adjust-Balance Report in the Manual.

C. FINAL INSPECTION

Secure final inspections from the State of Michigan as soon as the work is completed and immediately submit such Certificates to the Architect/Engineer.

D. GUARANTEES (See Sections 00510 and 01781)

Guarantees on material and labor from the General Contractor and his subcontractors shall be as required in Sections 00510 and 01781.

E. SWORN STATEMENT AND WAIVER OF LIENS *(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 labor 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 back charge the contract $250.00 for each core change. In the event that a Contractor wants access to a secured area, he shall give the Owner a minimum 48-hour notice.

SUMMARY OF WORK

SUMMARY OF WORK

PROJECT: Scott Hall Roof Replacement

WSU PROJECT NO.: 612-256214

PROJECT MANAGER: Robert Jacobs

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: The VENDOR shall remove and replace the upper roof above the penthouse mechanical room. The existing built-up membrane roof shall be replaced with new TPO roofing including but not limited to general conditions, hoisting, traffic controls, roofing, insulation, protective board, flashings, roof drainage, equipment curbs, gravel-stops, vents and stacks, pipe pitch boxes, guys and standards, etc. as required. Demo and replacement of existing roof ladder and scuttle is required, as well as removal of mechanical equipment and roof accessories as identified.

3. The building is located at

   Wayne State University
   540 E. Canfield
   Detroit, Michigan 48202

P R O J E C T M A N U A L

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

SCOTT HALL PENTHOUSE ROOF REPLACEMENT

540 E. CANFIELD, DETROIT, MICHIGAN 48202

WSU Project #612-256214

NSA Architects Engineers Planners
23761 Research Drive
Farmington Hills, MI 48335
Phone: 248-477-2444
Fax: 248-477-2445

NSA PROJECT NO. 214170.00

FEBRUARY 24, 2015
Issued for: BIDS

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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.

END OF TABLE OF CONTENTS

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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: Cutting and patching of dimensional lumber.

1. Description: Cutting, removal, and replacement of existing dimensional lumber in accordance with Division 01 Section "Cutting and Patching." not otherwise indicated in the Contract Documents.

2. Unit of Measurement: Square feet of removal and replacement.

B. Unit Price No. 2: Cutting and patching of plywood.

1. Description: Cutting, removal, and replacement of existing plywood in accordance with Division 01 Section "Cutting and Patching." not otherwise indicated in the Contract Documents.

2. Unit of Measurement: Square feet of removal and replacement.

C. Unit Price No. 4: Cutting and patching of lightweight concrete roof decking.

1. Description: Cutting, removal, and replacement of existing lightweight concrete roof decking in accordance with Division 01 Section "Cutting and Patching." not otherwise indicated in the Contract Documents.

2. Unit of Measurement: Square feet of removal and replacement.

D. Unit Price No. 6: Cutting and patching of 4 to 6-inch light weight concrete deck.

1. Description: Cutting, removal, and replacement of existing light weight concrete roof decking in accordance with Division 01 Section "Cutting and Patching." not otherwise indicated in the Contract Documents.

2. Unit of Measurement: Square feet of removal and replacement.

END OF SECTION 012200

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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: Refer Specification Section 075420-GAF TPO-SBS Hybrid Roofing, Section 220500-Common Work Results for Plumbing, Section 221423-Storm Drainage Piping Specialties, and drawings.

1. Base Bid: Remove and replace three existing roof sumps and strainers. Snake existing roof drains.

2. Alternate Bid: Base Bid, plus add an additional three new roof sumps, strainers, and associated storm drainage piping.

B. Alternate No. 2: Refer to Specification Section 099100-Painting, and drawings.

1. Base Bid: Leave all existing rooftop vents and flashing not otherwise removed in an “as-is” condition.

2. Alternate Bid: Prep and Paint all existing rooftop vents and flashing not otherwise removed.

C. Alternate No. 3: Refer to Specification Section 075420-GAF TPO-SBS Hybrid Roofing, and drawings.

1. Base Bid: Provide 1/2 Metal Coping with one concealed cleat as indicated on drawings.

2. Alternate Bid: Provide Full Metal Coping with two concealed cleats as indicated on drawings.

D. Alternate No. 4: Refer to drawings.

1. Base Bid: Leave Mechanical Unit indicated on drawings in an “as-is” condition. Roof and flash around supports, associated connections, and penetrations.

2. Alternate Bid: Decommission Mechanical Unit indicated on drawings, remove, and dispose of the Unit, complete with supports, associated connections, and penetrations. Patch roof deck at penetrations, and install new roofing as indicated.

END OF SECTION 012300

SECTION 012500 – SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section specifies administrative and procedural requirements governing:

1. Contractor's selection of products for use in the Project. Product substitution requests made after Contract award.

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.

3. Specified options of products and construction methods included in Contract Documents.

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)

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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

_____
Name Phone Fax

_____
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

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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.
4. Affidavits of Fire Performance.

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.
5. Contract close-out submittals.

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:

	Contractor to Submit	NSA	Owner	Contractor to Receive
Shop Drawings	3 prints	1 print	1 print	1 print
Product Data	4	1	1	2
Samples	3	1	--	2

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)

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SUBMITTAL ROUTING TRANSMITTAL

NSA Project No. 214170.00 — ***WSU, SCOTT HALL PENTHOUSE ROOF REPLACEMENT*** — **NSA Submittal No.↑** _____

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

1 From Prime Contractor to NSA

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

FROM:

Phone: _____ Fax: _____

Contractor Submittal Package No. _____
NEW ○ RESUBMITTAL ○

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:

2 NSA In-House Routing Date Received:

NSA IN-HOUSE ROUTING:

_____

_____

_____

_____

_____

3A To Consultant For Review Date Received:

TO: _____

Attn: _____

Sent By: _____

Via: _____

Date Sent:

3B From Consultant to NSA Date Received:

TO: NSA
Attn: Construction Administration

Submittal Review By:

_____

Returned Via: _____
Date Sent:

4 From NSA to Contractor Date Received:

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:

_____

○ Contractor notified by phone on _____,

by_____.

Sent By: _____,

Via: _____.
Date Sent:

INSTRUCTIONS: Group submittals into separate packages of related materials. Package and number Mechanical and Electrical submittals separately.

1 Item No.	No. of Copies	Manufacturer/ Supplier/Subcontractor	Item Description	Spec Section	3A # / Copies to Consult	3B # / Copies to NSA	4 # / Copies to Owner	Review Code	# / Copies to Contr.
1									
2									
3									
4									
5									
6									
7									

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

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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.

C. Accessible Temporary Egress: Comply with applicable provisions in the U.S. Architectural & Transportation Barriers Compliance Board's ADA-ABA Accessibility Guidelines and ICC/ANSI A117.1.

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

A. Contractor's Moisture Protection Plan: Avoid trapping water in finished work. Document visible signs of mold that may appear during construction.

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

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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.

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.

C. Power-Driven Fasteners: NES NER-272.

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.

1. Material: Carbon-steel components, zinc plated to comply with ASTM B 633, Class Fe/Zn 5.

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

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SECTION 075420 - GAF TPO-SBS HYBRID ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:
1. Fully Adhered Thermoplastic Polyolefin (TPO) Single-Ply Roofing Membrane over Styrene-Butadine-Styrene (SBS) Hybrid Roofing.
2. Insulation.
3. Flashing.
4. Coping.
5. Roof Drains.
6. Roof Walkways.

B. Related Requirements:

1. Division 01 – General Requirements for General Project Information and Procedures.

2. Section "061053 – Miscellaneous Rough Carpentry" for Wood Blocking.

3. Section “076200 – Sheet Metal Flashing and Trim” for Flashing and Coping.

4. Section “221423 – Storm Drainage Piping Specialties” for Roof Drains.

1.2 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Prior to scheduled commencement of the roofing installation and associated work, conduct a meeting at the project site with the installer, architect, owner, GAF representative and any other persons directly involved with the performance of the work. The installer shall record conference discussions to include decisions and agreements reached (or disagreements), and furnish copies of recorded discussions to each attending party. The main purpose of this meeting is to review foreseeable methods and procedures related to roofing work.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings:

1. Include plans, and manufacturer’s standard sections, and attachment details.
2. Include method of field assembly.
3. Include accessories.
4. Detail fabrication and assembly of flashings, and copings.

1.4 INFORMATIONAL SUBMITTALS

A. Installer certificates: Installer shall provide written documentation from the manufacturer of their authorization to install the roof system, and eligibility to obtain the warranty specified in this section.

B. Material test reports.

C. Product test reports.

D. Research reports.

E. Source quality-control reports.

F. Field quality-control reports.

G. Sample warranty.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance data.

1.6 QUALITY ASSURANCE

A. Manufacturer's Qualifications: Roofing Manufacturer shall provide a roofing system that meets or exceeds all criteria listed in this section.

B. Installer Qualifications: Installer shall be classified as a ***Master Select™*** or ***Master*** contractor as defined and certified by GAF.

C. Source Limitations: All components listed in this section shall be provided by a single manufacturer or approved by the primary roofing manufacturer.

D. Final Inspection: Manufacturer's representative shall provide a comprehensive final inspection after completion of the roof system. All application errors must be addressed and final punch list completed.

1.7 REGULATORY REQUIREMENTS

A. All work shall be performed in a safe, professional manner, conforming to all federal, state and local codes.

1.8 PROJECT CONDITIONS

A. Weather:
   1. Proceed with roofing only when existing and forecasted weather conditions permit.
   2. Ambient temperatures must be above 45°F and rising when applying hot asphalt or water based adhesives.

1.9 WARRANTY

A. Provide Manufacturers NDL EverGard Diamond Pledge Guarantee with single source coverage and no monetary limitation where the manufacturer agrees to repair or replace components in the roofing system, which cause a leak due to a failure in materials or workmanship.

1. Warranty Period: Thirty (30) years from date of Substantial Completion.
   a. All sheet metal, copings, and gravel stops shall be included in manufacturer's NDL warranty. The coverage for the owner shall be roof edge to roof edge.
2. Warranty of materials and workmanship covers listed products within this section when installed in accordance with current GAF or Manufacturer's application and specification requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Roofing System: Subject to compliance with requirements, provide GAF EverGuard Extreme TPO 60 mil Fleece-Back Membrane thermoplastic single-ply roofing membrane with GAF Ruberoid 20 SBS Base. or a comparable system by one of the following:

1. Firestone Building Products.

2. Genflex.

3. Carlisle Syntec.

2.2 PERFORMANCE REQUIREMENTS

A. Provide an installed roofing membrane and base flashing system that does not permit the passage of water, and will withstand the design pressures calculated in accordance with the most current revision of ASCE 7.

B. Roofing Manufacturer shall provide all primary roofing materials that are physically and chemically compatible when installed in accordance with manufacturers current application requirements.

C. Heat Aging Requirements for TPO 60 mil membranes accepted as base-bid material:

1. Test Method D573: Age sheet specimens for 150 days at 275°F. After exposure, the specimens shall be removed, wrapped around a 3 inch mandrel, and inspected for cracks and crazing. A specimen is rated "pass" if no cracks or crazing is observed.

D. Weather Resistance:
1. Text Method G151 and G155, using conditions detailed in ASTM D6878 except that the radiant exposure should be 40,320 kJ/m2.nm at 340 nm (i.e. 4 times the D6878 standard). After exposure, the specimens shall be removed, wrapped around a 3 inch mandrel, and inspected for cracks and crazing. A specimen is rated "pass" if no cracks or crazing is observed.

E. Meet the following Wind Uplift Requirements per ASCE-7:

1. Corner Design Uplift Pressure: -96 psf.

2. Perimeter Design Uplift Pressure: -67 psf.

3. Field-of-Roof Design Uplift Pressure: -45 psf.

2.3 INSULATION (BASE LAYER)

A. Rigid polyisocyanurate board, with a strong white or black fibrous glass facer conforming to or exceeding the requirements of ASTM C 1289 / FS HH-I-1972. EnergyGuard Polyiso, with the following characteristics:
1. Board Thickness: 2.2".
2. Thermal Resistance (LTTR Value): 12.6.

2.4 INSULATION/ROOF BOARD (SECOND LAYER)

A. Mineral Wool Roofing Insulation Board with an impregnated bitumen layer compatible with torch or mop-applied roofing membranes. Roxul TopRock DD Plus Mineral wool insulation with the following characteristics:
1. Board Thickness: 2".
2. Board Size: 4' x 4'.
3. Thermal Resistance (LTTR Value): 7.6.

2.5 INTERPLY SHEET

A. Basis-of-Design Tough SBS modified asphalt glass reinforced base sheet: GAF Ruberoid 20 Smooth base / ply sheet or equivalent product by roofing manufacturer.
1. Meet or exceed ASTM D6163, Type I, Grade S.
2. Each roll contains one and one-half squares of material, approximately 39.375 inches x 50.3 feet; 89 pounds.

2.6 MEMBRANE MATERIALS

A. System Basis-of-Design is a fleece-backed, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane. Engineered to provide high solar reflectivity and extremely high UV and thermal resistance.
1. These combined characteristics produce a single-ply membrane suitable for the most demanding solar installations as well as any other high heat or solar loading applications.
2. Meets or exceeds the minimum requirements of ASTM D-6878.
3. Each full roll contains approximately 1000 sq.ft. of roofing material, 10' X 100', weighing 350 lbs.
4. Each half sheet roll contains approximately 500 sq.ft. of roofing material, 5' X 100', weighing 175 lbs.

B. Standard TPO Fleece-Back membrane meeting ASTM D-6878, that does not meet the specified Heat Aging and radiant exposure of the TPO Extreme Product specified above in Part 2 Article 2.2 Paragraph (C) and (D) above, the roofing manufacturer's TPO Fleece-Backed 80 mil (0.080 inch minimum) must be used as the accepted roof covering for the 30-Year NDL System and Warranty.

2.7 FLASHING MATERIALS

A. Basis of Design: GAF EverGard TPO 60 mil Smooth-type, polyester scrim reinforced thermoplastic polyolefin membrane with a nominal 0.060 inch (60 mil) thickness, for use as a single ply roofing membrane.
   1. Engineered to provide high solar reflectivity and extremely high UV and thermal resistance.
   2. These combined characteristics produce a single-ply membrane suitable for the most demanding solar installations as well as any other high heat or solar loading applications.
   3. Meets or exceeds the minimum requirements of ASTM D-6878.
   4. UL Listed and FM Approved.
   5. Each full roll contains approximately 1000 square feet of roofing material, 10 feet x 100 feet, weighing 322 pounds.

B. If the Roofing Contractor selects the TPO FB-80 mil standard field membrane option, the Flashing shall also be installed using the manufactures (0.080 inch minimum) TPO Smooth membrane meeting ASTM D-6878 on all walls, curbs, and penetrations.
   1. Flashing membrane thickness must meet the field membrane thickness.

2.8 ADHESIVES, SEALANTS AND PRIMERS

A. Basis-of-Design Standard Solvent-Based Bonding Adhesive: Solvent based rubberized adhesive for use with EverGuard TPO membranes, EverGuard Standard Solvent Bonding Adhesive, or equivalent adhesive by roofing manufacturer.

B. Basis-of-Design Foam Membrane and Insulation Adhesive: GAF 2 Part Roofing Adhesive Low Rise Foam manufactured by 3M, or equivalent adhesive by roofing manufacturer.

C. Basis-of-Design SBS Adhesive: Matrix 102 SBS Membrane Adhesive, by BMCA.
   1. For adhering Ruberoid 20 SBS based sheet to Roxul Insulation.

D. Basis-of-Design Solvent based liquid, required to protect field cut edges of TPO membranes: EverGuard TPO Cut Edge Sealant, or equivalent product by roofing manufacturer.
   1. Apply directly from a squeeze bottle.

E. Basis-of-Design Solvent based seam cleaner: EverGard TPO Seam Cleaner, or equivalent product by roofing manufacturer.
   1. Used to clean exposed or contaminated seam prior to heat welding.

F. Basis-of-Design Solvent based, trowel grade synthetic elastomeric sealant: FlexSeal Caulk Grade, or equivalent product by roofing manufacturer.
   1. Durable and UV resistant suitable for use where caulk is typically used.

G. Basis-of-Design Commercial grade roofing sealant: FlexSeal Roof Sealant, or equivalent product by roofing manufacturer.
   1. For sealing the upper lip of exposed termination bars and penetrations and around clamping rings.
   2. Provide 20 year limited warranty against leaks caused by manufacturing defects.
   3. Meet the performance criteria of ASTM D412, ASTM D2196, ASTM D1475 and ASTM D1644.

H. Basis-of-Design One part butyl based high viscosity sealant: EverGard Water Block, or equivalent product by roofing manufacturer.
   1. For sealing between flashing membrane and substrate surface behind exposed termination bars and for sealing between roofing membrane and drain flange.

I. Basis-of-Design Epoxy-based two-part 100% solids sealant: EverGard 2-Part Pourable Sealant, or equivalent product by roofing manufacturer.
   1. For filling sealant pans at irregularly-shaped penetrations.
   2. Epoxy is Part A.
   3. Polyamide is Part B.

2.9 ACCESSORIES

A. All Accessories to be compatible with manufacturer's TPO roofing membrane, meet specified heat aging and ultraviolet exposure, and must be compatible with manufacturer's 30 year warranty.

B. Flashing Accessories:
   1. Basis-of-Design Smooth-type, unreinforced thermoplastic polyolefin-based membrane for alternative flashing/reinforcing material for penetrations and corners: EverGard TPO Detailing Membrane, or equivalent product by roofing manufacturer.
      a. Required whenever preformed vent boots cannot be used.
      b. Available in White 0.055 inches (55 mils) nominal thickness.
      c. Sheet size: 24 inches x 50 feet.
   2. Basis-of-Design Smooth-type, polyester scrim reinforced thermoplastic polyolefin membrane strip for use as a cover strip over coated metal and stripping-in coated metal flanges and general repairs: EverGard TPO Flashing Membrane, or equivalent product by Roofing Manufacturer.
      a. 8-inch wide.
      b. 0.045 inches (45 mils) nominal thickness.
      c. 100 foot length.
      d. Available in White.
   3. Basis-of-Design Extruded aluminum termination bar: EverGard Lip Termination Bar, or equivalent product by roofing manufacturer.
      a. Angled lip caulk receiver and lower leg bulb stiffener.
      b. Pre-punched slotted holes at 6 inches on center or 8 inches on center.
      c. 0.75 inches x 10 feet with 0.090 inches (90 mils) cross section.
   4. Basis-of-Design Smooth-type heat-weldable polyester scrim reinforced thermoplastic polyolefin membrane strip: EverGard TPO Heat-Weld Cover Tape or equivalent product by roofing manufacturer.
      a. 6-inches wide.
      b. Designed for use as a cover strip over non-coated metal edges and flanges.
      c. Each full roll contains approximately 100 Lineal Ft. of material, 6" X 100'.
   5. Basis-of-Design 24 gauge steel with 0.025 inches (25 mils) thick TPO based film for fabrication into metal gravel stop and drip edge profiles, metal base and curb flashings, sealant pans, and scupper sleeves: EverGard TPO Coated Metal, or equivalent product by roofing manufacturer.
      a. Standard sheet size 4 feet x 10 feet.
      b. Sheet weight 47 pounds.
      c. Custom sizes as required by application.

C. Wall and Curb Accessories:
   1. Basis-of-Design Prefabricated standard and custom size thru-wall scuppers: EverGard TPO Scupper, or equivalent product by roofing manufacturer.
      a. 55 mil TPO membrane and 24 gauge coated metal.
      b. Available in two sizes: 4 inches x 6 inches x 12 inches (l x w x d) with a 5.75 inches x 3.75 inches opening and 8 inch x 10inch x 12 inch (l x w x d) with a 9.75 inch x 7.75 inch opening, or custom size as required by application.
   2. Basis-of-Design Reinforced TPO membrane fabricated corners: EverGuard Corner Curb Wraps, or equivalent product by roofing manufacturer.
      a. 0.045 inches (45 mils) thick.

b. Available in four standard sizes to flash curbs that are 24", 36", 48", and 60" in size.
c. Four corners are required to flash each curb.

3. Basis-of-Design Molded TPO membrane outside corners of base and curb flashing: EverGuard TPO Universal Corners, or equivalent product by roofing manufacturer.
   a. 0.045 inches (45 mils) thick.
   b. Hot-air welds directly to TPO membrane.
   c. Size 4 inches x 4 inches with 6 inch flange.
4. Basis-of-Design Molded TPO membrane inside corners of base and curb flashing: EverGuard TPO Preformed Corners, or equivalent product by roofing manufacturer.
   a. 0.055 inches (55 mils) thick.
   b. Hot-air weld directly to TPO membrane.
   c. Size 6 inches x 6 inches x 5.5 inches high.
5. Basis-of-Design Unreinforced TPO membrane flashing for outside corners of base and curbs: EverGuard TPO Fluted Corner, or equivalent product by roofing manufacturer.
   a. 8-inch diameter.
   b. Nominal 0.050 inches (50 mil) thick.
   c. Vacuum-formed.

D. Penetration Accessories:
1. Basis-of-Design Molded TPO preformed pipe and conduit boots: EverGuard TPO Preformed Vent Boots, or equivalent product by roofing manufacturer.
   a. 0.075 inches (75 mils) thick.
   b. Sized to accommodate most standard one-inch to 6-inch diameter pipe and conduits, including square tube.
   c. Hot-air weld directly to EverGuard TPO membrane.
   d. Supply with stainless steel clamping rings.
2. Basis-of-Design Molded TPO performed pipe and conduit boots: EverGuard TPO Split Pipe Boots, or equivalent product by roofing manufacturer.
   a. 0.045 inches (45 mils) thick.
   b. Split to accommodate standard pipe and conduits.
   c. Utilize three standard sizes as required per application.
3. Basis-of-Design Molded TPO performed square boots: EverGuard TPO Square Tube Wraps, or equivalent product by roofing manufacturer.
   a. 0.045 inches (45 mils) thick.
   b. Split to accommodate most square penetrations and conduits.
   c. Utilize three standard sizes as required per application.
4. Basis-of-Design Molded penetration pocket: EverGuard TPO Pourable Sealer Pocket, or equivalent product by roofing manufacturer.
   a. 0.070 inches (70 mils) thick.
   b. Provides structure and foundation for the application of a pourable sealant for a variety of roof penetrations.
   c. Weldable.
   d. 9 inches x 6 inches x 4 inches (l x w x h).
5. Basis-of-Design Unreinforced TPO conforming membrane seal over T-joints: EverGuard TPO Drain, or equivalent product by roofing manufacturer.
   a. 0.055 inches (55 mils) thick.
6. Basis-of-Design Aluminum drain unit: EverGuard TPO Coated Metal Drain, or equivalent product by roofing manufacturer.
   a. Coated with a weldable TPO compound.
   b. Heat weld directly to the drain body, resulting in a strong, secure installation.
   c. Fit each drain with BlueSeal mechanical drain seal for a secure, tight seal into the building drain system.
   d. Two standard 3 inch and 4 inch sizes.
   e. Custom sizes as required per application.

E. Roof Edge Accessories:
1. Coping: Supply by roofing manufacturer meeting and tested ES-1 and covered by manufacturer's warranty.
2. Coping will be .040 aluminum with a standard color kynar paint finish.
   a. Provide alternate price for utilizing 24 ga. Galvalume with a standard color kynar paint finish.
   b. Coping cleat will be 22 ga. Galvanized steel.
3. Basis-of-Design: Ultra Seam SC Coping, manufactured by Metal Design & Manufacturing (313-893-9810), or equivalent product recommended by the following roofing manufacturers:
   a. Firestone
   b. Genflex
   c. GAF
   d. Hickman
4. Roofing contractor may fabricate only if metal shop is ES-1 Certified and acceptable to roofing manufacturer for Edge to Edge 30 year Warranty.

F. Field of Roof Accessories - Basis-of-Design by EverGuard, or equivalent products by roofing manufacturer:
1. Pre-manufactured expansion joint covers used to bridge expansion joint openings in a roof structure to be EverGuard TPO Expansion Joint Covers.
   a. Fabricated to accommodate all roof to wall and roof to roof applications.
   b. 0.060" (60 mils) reinforced TPO membrane.
   c. 5 standard sizes for expansion joint openings up to 8" wide.
2. Conforming membrane seal over T-joints to be EverGuard T-Joint Patches.
   a. 60 and 80 mil membrane applications.
3. Walkways to be EverGuard TPO Walkway Rolls.
   a. 1/8 inch thick extruded and embossed TPO.
   b. 34 inch x 50 feet roll.
   c. Heat weld directly to roofing membrane.
   d. Unique herringbone traction surface.
   e. Provide gray or yellow, as selected by Owner or Architect.

PART 3 - EXECUTION

3.1 DELIVERY, STORAGE AND HANDLING

A. Deliver all roofing materials to the site in original containers, with factory seals intact. All products are to carry either a GAF or BMCA label.

B. Store all pail goods in their original undamaged containers in a clean, dry location within their specified temperature range.

C. Do not expose materials to moisture in any form before, during, or after delivery to the site. Reject delivery of materials that show evidence of contact with moisture.

D. Remove manufacturer supplied plastic covers from materials provided with such. Use "breathable" type covers such as canvas tarpaulins to allow venting and protection from weather and moisture. Cover and protect materials at the end of each work day. Do not remove any protective tarpaulins until immediately before the material will be installed.

E. Materials shall be stored above 55°F (12.6°C) a minimum of 24 hours prior to application.

3.2 EXAMINATION

A. Verify that the surfaces and site conditions are ready to receive work.

B. Verify that the deck is supported and secured without damage and voids. Patch as necessary.

C. Verify that the deck is clean and smooth, free of depressions, waves, or projections, and properly sloped to drains, valleys, eaves, scuppers or gutters.

D. Verify that the deck surfaces are dry and free of ice or snow.
   1. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.

E. Verify that all roof openings or penetrations through the roof are solidly set, and that all flashings are tapered.

3.3 REMOVAL OF EXISTING ROOF MEMBRANE

A. Remove existing CTP membrane and insulation down to existing Lightweight Concrete. Clean substrate by sweeping and blowing off all dust and debris before installing any new roofing components in the Low Rise Foam Adhesive.

3.4 SUBSTRATE PREPARATION

A. Existing Lightweight Insulating Concrete Deck:
   1. Lightweight insulating concrete decks are required to have a minimum thickness of 2 inches, a minimum compressive strength of 125 psi, and a minimum density of 22 pcf. Individual deck manufacturer's standards apply when their specifications exceed the minimum thickness, compressive strength, or density requirements.
   2. The moisture content of existing LWIC must be under 20% when insulation is to be fastened directly to it. Where moisture content exceeds 20%, a layer of Stratavent Eliminator Venting Base Sheet must be installed prior to the insulation.
   3. Do not apply roof insulation or roofing until all other work trades have completed jobs that require them to traverse the deck on foot or with equipment. A vapor retarder coated lightly with asphalt may be applied to protect the inside of the structure prior to the insulation and final roofing installation. Before the application of the insulation, any damage or deterioration to the vapor retarder must be repaired.

3.5 INSULATION INSTALLATION

A. Polyisocyanurate Insulation installation:
   1. The substrate must be free of and debris, dust, dirt, oil, grease, and standing water before applying the adhesive.
   2. Do not install wet, damaged or warped insulation boards.
   3. Install insulation layers applied with rows of GAF 2 Part Roofing Adhesive spaced 12" O.C. (Field Areas)

4. Install base layer of 2.2 inch Polyisocyanurate (4 feet x 4 feet) with LRF CR-20 per roofing manufacturer's requirements.
5. Polyiso. Insulation boards are to be placed immediately on the wet adhesive but not walked into place or compressed into the adhesive until the CR-20 has begun to thicken and started to develop its initial bond.
6. After the adhesive has attained its initial bond strength the boards can be "walked-in" and will be compressed to the deck or substrate exhibiting minimal slippage or movement.
7. Install corner areas of Polyiso. using CR-20 at 4 inches on center.
8. Install perimeter area of Polyiso. using CR-20 at 6 inches on center.
9. The boards should be exposed to minimum traffic for at least 10-20 minutes after they have been "walked-in-place" to avoid breaking the freshly formed bond.
10. Install insulation boards snug. Gaps between boards must not exceed 1/4 inch. All gaps in excess of 1/4 inch must be filled with like insulation
11. Do not kick insulation boards into place.
12. Miter and fill the edges of the insulation boards at ridges, valleys and other changes in plane to prevent open joints or irregular surfaces. Avoid breaking or crushing of the insulation at the corners.
13. Wood nailers must be 3-1/2 inches minimum width or 1inch wider than metal flange. They shall be of equal thickness as the insulation, and be treated for rot resistance. All nailers must be securely fastened to the deck.

B. Mineral Wool Insulation Installation:
1. Install top layer of 2 inch Roxul TopRock DD Plus Mineral Wool (4 feet x 4 feet) with LRF CR-20 per roofing manufacturer's requirements.
2. Install insulation layers applied with rows of GAF 2 Part Roofing Adhesive spaced 12" O.C. (Field Areas)
3. Insulation boards are to be placed immedieately on the wet adhesive but not walked into place or compressed into the adhesive until the CR-20 has begun to thicken and started to develop its initial bond.
4. After the adhesive has attained its initial bond strength the boards can be "walked-in" and will be compressed to the deck or substrate exhibiting minimal slippage or movement.
5. The boards should be exposed to minimum traffic for at least 10-20 minutes after they have been "walked-in-place" to avoid breaking the freshly formed bond.
6. Install corner areas of Mineral Wool Insulation using ribbons of CR-20 at 4 inches on center.
7. Install perimeter areas of Mineral Wool Insulation using ribbons of CR-20 at 6 inches on center.
8. Stagger the joints of Mineral Wool Insulation in relation to the joints of Polyiso Insulation by a minimum of 6 inches to eliminate continuous vertical gaps.
9. Roof tape, if required over insulation joints, must be laid evenly, smoothly and embedded in a uniform coating of hot steep asphalt with 4 inch end laps. Care must be taken to assure smooth application of tape, and full embedment of the tape in the asphalt.
10. Do not install more insulation than will be completely waterproofed by the end of each working day.

3.6 ROOF MEMBRANE INSTALLATION

A. General: Install GAF's EverGuard® TPO roofing system according to all current manufacturer's application requirements in addition to those listed in this section.
1. GAF EverGuard® TPO Specification #: TFANIR2060XFB.

B. SBS Base Sheet Roof Membrane Installation:
1. Start the application of membrane plies at the low point of the roof or at the drains, so that the flow of water is over or parallel to, but never against the laps.

a. For slopes less than 1/2 inch per foot, membrane should be applied shingle fashion, perpendicular to the slope of the roof deck.
b. On all slopes 1/2 inch per foot and over, membrane should be installed parallel to the slope of the roof. In no case should the flow of water be against the laps

2. Install SBS Base Sheet in cold process SBS Adhesive per ASTM D6163, Type I, Grade S.
3. SBS membranes must not be applied during adverse weather or without precautionary measures in temperatures below 45 deg. F.
   a. Temperatures must be minimum 45 deg. F and rising.
4. Unroll membrane material, cut into 12 feet to 18 feet lengths, placed upside down and allowed to "relax" prior to installation.
   a. Then re-roll to apply.
5. Install full width sheets, lapping 3 inches on the sides and 6 inches on ends.
   a. Stagger adjacent end laps a minimum of 18 inches apart.
   b. Where installed over base sheet, stagger sheet's side and end laps from underlying plies.
6. Starting at low point ro the drains, apply the Matrix cold adhesive to the substrate as follows:
   a. Option 1: Pour the adhesive on the substrate and spread, using a serrated edged squeegee, applied at the rate of 1-1/2 gal per square.
   b. Option 2: Spray, using equipment that will apply the adhesive at a rate equal to 1-1/2 gal/square.
7. Apply adhesive so that the substrate is coated in a pattern slightly larger than the first sheet being applied.
8. End laps and selvage laps of the Ruberoid being lapped must be coated with adhesive so that a visible bead of adhesive appears.
   a. Roll all laps with a steel roller to ensure proper adhesion.
   b. Alternately, the end laps and side laps may be hot-air welded.
   c. The hot-air welding method will provide a watertight lap immediately and may be preferable when inclement weather is threatening.
9. Allow 5 to 15 minutes for solvents to evaporate from the adhesive (i.e. tack time or open time) before embedding any sheets into newly applied adhesive. Tack times may vary based on ambient conditions.
10. Insure that Ruberoid® membrane lays flat in the cold adhesive.
    a. There must be complete adhesion between the cap sheet and the cold adhesive.
    b. Brooming of the plies may be necessary under certain conditions to assure that the cap sheet adheres solidly to the cold adhesive.
    c. Apply extra pressure to avoid creating open channels where three or more membranes are lapped.
11. Obtain a minimum of 3/8 inches and maximum of 1 inch cold adhesive flow-out at all seam areas when the side laps are not heat welded.
    a. Dry laps are not acceptable.
    b. Check all seams for full and uniform adhesion.
12. Stagger end laps a minimum of 18 inches so no adjacent end laps coincide.
    a. If end laps fall in line or are not staggered the proper distance, a full width of Ruberoid SBS membrane must be installed over the end laps.

C. Fully adhered TPO Top Sheet Installation:
1. Install new TPO Fleece-Back 60 mil Extreme or 80 mil Standard TPO per ASTM D-6878 as specified in Low Rise Foam (CR-20) using the splatter method of attachment and rolled in per manufacturer's requirements.
2. Place membrane so wrinkles and buckles are not formed.
   a. Any wrinkles or buckles must be removed from the sheet prior to permanent attachment.
   b. Roof membrane shall be fully adhered immediately after it is rolled out, followed by welding to adjacent sheets.
3. Overlap roof membrane a minimum of 3 inches for side laps and 3 inches for end laps.
4. Install membrane so that the side laps run across the roof slope lapped toward drainage points.

5. Round the exposed sheet corners a minimum of one inch.
6. Use full width rolls in the roof field and perimeter areas.
7. Use TPO Solvent Bonding Adhesive for substrate surface, applied with a solvent-resistant roller, brush, or squeegee.
8. Seal all cut edges of reinforced membrane with EverGuard TPO Cut Edge Sealant.
9. Fully Adhere membrane Flashings using TPO Solvent Bonding Adhesive per details for extended warranties.

D. Supplemental Membrane Attachment:
1. Supplemental Membrane Attachment is required at the base of all walls and curbs, and where the angle of the substrate changes by more than five (5) degrees (1inch in 12 inches).
   a. Roofing membrane shall be secured to the structural deck with appropriate Drill-Tec screws and plates spaced every 12 inches o.c.
   b. The screws and plates must be installed no less than ½" from the membrane edge.
   c. Alternatively, the roofing membrane may be turned up the vertical plane a minimum of 3" and secured with screws and termination bar Fastener spacing is the same as is used for in-lap attachment.
   d. The termination bar must be installed within 1-1/2 inches to 2 inches of the plane of the roof membrane, with a minimum of 1 inch of membrane extending above the termination bar.
2. Supplemental membrane attachment to the structural deck is required at all penetrations unless the insulation substrate is fully adhered to the deck.
   a. Roofing membrane shall be secured to the deck with appropriate Drill-Tec screws and plates.
3. Fasteners must be installed to achieve the proper embedment depth.
   a. Install fasteners without lean or tilt.
4. Install fasteners so that the plate or termination bar is drawn down tightly to the membrane surface.
   a. Properly installed fasteners will not allow the plate or termination bar to move (under-driving), but will not cause wrinkling of the membrane (over-driving).

3.7 FLASHINGS INSTALLATION

A. General:
1. All penetrations must be at least 24 inches from curbs, walls, and edges to provide adequate space for proper flashing.
2. Flash all perimeter, curb, and penetration conditions with coated metal, membrane flashing, and flashing accessories as appropriate to the site condition.
3. All coated metal and membrane flashing corners shall be reinforced with preformed corners or non-reinforced membrane.
4. Hot-air weld all flashing membranes, accessories, and coated metal. A minimum 2 inch wide (hand welder) weld or minimum 1 - 1/2 inches automatic machine weld is required.
5. All cut edges of reinforced membrane must be sealed with EverGuard TPO Cut Edge Sealant.
6. Consult the EverGuard "Application and Specifications Manual" or GAF Contractor Services for more information on specific construction details, or those not addressed in this section.

B. Coated Metal Flashings:
1. Coated metal flashings shall be formed in accordance with current EverGuard construction details and SMACNA guidelines.
2. Coated metal sections used for roof edging, base flashing and coping shall be butted together with 1/4-inch gap to allow for expansion and contraction.

a. Hot-air weld a 6 inch wide reinforced membrane flashing strip to both sides of the joint, with approximately 1" on either side of the joint left un-welded to allow for expansion and contraction.
b. 2 inch wide aluminum tape can be installed over the joint as a bond-breaker, to prevent welding in this area.

3. Coated metal used for sealant pans, scupper inserts, corners of roof edging, base flashing and coping shall be overlapped or provided with separate metal pieces to create a continuous flange condition, and pop-riveted securely. Hot-air weld a 6 inch wide reinforced membrane flashing strip over all seams that will not be sealed during subsequent flashing installation.
4. Provide a 1/2 inch hem for all exposed metal edges to provide corrosion protection and edge reinforcement for improved durability.
5. Provide a 1/2 inch hem for all metal flange edges whenever possible to prevent wearing of the roofing and flashing membranes at the flange edge.
6. Coated metal flashings shall be nailed to wood nailers or otherwise mechanically attached to the roof deck, wall or curb substrates, in accordance with construction detail requirements.

C. Reinforced Membrane Flashings: TPO Extreme 60 mil or Standard 80 mil TPO Smooth Membrane.
1. The thickness of the flashing membrane shall be the same as the thickness of the roofing membrane.
2. Membrane flashing may either be installed loose or fully adhered to the substrate surface in accordance with "Construction Detail Requirements".
3. Where flashings are to be fully adhered, apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives.
a. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon for (Solvent Based) bonding adhesive.
b. A greater quantity of bonding adhesive may be required based upon the substrate surface condition.
c. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.
4. Apply the adhesive only when outside temperature is above 40 deg. F. Recommended minimum application temperature is 50 deg. F and rising to allow for easier adhesive application.
5. The membrane flashing shall be carefully positioned prior to application to avoid wrinkles and buckles.

D. Unreinforced Membrane Flashings:
1. Un-reinforced membrane is used to field-fabricate penetration or reinforcement flashings in locations where preformed corners and pipe boots cannot be properly installed.
2. Penetration flashings constructed of un-reinforced membrane are typically installed in two sections, a horizontal piece that extends onto the roofing membrane and a vertical piece that extends up the penetration.
a. The two pieces are overlapped and hot-air welded together.
3. The un-reinforced membrane flashing shall be adhered to the penetration surface.
a. Apply bonding adhesive at a rate resulting in 60 square feet/gallon of finished roofing material for solvent-based bonding adhesives.
b. Apply bonding adhesive to both the underside of the membrane and the substrate surface at 120 square feet per gallon for (Solvent Based) Bonding Adhesive.
c. A greater quantity of bonding adhesive may be required based upon the substrate surface condition.
d. The bonding adhesive must be allowed to dry until tacky to the touch before flashing membrane application.

E. Roof Edges:
1. Roof edge flashings are applicable for gravel stop and drip edge conditions as well as for exterior edges of parapet walls.

2. Flash roof edges with metal flanges nailed 4 inches O.C. to pressure-treated wood nailers.
   a. Where required, hot-air weld roof membrane to coated metal flanges.
3. When the fascia width exceeds 4 inches, coated metal roof edging must be attached with a continuous cleat to secure the lower fascia edge.
   a. The cleat must be secured to the building no less than 12 inches O.C.
4. Flash roof edge scuppers with a coated metal insert that is mechanically attached to the roof edge and integrated as a part of the metal edging.

F. Parapet and Building Walls:
1. Flash walls with EverGuard TPO membrane adhered to the substrate with bonding adhesive, loose applied (Less than 24" in height) or with coated metal flashing nailed 4" on center to pressure-treated wood nailers.
2. Secure membrane flashing at the top edge with a termination bar. Water Block shall be applied between the wall surface and membrane flashing underneath all exposed termination bars. Exposed termination bars shall be mechanically fastened 8" on center; termination bars that are counter flashed shall be fastened 12" on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at 12 inches on center.
4. All coated metal wall flashings and adhered membrane applied membrane flashings must be provided with separate metal counterflashings, or metal copings.
5. Metal counterflashings shall be required with fully adhered flashings to meet guarantee requirements. Exposed termination bars must be sealed with Flexseal roofing cement or Flexseal caulk grade must be covered by counterflashings.
6. Flash wall scuppers with a coated metal insert that is mechanically attached to the wall and integrated as part of the wall flashing.

G. Curbs and Ducts:
1. Flash curbs and ducts with EverGuard TPO membrane adhered to the curb substrate with bonding adhesive or with coated metal flashing nailed 4 inches on center to wood nailers.
2. Secure membrane flashing at the top edge with a termination bar.
   a. Water Block shall be applied between the curb/duct surface and membrane flashing underneath all termination bars.
   b. Exposed termination bars shall be mechanically fastened every 8 inches o.c.; termination bars that are counter flashed shall be fastened 12 inches on center.
3. Roof membrane must be mechanically attached along the base of walls with screws and plates (deck securement) or screws and inverted termination bar (wall securement) at 12 inches on center.
4. All coated metal curb flashings and loose applied membrane flashings must be provided with separate metal counterflashings, or metal copings.
5. Metal counterflashings shall be required with fully adhered flashings to meet guarantee requirements.
   a. Exposed termination bars must be sealed with Flexseal roofing cement or Flexseal caulk grade must be covered by counterflashings

3.8 METAL COPING INSTALLATION

A. Coping joints will be hidden splice plates with sealant.

B. Coping systems must have been ES-1 tested to be included in the roof manufacturer's warranty.

C. The lower level coping will utilize existing slope and use a standard front cleat style.

D. The lower coping shall have a 45 mil TPO Self-Adhered installed over the existing substrate structure before installation of the new metal coping system per manufacturer's detail.

E. The upper level coping will utilize a raised lip style front cleat and a mid-point support spacer.

F. The upper level new TPO roof membrane shall be installed to the outer edge of the building prior to the coping installation.

G. Front cleats shall be fastened at 12 inches on center with a number 10 wood screw.
1. Back side fasteners shall be a number 9 gasketed wood screw installed 18 inches on center.
2. Sealant will be NPC Solar Seal in colors to match the coping.

H. Roofing contractor fabrication will be allowed as long as metal shop is ES-1 approved and tested and design meets the specification. The fabrication option must also be approved by roofing manufacturer to meet and be included in the roofing system NDL Warranty.

3.9 ROOF DRAINS

A. Roof drains must be fitted with compression type clamping rings and strainer baskets.
1. Original-type cast iron and aluminum drains, as well as retrofit-type cast iron, aluminum or molded plastic drains are acceptable.

B. Roof drains must be provided with a minimum 36 inch x 36 inch sump.
1. Slope of tapered insulation within the sump shall not exceed 4 inches in 12 inches.

C. Extend the roofing membrane over the drain opening.
1. Locate the drain and cut a hole in the roofing membrane directly over the drain opening.
2. Provide a 1/2 inch of membrane flap extending past the drain flange into the drain opening.
3. Punch holes through the roofing membrane at drain bolt locations.

D. For cast iron and aluminum drains, the roofing membrane must be set in a full bed of water block on the drain flange prior to securement with the compression clamping ring.
1. Typical water block application is one 10.5 ounce cartridge per drain.

E. Lap seams shall not be located within the sump area.
1. Where lap seams will be located within the sump area, a separate roof membrane drain flashing a minimum of 12 inches larger than the sump area must be installed.
2. The roof membrane shall be mechanically attached 12 inches on center around the drain with screws and plates.
3. The separate roof drain flashing shall be heat welded to the roof membrane beyond the screws and plates, extended over the drain flange, and secured as above.

F. Tighten the drain compression ring in place.

3.10 ROOF WALKWAYS

A. Install walkway rolls at all roof access locations and other designated locations including roof-mounted equipment work locations and areas of repeated rooftop traffic.

B. Walkway pads must be spaced 2 inches apart to allow for drainage between the pads.

C. Heat-weld walkway rolls to the roof membrane surface continuously around the perimeter of the roll.

3.11 ROOF PROTECTION

A. Protect all partially and fully completed roofing work from other trades until completion.

B. Whenever possible, stage materials in such a manner that foot traffic is minimized over completed roof areas.

C. When it is not possible to stage materials away from locations where partial or complete installation has taken place, temporary walkways and platforms shall be installed in order to protect all completed roof areas from traffic and point loading during the application process.

D. Temporary tie-ins shall be installed at the end of each workday and removed prior to commencement of work the following day.

3.12 CLEAN UP

A. All work areas are to be kept clean, clear and free of debris at all times.

B. Do not allow trash, waste, or debris to collect on the roof.
   1. These items shall be removed from the roof on a daily basis.

C. All tools and unused materials must be collected at the end of each workday and stored properly off of the finished roof surface and protected from exposure to the elements.

D. Dispose of or recycle all trash and excess material in a manner conforming to current EPA regulations and local laws.

E. Properly clean the finished roof surface after completion, and make sure the drains and gutters are not clogged.

F. Clean and restore all damaged surfaces to their original condition.

END OF SECTION 075420

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 counterflashing. 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 counterflashing 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 099100 – PAINTING

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.
6. Zinc-Rich Industrial Maintenance Primers: 340 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 COLORS

A. Provide colors complying with General Motors Standards, 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.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.
6. Portland Cement 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.

4) BM: Super Spec HP P28 DTM Acrylic Gloss Enamel.

B. Other Exterior Exposed Steel:

1. Aliphatic, polyurethane coating applied to DFT of not less than 3.0 mils having:

a. GP: Amershield Aliphatic Urethane Gloss Enamel.

b. PPG: 95-812 Series Pitthane ULTRA Gloss Urethane Enamel.

c. S-W: Acrolon 218 HS Acrylic Polyurethane B65-600 B65V600.

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.

      2) PPG: 90-912 Pitt-Tech Plus Interior/Exterior DTM Primer.

      3) S-W: ProCryl Universal Metal Primer B66 Series.

      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.

      2) PPG: 90-1210 Pitt-Tech Plus Interior/Exterior DTM Semi-Gloss.

      3) S-W: Pro Industrial Acrylic Semi-Gloss B66-650 Series.

      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.

      2) PPG: 90-1310 Pitt-Tech Plus Interior/Exterior High Gloss DTM Enamel.

      3) S-W: Pro Industrial Acrylic Gloss B66-600 Series.

      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.

      2) PPG: 90-1310 Pitt-Tech Plus Interior/Exterior High Gloss DTM Enamel.

      3) S-W: Pro Industrial Acrylic Gloss B66-600 Series.

      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

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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.
6. Escutcheons.
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.

e. Hart Industries, International, Inc.

f. Watts Industries, Inc.; Water Products Div.

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.

d. Watts Industries, Inc.; Water Products Div.

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-inchminimum 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.

1. Characteristics: Post-hardening, volume-adjusting, nonstaining, noncorrosive, nongaseous, and recommended for interior and exterior applications.

2. Design Mix: 5000-psi, 28-day compressive strength.

3. Packaging: Premixed and factory packaged.

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.

E. Brazed Joints: Construct joints according to AWS's "Brazing Handbook," "Pipe and Tube" Chapter, using copper-phosphorus brazing filler metal complying with AWS A5.8.

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 2and 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.
4. Wet Piping Systems: Install dielectric coupling and nipple fittings 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 as indicated on drawings.

C. RD-1

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. Provide extension sleeve as required, roof sump receiver, and angular underdeck clamp.

D. RD-2 Overflow Drain

1. Basis-of-Design Product: Zurn ZC-100-EA-R-AC-XJ-89 roof drain, “Dura-Coated” cast iron body with cast iron dome strainer and 2-inch-high external dam. Provide extension sleeve as required, roof sump receiver, and angular underdeck clamp.

E. RD-3

1. Basis-of-Design Product: Zurn ZC-105-10-DP no-hub “control-flo” roof drain, “Dura-Coated” cast iron body with cast iron dome strainer. Provide extension sleeve as required, roof sump receiver, and angular underdeck clamp.

a. Provide products with up to 6 parabolic weirs. Refer to Mechanical Drawings for number of drains with weir openings.

F. RD-4 Overflow Drain

1. Basis-of-Design Product: Zurn ZC-100-EA-DP-XJ-89 overflow roof drain, “Dura-Coated” cast iron body with cast iron dome strainer and 2-inch-high external dam. Provide extension sleeve as required, roof sump receiver, and angular underdeck clamp.

G. Provide 2-inch high external dam for overflow drains.

H. 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.

B. Elastic Membrane Sheet: ASTM D 4068, flexible, chlorinated polyethylene, 40-mil minimum thickness.

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 4for 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

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