

Contract Routing Form

ROUTING: Routine

printed on: 03/29/2018

Contract between: Forward Construction Group LLC
 and Dept. or Division: Engineering Division
 Name/Phone Number:

Project: Summit Maintenance Facility - Building Improvements

Contract No.: 8152
 Enactment No.: RES-18-00209
 Dollar Amount: 275,458.00

File No.: 50484
 Enactment Date: 03/23/2018

(Please DATE before routing)

Signatures Required	Date Received	Date Signed
City Clerk	3-29-18	3-29-2018
Director of Civil Rights	3.30.18	4.5.18 FNS
Risk Manager	4.6.18	4/26/18 RN
Finance Director	4.6.18	4/26/18 mer
City Attorney	452 4-22-18	4-27-18
Mayor	04.27.18	04.30.18

Please return signed Contracts to the City Clerk's Office
 Room 103, City-County Building for filing.

Original + 2 Copies

03/29/2018 08:37:30 enjls - Paul Stauffer 266-4366

Dis Rights: OK / ~~N/A~~ / Problem - Hold
 Prev Wage: AA / Agency / No
 Contract Value: 275458
 AA Plan: Approved
 Amendment / Addendum # _____
 Type: POS / Delp / Sbdv / Gov't /
 Grant / ~~PW~~ Goal / Loan / Agrmt

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Boards, Commissions and Committees Members



Details Reports

File #:	50484	Version: 1	Name:	Awarding Public Works Contract No. 8152, Summit Maintenance Facility - Building Improvements.
Type:	Resolution		Status:	Passed
File created:	2/7/2018		In control:	<u>BOARD OF PUBLIC WORKS</u>
On agenda:	3/20/2018		Final action:	3/20/2018
Enactment date:	3/23/2018		Enactment #:	RES-18-00209
Title:	Awarding Public Works Contract No. 8152, Summit Maintenance Facility - Building Improvements.			
Sponsors:	<u>BOARD OF PUBLIC WORKS</u>			
Attachments:	1. <u>Contract 8152 .pdf</u>			

History (3) Text

Fiscal Note

The proposed resolution awards the contract for the Summit Maintenance Facility building improvements at total estimated cost of \$297,500. Funding is provided by GO Borrowing and is sufficiently budgeted within the Engineering Facilities Management Park Facility Improvements capital program; \$800,000 is budgeted within the program for 2018.

Title

Awarding Public Works Contract No. 8152, Summit Maintenance Facility - Building Improvements.

Body

BE IT RESOLVED, that the following low bids for miscellaneous improvements be accepted and that the Mayor and City Clerk be and are hereby authorized and directed to enter into a contract with the low bidders contained herein, subject to the Contractor's compliance with Section 39.02 of the Madison General Ordinances concerning compliance with the Affirmative Action provisions and **subject to the Contractor's compliance with Section 33.07 of the Madison General Ordinances regarding Best Value Contracting:**

BE IT FURTHER RESOLVED, that the funds be encumbered to cover the cost of the projects contained herein.

See attached document (Contract No. 8152) for itemization of bids.

Jurisdiction: Wisconsin

Demographics

Company Name: Granite Re, Inc.
Short Name:
SBS Company Number: 54219575
NAIC CoCode: 26310
FEIN: 73-1282413
Domicile Type: Foreign
State of Domicile: Oklahoma
Country of Domicile: United States
NAIC Group Number: 7 - FEDERATED MUT GRP
Organization Type: Stock
Date of Incorporation: 11/13/1986
Merger Flag: No

Address

Business Address
 Not Available
 Not Available, UN 99999
 United States

Mailing Address
 14001 Quailbrook Dr
 Oklahoma City, OK 73134
 United States

Statutory Home Office Address
 14001 Quailbrook Dr
 Oklahoma City, OK 73134
 United States

Main Administrative Office Address
 14001 Quailbrook Dr
 Oklahoma City, OK 73134
 United States

Phone, E-mail, Website

Phone

Type	Number
Mailing Primary Phone	(405) 752-2600
Mailing Fax Phone	(405) 749-6800
Mailing Toll Free Phone	(800) 440-5953
Statutory Home Office Primary Phone	(405) 752-2600
Statutory Home Office Fax Phone	(405) 749-6800
Statutory Home Office Toll Free Phone	(800) 440-5953
Main Admin Office Primary Phone	(405) 752-2600
Main Admin Office Fax Phone	(405) 749-6800

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Company Type

Company Type: Property and Casualty
Status: Active
Status Reason:
Status Date: 11/14/2001
Effective Date: 11/14/2001
Legacy State ID: 111641
Issue Date: 11/14/2001
Approval Date:
File Date:
Articles of Incorporation Received: No
Article No:
COA Number:

Appointments

Q con

Licensee Name	License Number	NPN	License Type	Line of Authority	Appointment Date	Effective Date	Expiration Date
CONNIE SMITH	16492915	16492915	Intermediary (Agent) Individual	Casualty	01/31/2017	03/01/2018	03/15/2019
CONNIE SMITH	16492915	16492915	Intermediary (Agent) Individual	Property	01/31/2017	03/01/2018	03/15/2019
CONNIE SMITH	16492915	16492915	Intermediary (Agent) Individual		03/21/2012	03/01/2017	03/15/2019

Line Of Business

Q Filter

Line of Business	Citation Type	Effective Date
Surety Insurance	Surety Insurance	11/14/2001

First Previous 1 Next Last

Contact

Q Filter

Contact Type	Preferred Name	Name	E-mail	Phone	Address
Registered Agent for Service of Process		*			Other CT CORPORATION SYSTEM 301 S BEDFORD ST STE 1 MADISON, WI 53703 United States

First Previous 1 Next Last

Company Merger

No results found.

Name Change History

Q Filter

Previous Name	New Name	Effective Date
	Granite Re, Inc.	

First Previous 1 Next Last

When Scott from Forward Construction Group dropped off the signed contract for Summit Maintenance, 8152 he said that the organization just had one officer.

Would fax the Financial information and send subcontractor list later today.

Alane Boutelle
3/22/18

\$275,458.00
FILE

BID OF FORWARD CONSTRUCTION GROUP, LLC

2018

PROPOSAL, CONTRACT, BOND AND SPECIFICATIONS

FOR

SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS

CONTRACT NO. 8152

MUNIS NO. 11653

IN

MADISON, DANE COUNTY, WISCONSIN

AWARDED BY THE COMMON COUNCIL
MADISON, WISCONSIN ON MARCH 20, 2018

CITY ENGINEERING DIVISION
1600 EMIL STREET
MADISON, WISCONSIN 53713

<https://bidexpress.com/login>

**SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS
CONTRACT NO. 8152**

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Displays available within Bid Express:

PROJECT MANUAL
DRAWINGS

This Proposal, and Agreement have
been prepared by: _____

**CITY ENGINEERING DIVISION
CITY OF MADISON
MADISON, DANE COUNTY, WISCONSIN**



Robert F. Phillips, P.E., City Engineer

RFP: ps

SECTION A: ADVERTISEMENT FOR BIDS AND INSTRUCTIONS TO BIDDERS

REQUEST FOR BID FOR PUBLIC WORKS CONSTRUCTION CITY OF MADISON, WISCONSIN

A BEST VALUE CONTRACTING MUNICIPALITY

PROJECT NAME:	SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS
CONTRACT NO.:	8152
SBE GOAL	8%
BID BOND	5%
PRE-BID WALK THROUGH MEETING (1:30 P.M.)	FEBRUARY 13, 2018
SBE PRE BID MEETING (1:00 P.M.)	FEBRUARY 16, 2018
PREQUALIFICATION APPLICATION DUE (2:00 P.M.)	FEBRUARY 15, 2018
BID SUBMISSION (2:00 P.M.)	FEBRUARY 22, 2018
BID OPEN (2:30 P.M.)	FEBRUARY 22, 2018
PUBLISHED IN WSJ	FEBRUARY 1, 8 & 15, 2018

PRE-BID WALK THROUGH MEETING:

A single pre-bid conference will be conducted to familiarize contractors with onsite conditions. All bidding contractors are encouraged to attend.

1. The meeting will be held at **1:30 pm on Tuesday, February 13th, 2018.**
2. This meeting will take place on site at the Summit Maintenance Facility located at 1902 Freeport Road, Madison Wisconsin.
3. A representative from the City and will be on hand to conduct the building walk through, discuss the plans, specifications and expectations of the contract.
4. Questions, clarifications will be answered per addendum.

SBE PRE BID MEETING: Representatives of the Affirmative Action Department will be present to discuss the Small Business Enterprise requirements at 1600 Emil Street, Madison Wisconsin.

PREQUALIFICATION APPLICATION: Forms are available on our website, www.cityofmadison.com/business/pw/forms.cfm. If not currently prequalified in the categories listed in Section A, an amendment to your Prequalification will need to be submitted prior to the same due date. Postmark is not applicable.

BIDS TO BE SUBMITTED by hand to 1600 EMIL ST., MADISON, WI 53713 or online at www.bidexpress.com.

THE BID OPENING is at 1600 EMIL ST., MADISON, WI 53713.

STANDARD SPECIFICATIONS

The City of Madison's Standard Specifications for Public Works Construction - 2018 Edition, as supplemented and amended from time to time, forms a part of these contract documents as if attached hereto.

These standard specifications are available on the City of Madison Public Works website, www.cityofmadison.com/Business/PW/specs.cfm.

The Contractor shall review these Specifications prior to preparation of proposals for the work to be done under this contract, with specific attention to Article 102, "BIDDING REQUIREMENTS AND CONDITIONS" and Article 103, "AWARD AND EXECUTION OF THE CONTRACT." For the convenience of the bidder, below are highlights of three subsections of the specifications.

SECTION 102.1: PRE-QUALIFICATION OF BIDDERS

In accordance with Wisconsin State Statutes 66.0901 (2) and (3), all bidders must submit to the Board of Public Works proof of responsibility on forms furnished by the City. The City requires that all bidders be qualified on a biennial basis.

Bidders must present satisfactory evidence that they have been regularly engaged in the type of work specified herein and they are fully prepared with necessary capital, materials, machinery and supervisory personnel to conduct the work to be contracted for to the satisfaction of the City. All bidders must be pre-qualified by the Board of Public Works for the type of construction on which they are bidding prior to the opening of the bid.

In accordance with Section 39.02(9)(a)l. of the General Ordinances, all bidders shall submit in writing to the Affirmative Action Division Manager of the City of Madison, a Certificate of Compliance or an Affirmative Action Plan at the same time or prior to the submission of the proof of responsibility forms.

The bidder shall be disqualified if the bidder fails to or refuses to, prior to opening of the bid, submit a Certificate of compliance, Affirmative Action Plan or Affirmative Action Data Update, as applicable, as defined by Section 39.02 of the General Ordinances (entitled Affirmative Action) and as required by Section 102.11 of the Standard Specifications.

SECTION 102.4 PROPOSAL

No bid will be accepted that does not contain an adequate or reasonable price for each and every item named in the Schedule of Unit Prices.

A lump sum bid for the work in accordance with the plans and specifications is required. The lump sum bid must be the same as the total amounts bid for the various items and it shall be inserted in the space provided.

All papers bound with or attached to the proposal form are considered a part thereof and must not be detached or altered when the proposal is submitted. The plans, specifications and other documents designated in the proposal form will be considered a part of the proposal whether attached or not.

A proposal submitted by an individual shall be signed by the bidder or by a duly authorized agent. A proposal submitted by a partnership shall be signed by a member/partner or by a duly authorized agent thereof. A proposal submitted by a corporation shall be signed by an authorized officer or duly authorized registered agent of such corporation, and the proposal shall show the name of the State under the laws of which such corporation was chartered. The required signatures shall in all cases appear in the space provided thereof on the proposal.

Each proposal shall be placed, together with the proposal guaranty, in a sealed envelope, so marked as to indicate name of project, the contract number or option to which it applies, and the name and address of the Contractor or submitted electronically through Bid Express (www.bidexpress.com). Proposals will be accepted at the location, the time and the date designated in the advertisement. Proposals received after the time and date designated will be returned to the bidder unopened.

SECTION 102.5: BID DEPOSIT (PROPOSAL GUARANTY)

All bids, sealed or electronic, must be accompanied with a Bid Bond equal to at least 5% of the bid or a Certificate of Annual/Biennial Bid Bond or certified check, payable to the City Treasurer. Bid deposit of the successful bidders shall be returned within forty-eight (48) hours following execution of the contract and bond as required.

MINOR DISCREPENCIES

Bidder is responsible for submitting all forms necessary for the City to determine compliance with State and City bidding requirements. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion or performance of the contract.

Bidders for this Contract(s) must be Pre-Qualified for at least one of the following type(s) of construction denoted by an

Building Demolition

- 101 Asbestos Removal
120 House Mover

- 110 Building Demolition

Street, Utility and Site Construction

- 201 Asphalt Paving
205 Blasting
210 Boring/Pipe Jacking
215 Concrete Paving
220 Con. Sidewalk/Curb & Gutter/Misc. Flat Work
221 Concrete Bases and Other Concrete Work
222 Concrete Removal
225 Dredging
230 Fencing
235 Fiber Optic Cable/Conduit Installation
240 Grading and Earthwork
241 Horizontal Saw Cutting of Sidewalk
242 Infrared Seamless Patching
245 Landscaping, Maintenance
246 Ecological Restoration
250 Landscaping, Site and Street
251 Parking Ramp Maintenance
252 Pavement Marking
255 Pavement Sealcoating and Crack Sealing
260 Petroleum Above/Below Ground Storage Tank Removal/Installation
262 Playground Installer

- 265 Retaining Walls, Precast Modular Units
270 Retaining Walls, Reinforced Concrete
275 Sanitary, Storm Sewer and Water Main Construction
276 Sawcutting
280 Sewer Lateral Drain Cleaning/Internal TV Insp.
285 Sewer Lining
290 Sewer Pipe Bursting
295 Soil Borings
300 Soil Nailing
305 Storm & Sanitary Sewer Laterals & Water Svc.
310 Street Construction
315 Street Lighting
318 Tennis Court Resurfacing
320 Traffic Signals
325 Traffic Signing & Marking
332 Tree pruning/removal
333 Tree, pesticide treatment of
335 Trucking
340 Utility Transmission Lines including Natural Gas, Electrical & Communications
399 Other _____

Bridge Construction

- 501 Bridge Construction and/or Repair

Building Construction

- 401 Floor Covering (including carpet, ceramic tile installation, rubber, VCT)
402 Building Automation Systems
403 Concrete
404 Doors and Windows
405 Electrical - Power, Lighting & Communications
410 Elevator - Lifts
412 Fire Suppression
413 Furnishings - Furniture and Window Treatments
415 General Building Construction, Equal or Less than \$250,000
420 General Building Construction, \$250,000 to \$1,500,000
425 General Building Construction, Over \$1,500,000
428 Glass and/or Glazing
429 Hazardous Material Removal
430 Heating, Ventilating and Air Conditioning (HVAC)
433 Insulation - Thermal
435 Masonry/Tuck pointing

- 437 Metals
440 Painting and Wallcovering
445 Plumbing
450 Pump Repair
455 Pump Systems
460 Roofing and Moisture Protection
464 Tower Crane Operator
461 Solar Photovoltaic/Hot Water Systems
465 Soil/Groundwater Remediation
466 Warning Sirens
470 Water Supply Elevated Tanks
475 Water Supply Wells
480 Wood, Plastics & Composites - Structural & Architectural
499 Other _____

State of Wisconsin Certifications

- 1 Class 5 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for quarries, open pits and road cuts.
2 Class 6 Blaster - Blasting Operations and Activities 2500 feet and closer to inhabited buildings for trenches, site excavations, basements, underwater demolition, underground excavations, or structures 15 feet or less in height.
3 Class 7 Blaster - Blasting Operations and Activities for structures greater than 15' in height, bridges, towers, and any of the objects or purposes listed as "Class 5 Blaster or Class 6 Blaster".
4 Petroleum Above/Below Ground Storage Tank Removal and Installation (Attach copies of State Certifications.)
5 Hazardous Material Removal (Contractor to be certified for asbestos and lead abatement per the Wisconsin Department of Health Services, Asbestos and Lead Section (A&LS).) See the following link for application: www.dhs.wisconsin.gov/Asbestos/Cert. State of Wisconsin Performance of Asbestos Abatement Certificate must be attached.
6 Certification number as a Certified Arborist or Certified Tree Worker as administered by the International Society of Arboriculture
7 Pesticide application (Certification for Commercial Applicator For Hire with the certification in the category of turf and landscape (3.0) and possess a current license issued by the DATCP)
8 State of Wisconsin Master Plumbers License.

SECTION B: PROPOSAL

Please refer to the
Bid Express Website
at <https://bidexpress.com>
look up contract number
and go to
Section B: Proposal Page

You can access all City of Madison bid solicitations for FREE at www.bidexpress.com

Click on the "Register for Free" button and follow the instructions to register your company and yourself. You will be asked for a payment subscription preference, since you may wish to bid online someday. Simply choose the method to pay on a 'per bid' basis. This requires no payment until / unless you actually bid online. You can also choose the monthly subscription plan at this time. You will, however, be asked to provide payment information. Remember, you can change your preference at anytime. You will then be able to complete your free registration and have full access to the site. Your free access does not require completion of the 'Digital ID' process, so you will have instant access for viewing and downloading. To be prepared in case you ever do wish to bid online, you may wish to establish your digital ID also, since you cannot bid without a Digital ID.

If you have any problems with the free registration process, you can call the bidexpress help team, toll free at 1-888-352-2439 (option 1, option1).

SECTION C: SMALL BUSINESS ENTERPRISE

Instructions to Bidders City of Madison SBE Program Information

2 Small Business Enterprise (SBE) Program Information

2.1 Policy and Goal

The City of Madison reaffirms its policy of nondiscrimination in the conduct of City business by maintaining a procurement process which remains open to all who have the potential and ability to sell goods and services to the City. It is the policy of the City of Madison to allow Small Business Enterprises (SBE) maximum feasible opportunity to participate in City of Madison contracting. The bidder acknowledges that its bid has been submitted in accordance with the SBE program and is for the public's protection and welfare.

Please refer to the "ADVERTISEMENT FOR BIDS" for the goal for the utilization of SBEs on this project. SBEs may participate as subcontractors, vendors and/or suppliers, which provide a commercially useful function. The dollar value for SBE suppliers or 'materials only' vendors shall be discounted to 60% for purposes of meeting SBE goals.

A bidder which achieves or exceeds the SBE goal will be in compliance with the SBE requirements of this project. In the event that the bidder is unable to achieve the SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Failure to either achieve the goal or demonstrate a good faith effort to do so will be grounds for the bidder being deemed a non-responsible contractor ineligible for award of this contract.

A bidder may count towards its attainment of the SBE goal only those expenditures to SBEs that perform a commercially useful function. For purposes of evaluating a bidder's responsiveness to the attainment of the SBE goal, the contract participation by an SBE is based on the percentage of the total base bid proposed by the Contractor. The total base bid price is inclusive of all addenda.

Work performed by an SBE firm in a particular transaction can be counted toward the goal only if it involves a commercially useful function. That is, in light of industry practices and other relevant considerations, does the SBE firm have a necessary and useful role in the transaction, of a kind for which there is a market outside the context of the SBE Program, or is the firm's role a superfluous step added in an attempt to obtain credit towards goals? If, in the judgment of the Affirmative Action Division, the SBE firm will not perform a commercially useful function in the transaction, no credit towards goals will be awarded.

The question of whether a firm is performing a commercially useful function is completely separate from the question of whether the firm is an eligible SBE. A firm is eligible if it meets the definitional criteria and ownership and control requirements, as set forth in the City of Madison's SBE Program.

If the City of Madison determines that the SBE firm is performing a commercially useful function, then the City of Madison must then decide what that function is. If the commercially useful function is that of an SBE vendor / supplier that regularly transacts business with the respective product, then the City of Madison will count 60% of the value of the product supplied toward SBE goals.

To be counted, the SBE vendor / supplier must be engaged in selling the product in question to the public. This is important in distinguishing an SBE vendor / supplier, which has a regular trade with a variety of customers, from a firm which performs supplier-like functions on an ad hoc basis or for only one or two contractors with whom it has a special relationship.

A supplier of bulk goods may qualify as an eligible SBE vendor / supplier if it either maintains an inventory or owns or operates distribution equipment. With respect to the distribution equipment; e.g., a fleet of trucks, the term "operates" is intended to cover a situation in which the supplier leases the equipment on a regular basis for its entire business. It is not intended to cover a situation in which the firm simply provides drivers for trucks owned or leased by another party; e.g., a prime contractor, or leases such a party's trucks on an ad hoc basis for a specific job.

If the commercially useful function being performed is not that of a qualified SBE vendor / supplier, but rather that of delivery of products, obtaining bonding or insurance, procurement of personnel, acting as a broker or manufacturer's representative in the procurement of supplies, facilities, or materials, etc., only the fees or commissions will apply towards the goal.

For example, a business that simply transfers title of a product from manufacturer to ultimate purchaser; e. g., a sales representative who re-invoices a steel product from the steel company to the Contractor, or a firm that puts a product into a container for delivery would not be considered a qualified SBE vendor / supplier. The Contractor would not receive credit based on a percentage of the cost of the product for working with such firms.

Concerning the use of services that help the Contractor obtain needed supplies, personnel, materials or equipment to perform a contract: only the fee received by the service provider will be counted toward the goal. For example, use of a SBE sales representative or distributor for a steel company, if performing a commercially useful function at all, would entitle the Contractor receiving the steel to count only the fee paid to the representative or distributor toward the goal. This provision would also govern fees for professional and other services obtained expressly and solely to perform work relating to a specific contract.

Concerning transportation or delivery services: if an SBE trucking company picks up a product from a manufacturer or a qualified vendor / supplier and delivers the product to the Contractor, the commercially useful function it is performing is not that of a supplier, but simply that of a transporter of goods. Unless the trucking company is itself the manufacturer or a qualified vendor / supplier in the product, credit cannot be given based on a percentage of the cost of the product. Rather, credit would be allowed for the cost of the transportation service.

The City is aware that the rule's language does not explicitly mention every kind of business that may contribute work on this project. In administering these programs, the City would, on a case-by-case basis, determine the appropriate counting formula to apply in a particular situation.

2.2 Contract Compliance

Questions concerning the SBE Program shall be directed to the Contract Compliance Officer of the City of Madison Department of Civil Rights, Affirmative Action Division, 210 Martin Luther King, Jr. Blvd., Room 523, Madison, WI 53703; telephone (608) 266-4910.

2.3 Certification of SBE by City of Madison

The Affirmative Action Division maintains a directory of SBEs which are currently certified as such by the City of Madison. Contact the Contract Compliance Officer as indicated in Section 2.2 to receive a copy of the SBE Directory or you may access the SBE Directory online at www.cityofmadison.com/dcr/aaTBDDir.cfm.

All contractors, subcontractors, vendors and suppliers seeking SBE status must complete and submit the **Targeted Business Certification Application** to the City of Madison Affirmative Action Division by the time and date established for receipt of bids. A copy of the Targeted Business Certification Application is available by contacting the Contract Compliance Officer at the address and telephone indicated in Section 2.2 or you may access the Targeted Business Certification Application online at www.cityofmadison.com/dcr/aaTBDDir.cfm. Submittal of the Targeted Business Certification Application by the time specified does not guarantee that the applicant will be certified as a SBE eligible to be utilized towards meeting the SBE goal for this project.

2.4 Small Business Enterprise Compliance Report

2.4.1 Good Faith Efforts

Bidders shall take all necessary affirmative steps to assure that SBEs are utilized when possible and that the established SBE goal for this project is achieved. A contractor who self performs a portion of the work, and is pre-qualified to perform that category of work, may subcontract that portion of the work, but shall not be required to do so. When a bidder is unable to achieve the established SBE goal, the bidder must demonstrate that a good faith effort to do so was made. Such a good faith effort should include the following:

- 2.4.1.1 Attendance at the pre-bid meeting.
- 2.4.1.2 Using the City of Madison's directory of certified SBEs to identify SBEs from which to solicit bids.
- 2.4.1.3 Assuring that SBEs are solicited whenever they are potential sources.
- 2.4.1.4 Referring prospective SBEs to the City of Madison Affirmative Action Division for certification.
- 2.4.1.5 Dividing total project requirements into smaller tasks and/or quantities, where economically feasible, to permit maximum feasible SBE participation.
- 2.4.1.6 Establishing delivery schedules, where requirements permit, which will encourage participation by SBEs.
- 2.4.1.7 Providing SBEs with specific information regarding the work to be performed.
- 2.4.1.8 Contacting SBEs in advance of the deadline to allow such businesses sufficient time to prepare a bid.
- 2.4.1.9 Utilizing the bid of a qualified and competent SBE when the bid of such a business is deemed reasonable (i.e. 5% above the lowest bidder), although not necessarily low.
- 2.4.1.10 Contacting SBEs which submit a bid, to inquire about the details of the bid and confirm that the scope of the work was interpreted as intended.
- 2.4.1.11 Completion of Cover Page (page C-6), Summary Sheet (page C-7) and SBE Contact Reports (pages C-8 and C9) if applicable.

2.4.2 Reporting SBE Utilization and Good Faith Efforts

The Small Business Enterprise Compliance Report is to be submitted by the bidder with the bid: This report is due by the specified bid closing time and date. Bids submitted without a completed SBE Compliance Report as outlined below may be deemed non-responsible and the bidder ineligible for award of this contract. Notwithstanding any language to the contrary contained herein, the City may exercise its discretion to allow bidders to correct or supplement submissions after bid opening, if the minor discrepancy, bid irregularity or omission is insignificant and not one related to price, quality, quantity, time of completion, performance of the contract, or percentage of SBE utilization.

2.4.2.1 If the Bidder meets or exceeds the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

- 2.4.2.1.1 **Cover Page**, Page C-6; and
- 2.4.2.1.2 **Summary Sheet**, C-7.

2.4.2.2 If the bidder does not meet the goal established for SBE utilization, the Small Business Enterprise Compliance Report shall consist of the following:

- 2.4.2.2.1 **Cover Page**, Page C-6;
- 2.4.2.2.2 **Summary Sheet**, C-7; and
- 2.4.2.2.3 **SBE Contact Report**, C-8 and C-9. (A separate Contact Report must be completed for each applicable SBE which is not utilized.)

2.5 Appeal Procedure

A bidder which does not achieve the established goal and is found non-responsible for failure to demonstrate a good faith effort to achieve such goal and subsequently denied eligibility for award of contract may appeal that decision to the Small Business Enterprises Appeals Committee. All appeals shall be made in writing, and shall be delivered to and received by the City Engineer no later than 4:30 PM on the third business day following the bidder's receipt of the written notification of ineligibility by the Affirmative Action Division Manager. Postmark not acceptable. The notice of appeal shall state the basis for the appeal of the decision of the Affirmative Action Division Manager. The Appeal shall take place in accordance with Madison General Ordinance 33.54.

2.6 SBE Requirements After Award of the Contract

The successful bidder shall identify SBE subcontractors, suppliers and vendors on the subcontractor list in accordance with the specifications. The Contractor shall submit a detailed explanation of any variances between the listing of SBE subcontractors, vendors and/or suppliers on the subcontractor list and the Contractor's SBE Compliance Report for SBE participation.

No change in SBE subcontractors, vendors and/or suppliers from those SBEs indicated in the SBE Compliance Report will be allowed without prior approval from the Engineer and the Affirmative Action Division. The contractor shall submit in writing to the City of Madison Affirmative Action Division a request to change any SBE citing specific reasons which necessitate such a change. The Affirmative Action Division will use a general test of reasonableness in approving or rejecting the contractor's request for change. If the request is approved, the Contractor will make every effort to utilize another SBE if available.

The City will monitor the project to ensure that the actual percentage commitment to SBE firms is carried out.

2.7 SBE Definition and Eligibility Guidelines

A Small Business Enterprise is a business concern awarded certification by the City of Madison. For the purposes of this program a Small Business Enterprise is defined as:

- A. An independent business operated under a single management. The business may not be a subsidiary of any other business and the stock or ownership may not be held by any individual or any business operating in the same or a similar field. In determining whether an entity qualifies as a SBE, the City shall consider all factors relevant to being an independent business including, but not limited to, the date the business was established, adequacy of its resources for the work in which it proposes to involve itself, the degree to which financial, equipment leasing and other relationships exist with other ineligible firms in the same or similar lines of work. SBE owner(s) shall enjoy the customary incidents of ownership and shall share in the risks and profits commensurate with their enjoyment interests, as demonstrated by an examination of the substance rather than form or arrangements that may be reflected in its ownership documents.
- B. A business that has averaged no more than \$4.0 million in annual gross receipts over the prior three year period and the principal owner(s) do not have a personal net worth in excess of \$1.32 million.

Firm and/or individuals that submit fraudulent documents/testimony may be barred from doing business with the City and/or forfeit existing contracts.

SBE certification is valid for one (1) year unless revoked.

SECTION D: SPECIAL PROVISIONS

SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS CONTRACT NO. 8152

It is the intent of these Special Provisions to set forth the final contractual intent as to the matter involved and shall prevail over the Standard Specifications and plans whenever in conflict therewith. In order that comparisons between the Special Provisions can be readily made, the numbering system for the Special Provisions is equivalent to that of the Specifications.

Whenever in these Specifications the term "Standard Specifications" appears, it shall be taken to refer to the City of Madison Standard Specifications for Public Works Construction and Supplements thereto.

SECTION 102.12 BEST VALUE CONTRACTING

This Contract shall be considered a Best Value Contract if the Contractor's bid is equal to or greater than \$61,000 for a single trade contract; or equal to or greater than \$297,500 for a multi-trade contract pursuant to MGO 33.07(7).

SECTION 103 AWARD AND EXECUTION OF THE CONTRACT

The awarded Contractor shall completely execute the signing of all contract documents and submit them to City Engineering (Attn: Alane Boutelle, 1600 Emil Street, Madison, WI 53703) prior to **12:00 pm on Thursday, March 22, 2018**. Delays in turning in the required completed contract documents will not adjust the project completion date. Payment and Performance Bonds shall be dated no sooner than **Wednesday, March 21, 2018**.

SECTION 109.2 PROSECUTION OF THE WORK

Work shall begin only after the contract is completely executed. The Contractor shall begin work within seven (7) days after receiving the start work letter. It is anticipated that the start work letter shall be issued on or about **April 23rd, 2018**. Within 12 calendar days after the effective date of the Start Work Letter, the Contractor shall provide a schedule per Section 1.17 Schedule of Operations of Division 01 00 00 General Requirements.

The North Building will be ready for demolition on **September 3rd, 2018**. The contractor shall proceed with the work at this time and continue at such a rate as to have the North Building ready for occupancy by **December 15th, 2018**. In order to avoid winter conditions, the contractor has the option to complete any other remaining work at the facility by **June 15th, 2019**.

SECTION 109.7 TIME OF COMPLETION

Construction Closeout: The point in the contract where all contractual requirements associated with the execution of the work as described in the plans, specifications, and other documents have been successfully met.

Contract Closeout: The point in the contract where all contractual requirements associated with the City of Madison, Board of Public Works contract has been successfully met.

Construction Closeout shall occur on or before **June 16th, 2019**.

Contract Closeout shall occur within 60 calendar days from construction closeout.

SECTION 102.9**BIDDER'S UNDERSTANDING**

Tax Exempt Status. Effective with all contracts executed after January 1, 2016, the sales price from the sale, storage, use or other consumption of tangible personal property that is used in conjunction with a public works improvement for a tax exempt entity (including the City of Madison), is exempt from State sales tax. Said property must become a component of the project owned by the tax exempt entity and includes: any building; shelter; parking lot; parking garage; athletic field; storm sewer; water supply system; or sewerage and waste water treatment facility, but does not include a highway, street or road. The contractor shall ensure that the exemption for sales and use tax available under Wis. Stat. Sec. 77.54(9m) applies where available. The contractor shall provide all necessary documentation as required by the State of Wisconsin and the City of Madison to comply with this exemption.

See link to [Wisconsin Department of Revenue Tax Bulletin, January 2016, Number 192 and 2015 Wis. Act 126](#) for additional information.

BIDDING DOCUMENTS

**PROJECT MANUAL
SUMMIT MAINTENANCE FACILITY- BUILDING
IMPROVEMENTS**

CONTRACT# 8152

**LOCATION OF WORK:
SUMMIT MAINTENANCE FACILITY
1902 FREEPORT ROAD
MADISON WISCONSIN**

FEBRUARY 1, 2018



CONTACTS:

CITY OF MADISON:

Engineering Division
City-County Building, Room 118
210 Martin Luther King Jr. Blvd.
Madison, WI 53703
(608) 266-4366

ENGINEER, HVAC:

HEIN Engineering Group
Michael Hein, PE, Project Engineer
17 Applegate Court, Suite #200
Madison, WI 53713
(608) 288-9260

ENGINEER, STRUCTURAL

JSD PROFESSIONAL SERVICES, INC
Preston Baker
161 Horizon Drive, Suite 101
Verona, WI 53593
(608) 848-5060

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1
2
3
4 **PART 1 – GENERAL**

5
6 **1.1. SCOPE**

7 A. The work under this section includes general rules for the project.

8
9 **The scope of work for the North Building includes:**

- 10 • Demo the existing roof structure down to the CMU wall
11 • Repoint the existing CMU wall and miscellaneous wall patching
12 • Remove existing glass block windows and fill in with CMU
13 • Patch west foundation wall
14 • Paint and flash lintels above hollow metal doors
15 • Install new overhead doors and operators
16 • Install new hollow metal doors and hardware
17 • Extend the existing wall 48" in height with new glass block windows and expanded opening for new overhead doors.
18 • Install new roof system including trusses, decking, asphalt shingles, soffit, fascia, gutters and downspouts
19 • Repair interior concrete floor
20 • Install new gable end siding
21 • Install new ventilation system and controls
22 • Install new lighting and sensors
23 • Install new electrical panel board with associated conduit receptacles
24 • Install two new bollards on the site
25 • Interior and exterior painting/caulking

26
27 **The scope of work for the South Building includes:**

- 28 • Installation of new EPDM roofing system
29 • Installation of fascia, gutters and downspouts
30 • Repair damaged CMU wall
31 • Repairs to existing exterior stucco wall finishing system DAFS
32 • Exterior painting/caulking, includes doors and replacement of miscellaneous trim

33
34 **The proposal page will request individual bids for the North and South Buildings.** Utilize this outline as a guideline to separate
35 the scope of work in order to provide a lump sum bid for each. This outline does not include all aspects of the work necessary
36 to complete all work. The contractor shall include in each individual bid all materials and work necessary to provide a complet-
37 ed project as specified in the plans and specifications.

38
39 **1.2. PRE-BID INFORMATION**

40 A. There will be a pre-bid tour of the existing building on **Tuesday, February 13th, 2018 at 1:30 PM** to provide bidders the op-
41 portunity to acquaint themselves with the project. A representative from the designer's office will be present to take ques-
42 tions that will be answered by addendum. Alternate site visits may be arranged with the Project Manager.

43
44 **1.3. CONTACTS**

- 45 A. Send all pre-bid inquiries to the owner's project management
46 B. The owner's representative and designee for project management:
47 1. Paul Stauffer
48 2. Company: City of Madison
49 3. Address: Room 115, 210 Martin Luther King Jr. Blvd.
50 4. Phone: Office (608)266-4366, Cell (608) 575-5270
51 5. Email: pstauffer@cityofmadison.com
52 C. The owner's designee for engineering is:
53 HVAC
54 1. Michael Hein
55 2. Company: Hein Engineering Group.
56 3. Address: 17 Applegate Court. Suite #200
57 4. Phone: (608) 288-9260
58 5. Email: hein@chorus.net
59 STRUCTURAL
60 6. Preston Baker
61 7. Company: JSD Professional Services
62 8. Address: 161 Horizon Drive, Suite 101
63 9. Phone: (608) 848-5060
64 10. Email: preston.baker@jsdinc.com

1
2 **1.4. QUALIFICATIONS OF BIDDER**

- 3 A. By submitting the bid, the bidder and each subcontractor certifies as to meeting the following requirements:
4 1. Has completed one projects of at least 50% of the size or value of the division of work being bid and the type of work
5 completed is similar to that being bid. Additional requirements will be described in the appropriate technical section of
6 these specifications.
7 2. Has access to all necessary equipment and has organizational capacity and technical competence necessary to do the
8 work properly and expeditiously.
9 3. Maintains a permanent place of business.
10 4. Additional qualifications as stated in project specifications.

11
12 **1.5. WORK BY THE OWNER AND OWNER FURNISHED EQUIPMENT**

- 13 A. Any asbestos removal shall be performed by owner under a separate contract. There is no anticipated asbestos removal
14 anticipated for this project, however, existing building materials that may have hazardous content and are located within
15 the work area (example: floor tile, ceiling tile, pipe insulation) shall be sampled, tested, and removed by the City. If any sus-
16 spect hazardous building materials are found by the contractor during demolition or renovation work that have not been
17 sampled and tested, work must stop and a certified hazardous material inspector must be contacted by the City to assess
18 the situation. Inaccessible areas may exist within the facility.
19 B. There is no work that is to be completed by the owner. A separate contractor shall be let by the City for repaving the as-
20 phalt parking lot, and upgrading the storm water pipe between the North and South Building. This contract will provide for
21 the storm water drain pipes for the west downspouts on the west end of both building. Curbing will also be installed
22 around the perimeter of the buildings. Work shall not be concurrent with this contract. Coordination will be thru the City
23 Project manager.

24
25 **1.6. SALVAGE MATERIALS**

- 26 A. Refer to plan set for items that will be salvaged for reuse or turned over to the City. All other materials removed shall be-
27 come the property of and shall be disposed of by the Contractor.

28
29 **1.7. PROVISIONS FOR FUTURE WORK**

30 Not applicable.

31
32 **1.8. SPECIAL SITE CONDITIONS**

- 33 A. Unless otherwise noted, construction operations shall be limited to the hours between **7:30 a.m. and 6:00 p.m.**, Mondays
34 through Fridays, except for holidays. A request must be made to the owner forty-eight hours in advance for approval of
35 work days or hours other than those stated above. Compliance is required with applicable Noise Ordinances.
36 B. A temporary field office is not required.
37 C. The Contractor shall provide and maintain sanitary temporary toilets, located where directed by the owner, in sufficient
38 number required for the force employed. The toilets shall comply with International Building Code Chapter 29 on Plumbing
39 Systems. Toilets shall be self-contained chemical type. The Contractor shall maintain and supply the temporary toilets in a
40 sanitary condition at all times.

41
42 **1.9. ALTERNATES**

- 43 A. Not applicable

44
45 **1.10. STANDARD SPECIFICATIONS**

- 46 A. The City of Madison Standard Publications for Public Works Construction (Edition at publication date of this bid) forms a
47 part of these contract documents as if attached hereto. These Standard Specifications are available from the City Engineer,
48 City Engineering Division, Room 115, City County Building, 210 Martin Luther King Jr. Blvd., Madison, WI 53710 or electroni-
49 cally from the City Website <http://www.cityofmadison.com/business/pw/specs.cfm>. The Contractor shall review these
50 standard specifications prior to preparation of proposal for the work to be done under this contract. Failure to do so does
51 not relive the Contractor from meeting all requirements.

52
53 **1.11. GENERAL REQUIREMENTS**

- 54 A. All articles in these General Requirements are applicable to all Divisions fully as if repeated within that Division. The Condi-
55 tions of the Contract, General and Supplementary General Conditions, and these General Requirements shall apply to the
56 Contractor engaged in this work. Items listed under Scope of Work are not necessarily all inclusive. These specifications and
57 drawings are intended to include everything necessary to perform the entire work properly. Every item necessarily required
58 might not be specifically mentioned or shown. Unless expressly stated, all systems and equipment shall be complete and
59 operable. All devices and installation methods necessary for a functioning system are considered included in this contract
60 even if a detail is missing or unclear. The words "furnish", "install", "as required", and "provide" shall mean the same in a
61 sense that the Contractor shall furnish and install all the necessary materials, apparatus, and devices to complete the
62 equipment and systems installation herein specified, except such parts as are specifically exempted herein. This also in-
63 cludes that the contractor demolishes and disposes of an existing item if demolition is required to install the new item, even
64 if demolition drawings or specification don't mention demolition of the specific item. If an item is either called for in the
65 specifications or shown on the plans, it shall be considered sufficient for the inclusion of said item in this contract.

- 1 B. The terms "city", "owner", "city engineer" and "project manager" are used interchangeably. The terms "contractor", "sub-
- 2 contractor" and "general contractor" are used interchangeably.
- 3 C. Portions of these specifications are of the abbreviated, simplified type and may include incomplete sentences. Omissions of
- 4 words or phrases such as "the Contractor shall", "in conformity with", "shall be", "as noted on the drawings", "in accord-
- 5 ance with details", are intentional. Omitted words or phrases shall be supplied by inference in the same manner, as they
- 6 are when a note occurs on the drawings. Such terms as approved, reviewed, equal, as directed, , as permitted, acceptable,
- 7 satisfactory mean by or to the owner.
- 8 D. If a conflict exists within the Specifications or exists within the Drawings, the Contractor shall furnish the item, system, or
- 9 workmanship, which is the highest quality, largest, largest quantity or most closely fits the owner's intent. Materials and
- 10 labor shall be new (unless noted or stated otherwise), first class, and workmanlike, and shall be subject at all times to the
- 11 owner's inspections, tests and approval from the commencement until the acceptance of the completed work. Whenever a
- 12 particular manufacturer's product is named, it is intended to establish a level of quality and performance requirements un-
- 13 less more explicit restrictions are stated to apply. It must be understood that the details and drawings are diagrammatic.
- 14 The Contractor shall verify all dimensions at the site and be responsible for their accuracy. If items are too large to fit into
- 15 existing space Contractor shall provide smaller model of same type upon approval by owner at no cost to owner. All sizes as
- 16 given are minimum except as noted. Prior to bidding, bidder must visit site to become familiar and verify existing condi-
- 17 tions. Failure to do so does not relieve the bidder from the responsibility to verify existing conditions, to point out errors in
- 18 drawings or specifications or code violations.
- 19 E. The area to be set aside for the work under this contract is shown on the drawings, and the Contractor shall confine the
- 20 construction to the immediate area within the construction limits. The Contractor shall immediately upon entering the site
- 21 for purpose of beginning work, locate general reference points and take such action as is necessary to prevent their de-
- 22 struction. The Contractor shall lay out its work and be responsible for all lines, elevations and measurements of the build-
- 23 ing and other work executed under its Contract. The Contractor must exercise proper precaution to verify dimensions on
- 24 the drawings before laying out work and will be held responsible for any error resulting from failure to exercise such pre-
- 25 caution. The Contractor shall verify grades, lines, levels, locations, and dimensions as shown on drawings and report any er-
- 26 rors or inconsistencies to owner before commencing work. Starting of work by the Contractor shall imply acceptance of ex-
- 27 isting conditions. Confine all operations, equipment, apparatus and storage of materials, to the immediate area of work to
- 28 the greatest possible extent. Contractor shall ascertain, observe and comply with all rules and regulations in effect on the
- 29 project site, including but not limited to parking and traffic regulations, use of walks, security restrictions and hours of al-
- 30 lowable ingress and egress. Any special traffic control during construction involving lane closures shall be in accordance
- 31 with the federal standard, Manual of Uniform Traffic Control Devices.
- 32 F. The work site shall be kept clean and neat at all times. Accumulation of debris shall be avoided and all new equipment and
- 33 material shall be stored neatly and protected. Failure to comply will result in the contractor responsible for the disorderly
- 34 conditions to be removed from job site.
- 35 G. Owner will not furnish Watchpersons. The Contractor shall provide such precautionary measures, to include the furnishing
- 36 of watchpersons if deemed necessary, to protect persons and property from damage or loss where the Contractor's work is
- 37 involved. The contractor is responsible for securing any material stored on site. In case of theft or damage

38
39 **1.12. CONTRACTOR'S RESPONSIBILITY PRIOR BIDDING**

- 40 A. Bidders shall bring inadequacies, omissions or conflicts to owner's attention at least ten (10) days before the date set for
- 41 bid submission. Prompt clarification will be supplied to all bidders of record by addendum. Failure to request clarification or
- 42 interpretation of the drawings and specifications will not relieve the successful Bidder of responsibility. Signing of the con-
- 43 tract will be considered as implicitly denoting that the Contractor has thorough understanding of the scope of work, existing
- 44 conditions, and comprehension of the contract documents. Owner is not responsible for verbal instructions.
- 45 B. During bidding time owner will allow contractors to visit the site to familiarize themselves with the existing conditions and
- 46 to ask questions for clarification. Failure to attend the scheduled walkthrough implies that the contractor accepts all exist-
- 47 ing conditions and includes all work to handle existing conditions in his bid price.
- 48 C. Prior bidding, bidder must obtain information on payment conditions, discounts, shipping charges, and other cost from
- 49 vendor and/or manufacturer of the products specified.

50
51 **1.13. PAYMENT AND CHANGE ORDERS**

- 52 A. Refer to Sections:
- 53 1. 10 26 57 Change Order Requests (COR)
- 54 2. 10 26 63 Change Order (CO)
- 55 Located at the end of this section.

56
57 **1.14. COOPERATION AND RESPONSIBILITIES BETWEEN TRADES**

- 58 A. The Contractor assumes responsibility for all work specified in this contract except for work explicitly noted as be done by
- 59 owner or a Contractor separately hired by owner. The Contractor coordinate the work of all trades on the project. If plans
- 60 or specifications designate parts of the work to be done by a specific trade it is meant as a suggestion only. It is up to the
- 61 trades to agree on division of work and cost. Any work not done by a subcontractor will be the responsibility of the contrac-
- 62 tor (general contractor, party the owner is in contract with).
- 63 B. All Contractors shall work in cooperation with the Contractor and with each other, and fit their work into the structure as
- 64 job conditions may demand. Owner shall make all final decisions as to the right-of-way and run of pipe, ducts, etc., at pre-
- 65 arranged meetings with responsible representatives of the Contractors involved. Contractor(s) shall coordinate the work

- 1 with adjacent work with other Contractors prior to installation and shall cooperate with all other trades to facilitate the
2 general progress of the work. The Contractor shall coordinate and schedule the work of all its subcontractors, and shall
3 furnish all information required by them for proper scheduling and execution of the work. In the same manner, the Con-
4 tractor shall coordinate the work with that of owner, and any other Contractor operating in the area, including reasonable
5 adjustments of schedule in order to allow other Contractors or the owner to do their work. Any installed work that is not
6 coordinated and that interferes with other Contractor's work shall be removed or relocated at the Contractor's expense.
7 C. In case it is indicated which trade is responsible for which work, this is meant as a suggestion and it is the Contractor's re-
8 sponsibility in its contracts with subcontractors to clarify who ultimately will do the work. If conflicts arise between the Con-
9 tractor and subcontractor about who is responsible for which work to be done it is the Contractor's responsibility to make
10 sure the work gets done in time even if the dispute between Contractor and subcontractor gets settled later.

11 1.15. SUBMITTALS

- 12
- 13 A. Documents have to be submitted in electronic form (PDF) as described below no later than 3 business days after start work
14 letter is issued. Owner will review, and process shop drawings and other required submittals with reasonable promptness.
15 No delay will be allowed in the progress of the job attributable to Contractor's failure to supply submittals in time. PDF shall
16 be in good quality in electronic original from manufacturer. Scanned PDF are not acceptable.
- 17 B. The Contractor shall submit an electronic copy of all shop drawings, submittal data consisting of brochures, catalogs, mate-
18 rial lists, wiring diagrams, Material Safety Data Sheets (MSDS), samples, erection drawings, and equipment layouts for re-
19 view by owner. General catalog sheets showing a series of the same device is not acceptable unless the specific model is
20 clearly marked. Each submittal shall be provided together with a transmittal letter or form. Each original transmittal shall
21 be assigned a transmittal number. The number shall begin with the first initial of the name of the Contractor's firm fol-
22 lowed by a serial number. The re-submittals shall indicate the same number with numerical suffix in sequence. Each
23 transmittal shall itemize the enclosures and indicate the distribution of the transmittal and the enclosures. The following in-
24 formation shall be included on all submitted documents: Agency/Location/Address obtained, project number, building
25 name, project name. Submittals shall be grouped to include complete submittals of related systems, products, and accesso-
26 ries in a single submittal. Mark dimensions and values in units to match those specified. Include wiring diagrams of electri-
27 cally powered equipment.
- 28 C. Submit all original documents providing information regarding sustainability requirements including but not limited to recy-
29 cled content, VOC, certified wood, disposal certificates and transportation distance. Contractor is required to prove that
30 material and methods used meet all requirements specified elsewhere.
- 31 D. Owner will return the marked and stamped drawings together with transmittal letter or form to Contractor. If re-submittal
32 is required, owner will so note and Contractor shall make another submission for review after correction resolving the re-
33 view comments on the prior submittals. The above procedure shall be repeated until owner favorably reviews the submit-
34 tal. The submittals must be approved before material is ordered and fabrication is authorized.
- 35 E. Owner's favorable review of shop drawings and other submittals shall not relieve the Contractor of responsibility for devia-
36 tions from drawings or specifications, unless the Contractor has in writing called the owner's attention to such deviations at
37 the time of submission, and the owner has acknowledged in writing such deviations; nor shall it relieve the Contractor from
38 responsibility for errors of any sort in such drawings. If deviations, discrepancies, or conflicts between shop drawing submit-
39 tals and the drawings and specifications are discovered either prior to or after the shop drawing submittals are reviewed by
40 owner, the drawings and specifications shall control and shall be followed. The Contractor shall be responsible for and shall
41 check the correctness of all documents including those subcontractors prior to submitting them to owner for review.
- 42 F. The Contractor shall furnish prints of the favorably reviewed final shop drawings, erection drawings, equipment layouts and
43 vendor data to subcontractors and suppliers for the proper coordination of their work. The Contractor shall keep one (1)
44 complete set of the above documents at the job site for the use by owner.
- 45 G. After the completion of the project, and prior to final payment, submit:
- 46 1. One (1) copy of the Waste Manifest Records to the owner, if required in accordance with "Safety and Environment" Re-
47 quirements Article "HAZARDOUS SUBSTANCES".
 - 48 2. The original and one (1) copy of all guarantee/warranty documents.
 - 49 3. A copy of the O&M manual.

50 1.16. GUARANTEES

- 51
- 52 A. All work, material and equipment shall be guaranteed by the Contractor to be free of faults for at least one year or longer if
53 specified elsewhere. This year begins from the date of final acceptance from owner. The Contractor agrees to return to the
54 project and commence work as directed upon notification by owner and will furnish at his own expense all necessary labor
55 and material to make proper repairs or corrections made necessary by defective material or inferior workmanship fur-
56 nished or performed under this contract. If a subcontractor is not complying, the Contractor shall be held responsible.
- 57 B. All corrections and repairs are to be made no more than 30 days after notification of the Contractor for equipment and
58 material that is not critical to the operation of the building. Critical equipment and material, including but not limited to
59 HVAC, roofing, electrical, elevator, shall be repaired or brought into temporary and safe working condition in less than 7
60 days and temporary alternatives have to be provided by the Contractor if function is critical for use of the facility. If Con-
61 tractor fails to do so the owner reserves the right to perform the work himself or subcontract a different Contractor and
62 charge the Contractor the full cost of the repair and correction and cost of any material, rental fee, labor and equipment to
63 provide temporary relief and protection to enable safe operation of the building.
- 64 C. All equipment and material warranty by the manufacturer that lasts longer than the 1-year warranty by the contractor re-
65 quires sufficient documentation acceptable by the manufacturer to honor the warranty beyond the first year. Documents

- 1 required include manufacturer's warranty certification for this specific material and equipment at the job site, purchase or-
2 ders or any other documents that will be required beyond the first year for the manufacturer to honor warranty.
3 D. The contractor shall be responsible for reviewing all materials used in the project and compiling a list of items with warran-
4 ties. All warranties shall be included in the project manual.
5

6 **1.17. SCHEDULE OF OPERATIONS**

- 7 A. Within 5 calendar days after the effective date of Start Work Letter, the Contractor shall provide a critical path method
8 (CPM) network diagram and a preliminary construction progress schedule. The diagram shall show the order in which the
9 Contractor proposes to accomplish the work. The CPM shall show interdependence and duration, along with installation
10 man-hours by craft of each activity. Any work element longer than 15 days shall be broken down into component parts. The
11 critical path and float for each activity shall also be shown. The diagram or bar chart shall be neatly lettered and legibly
12 drawn to a time scale. This initial network diagram and all consecutive versions shall include preliminary dates throughout
13 the end of the project.
14 B. Install work in phases to accommodate owner's occupancy requirements.
15 C. After the initial submittal, the Contractor shall update the schedule monthly by entering actual progress for the period and
16 submit copies as part of the payment request. Contractor shall maintain and provide a 6-week construction schedule that is
17 compatible and complimentary to the general CONSTRUCTION SCHEDULE, and shall include detail of daily tasks over a 6-
18 week period to be updated weekly and communicated and coordinated at the weekly Trade Meetings by the Contractor's
19 field supervisor.
20 D. Include tests and other commissioning activities in schedule
21

22 **1.18. DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS**

- 23 A. Drawings indicate approximate locations of the various items. These items are shown approximately to scale and attempt
24 to show how these items should be integrated with building construction. Locate all the various items on-the-job measure-
25 ments in conformance with code and cooperation with other trades. Before locating items, confer with the owner as to de-
26 sired location in the various areas. In no case items shall be located by scaling drawings. Contractor must relocate items and
27 bear cost of redoing work or other trades' work necessitated by failure to comply with this requirement.
28 B. Demolition drawings, location, circuit numbers, number and type of fixtures, type of mounting and control devices may not
29 be correct. All sizes are approximations and have to be field-verified by contractor. In case of a discrepancy within and be-
30 tween the drawings that would cause and awkward or improper installation the engineer has to be notified for clarification
31 prior to installation. Any work in conflict with the drawings shall be corrected at contractor's expense and at no cost to the
32 owner. Contractor shall determine if scheduled devices fit into space and shall advise if not BEFORE ordering fixtures or de-
33 vices.
34 C. Information pertaining to existing conditions that are described in the specifications or appear on the drawings is based on
35 available records. While such data has been collected with reasonable care, there is no expressed or implied guarantee
36 that conditions so indicated are entirely representative of those actually existing. This information is provided to inform the
37 Contractor of known, existing conditions so that due diligence is taken by the Contractor to avoid damage. Where site ob-
38 servation or documents indicate existing underground utilities/services in close proximity (within four feet horizontally
39 and/or four feet vertically) to necessary new construction work, the Contractor shall be responsible to test, probe or oth-
40 erwise determine exact locations so as to prevent damage to such utilities/services.
41 D. Standard References such as ANSI, AASHTO, AWWA, AISC, Commercial Standards, Federal Specifications, NEMA, UL, and the
42 like incorporated in the requirements by reference shall be those of the latest edition at time of receiving bids, unless oth-
43 erwise specified. The manufacturers, producers and their agents of required materials shall have such specifications availa-
44 ble for reference and are fully familiar with their requirements as pertains to their product or material.
45 E. The Contractor shall not take advantage of any apparent error or omission in the plans or specifications, and the owner
46 shall be permitted to make such corrections and interpretations as may be deemed necessary for the fulfillment of the in-
47 tent of the plans and specifications.
48 F. In addition to verifying at the site all measurements shown on the Drawings, Contractor shall consult the Drawings and
49 Specifications of related work or existing construction that may in any manner affect the work of this contract. Contractor
50 shall promptly report to the owner, in writing, any errors, omissions, violations, or inconsistencies that may be discovered
51 as a result of such verifications; otherwise, it shall be understood that Contractor accepts all such related data and condi-
52 tions without reservations.
53 G. Each trade shall keep one set of plans and specifications on site. In addition construction bulletins, change orders etc. as
54 applicable to the trades shall be on site.
55 H. It shall be the responsibility of the Contractor to submit to the owner within ten (10) days after final inspection, one com-
56 plete marked-up set of contract drawings fully illustrating all revisions made by all the crafts in the course of the work. This
57 shall include all field changes, adjustments, variances, substitutions and deletions, whether covered by Change Order or
58 not. Underground utility installations must be located precisely as constructed on the marked-up drawings. Contractor shall
59 markup changes for as-built drawings on a daily base.
60 I. Layout of existing piping, conduits, and locations of equipment are shown as exactly as could be determined during design
61 of the facilities; but their accuracy, particularly when such layouts and drawings are schematic, cannot be guaranteed. Con-
62 tractor shall check all Specifications including the Drawings for possible interference with electrical, mechanical, and struc-
63 tural details, as well as interference with existing building or equipment, and shall notify the owner of the interference for
64 resolution of the interference before commencing work. Any completed work that interferes shall be corrected by Contrac-
65 tor at Contractor expense so that the original design can be followed.

- 1 J. Electronic design files may be provided by the owner at its digression as they are needed for the contractor to perform the
2 work. Contractor shall use electronic design files on their own risk and assume all liability. Electronic documents are not
3 contract documents and significant discrepancies may exist between these electronic files and contract documents and actual
4 site conditions.
- 5 K. Contractor shall provide list with all equipment installed. This list shall contain, but not limited to, type, make and special
6 product key and number. For grant purposes the contractor may have to provide detailed information about equipment installed
7 and labor provided to third party institutions, such as Focus on Energy.
- 8 L. Using datum, the lot lines and present levels have been established as shown on the drawings. Other grades, lines, levels
9 and benchmarks, shall be established and maintained by the Contractor, who shall be responsible for them. As work progresses,
10 the Contractor shall lay out on forms and floor, the locations of all partitions, walls and fix column centerlines as a
11 guide to all trades. The Contractor shall make provision to preserve property line stakes, benchmarks, or datum point. If
12 any are lost, displaced or disturbed through neglect of any Contractor, Contractor's agents or employees, the Contractor responsible
13 shall pay the cost of restoration.
14

15 1.19. QUALITY ASSURANCE

- 16 A. Any installed material not meeting the specification requirements must be replaced with material that meets these specifications
17 without additional cost to owner.
- 18 B. All products and materials used are to be new, undamaged, clean and in good condition. Existing products and materials
19 are not to be reused unless specifically indicated.
- 20 C. Where equipment or accessories are used which differ in arrangement, configuration, dimensions, ratings, or engineering
21 parameters from those indicated on the contract documents, the Contractor is responsible for all costs involved in integrating
22 the equipment or accessories into the system and for obtaining the performance from the system into which these
23 items are placed. This may include changes found necessary during the testing, adjusting, and balancing phase of the project.
24
- 25 D. Contractor shall assume the responsibility for the protection of all finished construction under the Contract and shall repair
26 and restore any and all damage of finished work to its original state. Wheeling of any loads over any type of floor, either
27 with or without plank protection, will be permitted only in rubber-tired wheelbarrows, buggies, trucks or dollies. Where
28 structural concrete is also the finished surface, care must be taken to avoid marking or damaging those surfaces. All structures
29 and equipment shall be constructed, installed and operated with guards, controls and other devices in place.
- 30 E. Contractor shall obtain complete data at the site and inspect surfaces that are to receive the Work before proceeding with
31 fabricating, assembling, fitting or erecting any work under this contract. Contractor shall notify owner in writing in case of
32 discrepancies between existing work and drawings, and of any defects in such surfaces that are to receive the Contractor's
33 work. Owner will evaluate the notice and direct what remedial action will be taken.
- 34 F. Starting of work implies acceptance of existing work or the work of others. Removal and replacement of work applied to
35 defective surfaces, in order to correct defects, shall be done at the expense of the Contractor who applied work to defective
36 surfaces.
- 37 G. For outdoor work the Contractor shall:
- 38 1. Provide, erect and maintain all required planking, barricades, guard rails, temporary walkways, etc., of sufficient size
39 and strength necessary for protection of stored material and equipment; paved surfaces, walks, curbs, gutters and
40 drives; streets adjacent to or within project area; adjoining property and all project work to prevent accidents to the
41 public and the workmen at the job site.
- 42 2. Notify adjacent property owners if their property interferes with the work so that arrangements for proper protection
43 can be made.
- 44 3. Provide protection against rain, snow, wind, ice, storms, or heat to maintain all work, materials, apparatus, and fixtures,
45 incorporated in the work or stored on the site, free from injury or damage. At the end of the day's work, cover all new
46 work likely to be damaged. Remove snow and ice as necessary for safety and proper execution of the work.
- 47 4. Protect the building and foundations from damage at all times from rain, ground water and back up from drains or
48 sewers. Provide all equipment and enclosures as necessary to provide this protection.
- 49 5. Damaged property shall be repaired or replaced in order to return it to its original condition. Damaged lawns shall be
50 re-seeded.
- 51 6. Take all necessary precautions to protect owner's property as well as adjacent property, including trees, shrubs, buildings,
52 sanitary and storm sewers, water piping, gas piping, electric conduit or cable, etc., from any and all damage which
53 may result due to work on this project.
- 54 7. Repair work outside of property line in accordance with the requirements of the authority having jurisdiction.
- 55 8. Repair any work, damaged by failure to provide proper and adequate protection, to its original state to the satisfaction
56 of owner or remove and replace with new work at the Contractor's expense.
- 57 9. Protect trees indicated on the drawings to remain and trees in locations that would not interfere with new construction,
58 from all damage. Do not injure trunks, branches, or roots of trees that are to remain. Do cutting and trimming only
59 as approved and as directed by owner. The value of trees destroyed or damaged will be charged against the account
60 of the Contractor responsible for the damage in an amount equal to the expense of replacing the trees with those of
61 similar kind and size.
- 62 H. The contractor shall be fully responsible for inspecting the work of its suppliers, and subcontractors to assure that the work
63 complies with the standards for materials and workmanship required by the contract documents. The Contractor shall:
- 64 1. Monitor quality control over subcontractors, suppliers, manufacturers, products, services, site conditions, and work-
65 manship, to produce work of the quality specified in the contract documents.

- 1 2. Comply fully with manufacturer's instructions, including each step in sequence.
- 2 3. Request clarification from owner before proceeding with work when manufacturers' instructions or reference stand-
- 3 standards conflict with Subcontract Documents.
- 4 4. Comply with specified standards as a minimum quality for the work except when more stringent tolerances, codes, or
- 5 manufactures instructions require more precise workmanship.
- 6 5. Ensure that work is performed by persons specializing in the specific trade and class of work required, and qualified to
- 7 produce workmanship of specified quality.
- 8 6. Secure products in place with positive anchorage devices designed and sized to withstand seismic, static and dynamic
- 9 loading, vibration, physical distortion or disfigurement.
- 10 I. If reference standards or manufacturers' instructions contain provisions that would alter or are at variance with relation-
- 11 ships between the parties to the contract set forth in the contract Documents, the provisions in the contract Documents
- 12 shall take precedence.
- 13 J. When required by Individual Specification sections, Contractor shall provide the following services from a manufacturer's
- 14 representative:
- 15 1. Review of Specifications and design and concurrence or suggestions for modification.
- 16 2. Site observation of conditions of use and substrate.
- 17 3. Observation of the installation work in progress and on completion.
- 18 4. Start up, testing, and adjustment of equipment.
- 19 5. Instruction to the owner in operation and maintenance.
- 20 6. Provide written signed report by manufacturer's representative documenting services provided and any comments or
- 21 recommendations.
- 22 K. Inspection or testing performed by the owner shall not relieve the Contractor from responsibility for performing his own
- 23 quality control and for complying with the requirements of the contract Documents. Owner will not be responsible for the
- 24 Contractor's failure to carry out work in accordance with the contract Documents.

25
26 **1.20. CODES AND PERMITS**

- 27 A. Applicable provisions of Public Law, the Constitution and Laws and Statutes of the State of Wisconsin and the codes and
- 28 regulations of governmental departments are hereby referred to and made a part of this contract and all work performed
- 29 shall be in accordance with such laws, regulations and the latest edition or supplement or amendment thereto in effect at
- 30 the time of submittal of bid shall be considered to be the issue in effect (unless shown otherwise) of all applicable codes in-
- 31 cluding, but not limited to:
- 32 1. Wisconsin Building Code
- 33 2. Wisconsin Electrical Code
- 34 3. Wisconsin Mechanical Code
- 35 4. Wisconsin Plumbing Code
- 36 5. Wisconsin Energy Code
- 37 6. Wisconsin Fire Code
- 38 7. NFPA 70 National Electrical Code
- 39 8. General Services Administration 41 CFR Part 101-19
- 40 9. Americans with Disabilities Act (ADA)
- 41 10. Energy Conservation Performance Standards,
- 42 11. Local Codes
- 43 12. Occupational Safety and Health Act (OSHA)
- 44 13. Occupational Safety and Health Standards, Department of Labor
- 45 14. Safety and Health Regulations for Construction, Department of Labor
- 46 15. Wisconsin Fire Code
- 47 16. National Electrical Safety Code, ANSI C2
- 48 17. Environmental Protection Agency regulations
- 49 18. Clean Air Act
- 50 19. Clean Water Act
- 51 20. Resource Conservation and Recovery Act
- 52 21. Toxic substances Control Act
- 53 22. Wisconsin Department of Health and Family Services
- 54 23. State and Regional Water Quality Control Boards
- 55 24. County and Municipal ordinances
- 56 B. In case of conflict or overlap of the above references, the most stringent provision shall apply.
- 57 C. The newest version of the a code or standard shall apply even if an older version is adopted by the Jurisdiction Having Au-
- 58 thority.
- 59 D. If necessary, file and maintain Notification of Demolition and/or Renovation and Application for Permit Exemption (WDNR
- 60 Form 4500-113) in accordance with the Wisconsin Administrative Code Chapter NR447.
- 61 E. Contractor is expected to know or to ascertain, in general and in detail, the requirements of all codes and ordinances, and
- 62 all rulings and interpretations of code requirements being made by all authorities having jurisdiction over the work per-
- 63 formed by them, applicable to the construction and operation of systems covered by this contract. Where codes or stand-
- 64 ard specifications other than those listed in this paragraph are referred to in the different Divisions of these specifications, it

- 1 is understood that they apply as fully as if cited here. Where differences exist between codes affecting this work, the code
2 affording the greatest protection to the owner shall govern.
- 3 F. All cost for items and procedures necessary to satisfy requirements of all applicable codes, ordinances and authorities,
4 whether or not these are specifically covered by drawings or specifications. All cases of serious conflict or omission between
5 the drawings, specifications, and codes shall be brought to the owner's attention as herein before specified. The Contractor
6 shall carry out work and complete construction as required by applicable codes and ordinances and in such a manner as to
7 obtain approval of all authorities whose approval is required.
- 8 G. Contractor is responsible for obtaining permits at its own cost including expenses for supporting documents. Deliver origi-
9 nal permits to the owner before work starts. Apply for, arrange and pay for all required installation inspections required.
10 Deliver originals of these certificates to the owner. Include copies of the certificates in the Operating and Maintenance In-
11 structions. Contractor shall arrange all required inspections and correct all deficiencies at no cost to owner.
- 12 H. The Contractor must maintain all licenses required for the work performed and required by authorities. The Contractor
13 must submit proof of holding the license or certificate upon request. If a Contractor loses a license for whatever reason he
14 must inform the owner immediately after learning about that himself.
- 15 I. PERMIT TO PENETRATE GROUND OR EXISTING SURFACES OF OWNER PROPERTY:
- 16 1. Prior to any penetration of the ground or existing concrete surfaces (including the use of stakes or poles) in excess of
17 1.5", the Subcontractor shall obtain from the Project Representative a Permit to penetrate or Excavate Existing Surface
18 of owner property and shall adhere to the conditions of the permit during such work. The Permit and all conditions in it
19 shall be considered part of these specifications and shall be included in the contractor's bid amount.
- 20 2. In areas where a Permit to penetrate or excavate existing surfaces of owner property is not required, contractors shall
21 verify by safe means, prior to drilling, that no utilities or services are enclosed within the area to be drilled.
- 22 J. FIRE SAFETY PERMIT:
- 23 1. All operations with open flames or that cause sparks or is near gas lines or near combustible storage containers require
24 a daily Fire Safety Permit issued by the Project Representative. Contractor shall not commence such work until the
25 permit is issued. Activities requiring a Permit include, but are not limited to, electric arc and gas welding and flame cut-
26 ting, other open flame operations, tar kettles, powder activated tools and excavations. Fire watch personnel shall be
27 provided the contractor in sufficient number to continuously monitor all locations where work is conducting requiring a
28 fire permit. The fire watch personnel shall remain on the job at least thirty minutes after such operations are complet-
29 ed. Fire safety personnel may be installers or welders.
- 30 2. Noncombustible shields or covers shall be provided by the contractor on tables, floors, walls, around the workstation,
31 and over equipment to protect building structures, equipment and personnel from sparks and fragments of hot metal.
32 Contractor shall also take these precautions to protect against sparks and hot metallic oxides generated by grinding,
33 drilling or sawing operations.
- 34 K. AIR EMISSIONS PERMITS AND NOTIFICATIONS:
- 35 1. For all projects that involve removal of regulated asbestos containing materials, the contractor shall complete the re-
36 quired asbestos removal forms and notify the authorities at least 10 working days in advance of the activity.
- 37 2. For any operations required to obtain an Authority to Construct or Permit to Operate from the authorities, the contrac-
38 tor shall provide in advance to the Project Manager the information needed for the application. Authorities may take
39 more than 40 working days to process the application and issue the Authority to Construct or Permit to Operate; the
40 contractor shall include this time in his Schedule of Operations; OWNER will grant no extra cost under this contract for
41 this wait period.
- 42
- 43 **1.21. ENVIRONMENT, SAFETY AND HEALTH (EHS)**
- 44 A. The owner can request additional safety or environmental protection measures at any time. If contractor does not follow
45 safety or environmental protection requirements, the owner can hire a different contractor or self-perform to ensure com-
46 pliance and charge the original contractor for the cost.
- 47 B. Contractor shall provide all labor, materials, equipment, services and supervision required to maintain work sites that meet
48 the environment, safety and health (ES&H) requirements of all applicable federal, state, and local regulations and protect
49 the environment and the safety and health of its employees, the employees of its lower tier subcontractors, owner em-
50 ployees and the general public.
- 51 C. The contractor shall provide a qualified onsite EHS Representative with the authority to enforce all of the safety require-
52 ments and implement the contractor's Injury and Illness Prevention Program and Hazard Abatement Plan. The contractor
53 shall remove and replace its Health and Safety Representative at the request of the owner, if the Safety Representative is
54 unsuccessful in enforcing the EHS requirements. The contractor's EHS representative shall conduct safety inspections of the
55 project operations, materials, and equipment frequently throughout the day to ensure that all safety deficiencies are identi-
56 fied and corrected. The owner reserves the right to enforce measures if the contractor's onsite EHS representative does not
57 enforce all requirements. Inspection findings and corrective actions taken shall be documented, and the record shall be
58 kept on the construction work site and be made available to owner upon request. If safety deficiencies are found, owner
59 will issue a Safety Deficiency Notice to the contractor. Upon receipt of a written Safety Deficiency Notice from the Owner,
60 the contractor shall take appropriate action to correct the deficiency and discontinue the hazardous activity until the hazard
61 is abated. Failure to correct or eliminate violation(s) within the period specified might result in the order to stop all or any
62 part of the work. The contractor shall submit to the owner a written response to the Safety Deficiency Notice describing
63 what corrective action it has taken, the date such corrective action was completed and actions that it will take to prevent
64 future recurrence of the same incident.

- 1 D. Provide protection for workmen, public, adjacent construction and occupants of existing building(s). Personal Protective
2 Equipment (PPE) such as hard hats, ear plugs and dust masks, shall be provided to all employees and use shall be enforced
3 by the onsite EHS Representative. PPE also shall be provided to site visitors near the main entrances to the jobsite. PPE shall
4 be provided in sufficient numbers to outfit typical number of visitors (i.e. designers, inspectors, shipment workers)
- 5 E. WORK SITE SAFETY ORIENTATION: Each employee shall receive initial EH&S orientation prior to performing any work on the
6 project. The contractor shall maintain on the work site a detailed outline of the orientation and a signed and dated roster of
7 all employees who have completed the project EHS indoctrination. Make documentation available to owner on request.
8 The orientation shall, at a minimum, cover the following points:
- 9 1. Employee rights and responsibilities.
 - 10 2. Construction contractor responsibilities.
 - 11 3. Alcohol and drug abuse policy
 - 12 4. Contractor's disciplinary procedures.
 - 13 5. First aid and medical facilities.
 - 14 6. Site and project specific hazards.
 - 15 7. Hazard recognition and procedures for reporting or correcting unsafe conditions or practices.
 - 16 8. Procedures for reporting accidents and incidents.
 - 17 9. Fire fighting and other emergency procedures to include local warning and evacuation systems.
 - 18 10. Hazard Communication Program.
 - 19 11. Access to employee exposure monitoring data and medical records.
 - 20 12. Protection of the environment, including air, water, and storm drains from construction pollutants.
 - 21 13. Location of and access to reviewed project Illness and Injury Prevention Program, Hazard Analysis and Hazard Abate-
22 ment Plan
 - 23 14. Location and contents of required postings
- 24 F. A comprehensive EH&S program shall be established including but not be limited to:
- 25 1. Confined Space Entry
 - 26 2. Site specific Emergency Response, First Aid, & Medical Services. Identify employees with CPR/First Aid certification
27 available at the work site.
 - 28 3. Fire Protection and Prevention
 - 29 4. Hazard Communications
 - 30 5. Hazardous Waste Operations
 - 31 6. Hazardous Work Permits
 - 32 7. Toxic and Hazardous substances
 - 33 8. Inspection, Maintenance, and Certification of Heavy Equipment, Cranes, and Motor Vehicles
 - 34 9. Lock Out/Tag Out (LOTO) Subcontractors are required to include LOTO
 - 35 10. Personal Protective and Life Saving Equipment
 - 36 11. Radiation Protection
 - 37 12. Construction Safety Training
 - 38 13. Control of silica dust released during demolition or drilling of concrete or released from work with other materials that
39 contain silica.
- 40 G. A comprehensive activity hazard analysis and hazard abatement plan shall be established including but not be limited to:
- 41 1. Description of work phase or activity
 - 42 2. Identification of potential hazards associated with the activity
 - 43 3. A list of the contractor's planned controls to mitigate the identified hazards
 - 44 4. Name of the contractor's employee responsible for inspecting the activity and ensuring that all proposed safety
45 measures are followed
 - 46 5. Construction activities for which an Activity Hazard Analysis and Hazard Abatement Plan may be required include, but
47 are not limited to:
 - 48 6. Hoisting and handling of materials
 - 49 7. Excavations
 - 50 8. Trenching and drilling
 - 51 9. Concrete placement and false work
 - 52 10. Welding
 - 53 11. Steel erection
 - 54 12. Work performed six feet or higher above ground
 - 55 13. Electrical work
 - 56 14. Demolition
 - 57 15. Work in confined spaces
 - 58 16. Work that causes the release of silica such as demolition or drilling of concrete or work with materials that contain sili-
59 ca.
 - 60 17. Work with epoxy coatings
 - 61 18. Work with or around hazardous materials
 - 62 19. Work on hilly terrain
 - 63 20. Use and handling of flammable materials
 - 64 21. The owner must favorably review the Activity Hazard analysis and Hazard Abatement Plan before work can start on that
65 activity.

- 1 H. ELECTRICAL WORK:
- 2 1. Energized electrical work within panels and equipment is not allowed.
- 3 2. Workers shall be qualified to perform electrical tasks in accordance with OSHA 29 CFR 1910 and 1926 requirements.
- 4 3. Work practices must be compliant with NFPA 70E, newest edition – Standard for Electrical Safety in the Workplace.
- 5 I. Rubbish, debris and scrap shall not be thrown through any window or other opening, or dropped from any great height; it
- 6 shall be conducted to the ground, to waiting truck(s) or removable container(s) by means of approved chutes or other
- 7 means of controlled conveyance.
- 8 J. Form and scrap lumber shall have all nails withdrawn or bent over; shall be neatly stacked, placed in trash bins, or removed
- 9 from the premises.
- 10 K. Take all necessary precautions while dismantling piping containing gas, gasoline, oil or other explosive or toxic fluids or
- 11 gases. Purge lines and contain materials in accordance with all applicable regulations. Store such piping outdoors until
- 12 fumes are removed. Verify that all gas and electrical utilities have been abandoned or disconnected and associated hazards
- 13 mitigated, prior to beginning any demolition.
- 14 L. All material classified by authorities to be a material that needs special treatment must be recycled, reused or disposed of
- 15 by a special contractor that holds a valid license to work with such material. If hazardous materials are not anticipated, but
- 16 encountered, terminate operations and contact owner immediately.
- 17 M. CONTROL OF CRYSTALLINE SILICA DUST: The subcontractor shall provide all necessary control measures at the work site to
- 18 keep worker exposure to crystalline silica dust within the OSHA Established Permissible Exposure Limits (PEL's). Dust control
- 19 measures may require spraying of water or engineering controls at the dust generating points. It also may include the use
- 20 of respirators, industrial grade HEPA vacuums, and HEPA filtered locally exhausted tools. Construction operations known to
- 21 cause the release of silica dusts include, but are not limited to:
- 22 1. Chipping, sawing, grinding, hammering, and drilling of concrete, rock, or brick.
- 23 2. Work with cementitious materials such as grout, mortar, stucco, gunnite, etc.
- 24 3. Dry sweeping of dust originating from concrete or rock
- 25 N. CONSTRUCTION ACTIVITY POLLUTION PREVENTION:
- 26 1. Follow Requirements in Storm Water Pollution Prevention Plan (SWPPP) and Erosion and Sedimentation Control (ESC)
- 27 Plan
- 28 2. Stabilize any relocated and moved soil with fast growing grasses and place mulch (hay, woodchips, straw) on it to cover
- 29 and hold soil
- 30 3. Divert surface runoff from distributed areas into sediment basin or sediment traps with a mound of stabilized soil
- 31 4. Construct posts with filter fabric media to remove sediment from stormwater leaving the site.
- 32 5. Follow requirements in site development plan and don't disturb areas beyond the marked area.
- 33
- 34 O. INDOOR AIR QUALITY:
- 35 1. Not Applicable.
- 36
- 37 P. FIRE PROTECTION AND PREVENTION:
- 38 1. The contractor shall develop and maintain an effective fire protection and prevention program at the job site through
- 39 all phases of demolition, alteration, repair, and construction work. Contractor shall ensure the accessibility and availa-
- 40 bility of fire protection and suppression equipment.
- 41 2. Smoking is prohibited everywhere on the job site – no exceptions. Signs shall be posted. In visible locations.
- 42 3. No burning of rubbish or debris will be allowed at the site. Combustible waste shall be removed immediately or stored
- 43 in fire resistive containers until disposed of in an approved manner.
- 44 4. The Contractor shall provide and maintain in working order during the entire construction period, a minimum of three
- 45 (3) fire extinguishers on each floor level, including basement of the building, and one (1) in temporary office. Extn-
- 46 guishers shall be nonfreezing type such as A-B-C rated dry chemical, of not less than 10-pound capacity each. In addi-
- 47 tion, any subcontractor who maintains an enclosed shed on the site shall provide and maintain, in an accessible loca-
- 48 tion, one or more similar nonfreezing type fire extinguisher in each enclosed shed.
- 49
- 50 Q. ACCIDENTS AND SPILLS:
- 51 1. The contractor shall immediately notify the owner of any accidents, injuries or occupational illnesses that occur on the
- 52 project, regardless of the employer of the involved personnel or the owner of the involved materials or equipment. For
- 53 OSHA recordable injuries, the subcontractor shall also furnish a copy of the OSHA Form 301(or equivalent) to the Pro-
- 54 ject Representative within five days of the injury.
- 55 2. In the event a job site accident occurs, the contractor shall immediately implement controls and restrictions on the ac-
- 56 cident site to ensure the site remains undisturbed until released in writing by the owner to resume work. The contrac-
- 57 tor shall provide accident investigation follow-up and shall support Owner's accident investigation and reporting proto-
- 58 col.
- 59 3. The contractor shall promptly report to owner any spill, deposit, leak, drainage, debris, residue, spoil, residual, and/or
- 60 by-product, whether its presence at the jobsite is occasioned by accident, inadvertence, intent, discarding, or aban-
- 61 donment by the Subcontractor or its lower tier subcontractors. This reporting requirement applies to petroleum prod-
- 62 ucts, oil, lubricants, chemical substances, waste materials, and waste substances, which are in such quantities as to con-
- 63 stitute a hazardous substance or hazardous waste. All such occurrences of any quantity involving paints, solvents, thin-
- 64 ners, degreasers, PCBs, halogenated hydrocarbons, volatile organic compounds, and/or asbestos shall be deemed a re-
- 65 portable event. These identification and reporting requirements shall be the responsibility of the contractor for both its

- 1 own work forces as well as for any sub tier contractor, material man or supplier performing work on site for the con-
 2 tractor. All removal, cleanup, and associated costs, which result from contractor or lower tier subcontractor, material
 3 man, or supplier presence at the jobsite, shall be at the contractor's sole expense.
- 4 **R. WASTE MANAGEMENT:**
- 5 1. Recycle all recyclable material. This includes any material for which there is a recycling facility in Wisconsin.
 6 2. Separate all waste material in plastic, metal, paper, acoustical tile, brick, concrete, clean wood, glass, gypsum drywall,
 7 carpet and insulation and provide designated on-site collection areas.
 8 3. Keep track of volume and weight of each material and track if it was recycled, reused, donated or disposed otherwise.
 9 4. It is permissible to separate waste off-site by specialized recycling contractor. This contractor needs to be provide
 10 proof of recycling and needs to be WASTECAP certified as "Accredited Professional in Construction and Demolition
 11 Debris Recycling".
 12 5. Prior to demolition or construction activities, the General Contractor, with input of all contractors and their subcon-
 13 tractors, shall develop and submit a Waste Management Plan to owner. Priority is given to reuse, followed by recy-
 14 cling followed by disposal including proper land filling or incineration. Disposal only will be acceptable if other meth-
 15 ods are not commercially available. The Waste Management Plan includes but is not limited to the following:
 16 a. A list of each material proposed to be salvaged, reused, or recycled, Materials to be included, at a minimum, are
 17 the following:
 18 i. Concrete: Clean concrete, concrete with rebar, asphalt concrete.
 19 ii. Metals: Steel, iron, galvanized sheet steel, stainless steel, aluminum, copper, zinc, lead, brass or bronze,
 20 including banding, ductwork, framing, roofing and siding, flashing, piping and rebar.
 21 iii. Clean Fill: Earth, rocks, and gravel.
 22 iv. Wood: Clean dimensional wood, wood pallets, engineered wood products including plywood, parti-
 23 cleboard, I joist.
 24 v. Biodegradable landscaping materials.
 25 vi. Cardboard, paper, packaging.
 26 vii. Masonry: Brick, ceramic tile, CMU.
 27 viii. Roofing: Clay or concrete tiles, asphalt shingles.
 28 ix. Gypsum board.
 29 x. Acoustic ceiling panels.
 30 xi. Carpet and pad.
 31 xii. Paint.
 32 xiii. Insulation.
 33 xiv. Plastics: ABS, PVC
 34 xv. Beverage containers
 35 xvi. Cardboard.
 36 xvii. Concrete
 37 xviii. Brick and concrete masonry units (CMU).
 38 xix. Metals from banding, stud trim, ductwork, piping, rebar, roofing, other trim, steel, iron, galvanized sheet
 39 steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
 40 xx. Gypsum wallboard.
 41 xxi. Clean dimensional wood
 42 xxii. Wood doors
 43 xxiii. Acoustical ceiling tiles/panels
 44 xxiv. Glass
 45 b. Separation and Materials Handling Procedures: How waste materials (as identified above), will be separated,
 46 cleaned (if necessary) and protected from contamination.
 47 c. Waste Material Estimating Sheet (Appendix A at the end of this Section)
 48 d. Proposed Alternatives to Land filling: List each material planned to be salvaged or recycled, quantities, and pro-
 49 posed destination.
- 50 6. The contractor shall provide separation, bins for temporary onsite storage, handling, transportation, recycling, sal-
 51 vage, and land filling for all demolition and waste materials and keep recycling and waste bins areas neat, clean and
 52 clearly marked in order to avoid contamination or mixing materials and maintain logs onsite for each load of materials
 53 removed from site.
 54 7. During the progress of the work, the General Contractor shall report to owner the quantity of each material recycled,
 55 reused, or salvaged, and the receiving party. All contractors shall maintain a record of weight tickets, manifests, re-
 56 ceipts, and invoices for review by owner on request.
 57 8. At the completion of the project the General Contractor shall submit a final summary of the progress reports, includ-
 58 ing the percentage of recycled waste (weight or volume) to the quantity of waste that would have been otherwise
 59 land filled.
 60 9. Contractor is to provide the following documents upon request for payment:
 61 a. Waste Materials Estimating Sheet (Appendix A at the end of this Section)
 62 b. Landfill Log (Appendix B at the end of this Section)
 63 c. Waste Diversion Log (Appendix C at the end of this Section)

- 1 d. Legible copies of manifests, weight tickets, and receipts. Manifests shall be from recycling and/or disposal site
- 2 operators that can legally accept the materials for the purpose of reuse, recycling or disposal. These documents
- 3 shall include the contract number and the job site name.
- 4 10. Examples of documents include, but are not limited to:
- 5 a. Cover sheet for hazardous materials recycling contract
- 6 b. Vendor "Pickup Request"
- 7 c. Vendor "Certificate of Recycling and/or Disposal"
- 8 d. Vendor invoice
- 9 e. Maintain at the Project site Landfill Logs and Waste Diversion Logs for each load of materials removed from site.
- 10 f. Discuss Waste management plans and implementation during all construction-related meetings.
- 11 g. Immediately Inform the owner if hazardous materials are encountered or suspected, and stop work in the sus-
- 12 spect area. Do not proceed with work in the suspect area until approved by the owner.
- 13 11. The following resources are provided for information only, to aid the Contractor in managing the construction waste:
- 14 a. The Wisconsin DNR, Bureau of Waste Management <http://www.dnr.state.wi.us/org/aw/wm/>
- 15 b. The UW-Extension's Solid and Hazardous Waste Education Center <http://www1.uwex.edu/ces/shwec/>
- 16 c. WasteCap Wisconsin, Inc. <http://www.wastecapwi.org> or telephone: 414-961-1100 or 608-245-1100
- 17 12. The contractor shall provide summaries of type and amount of material recycled, reused or disposed of. Those sum-
- 18 maries shall include enough information and detail to satisfy requirements by external auditors. At a minimum the
- 19 documentation needs to meet the current LEED requirements and requirements set by the EPA and federal govern-
- 20 ment for federally funded projects. These requirements may or may not be mentioned specifically in this contract and
- 21 the contractor is required to learn about specifics and to add documentation as required by such third party auditors.
- 22

23 **1.22. STAIRS, SCAFFOLDS, HOISTS, ELEVATORS OR CRANES**

- 24 A. The Contractor shall furnish and maintain equipment such as temporary stairs, fixed ladders, ramps, chutes, runways and
- 25 the like as required for proper execution of work by all trades, and shall remove them on completion of the work. The Con-
- 26 tractor shall erect permanent stair framing as soon as possible. Provide stairs with temporary treads, handrails, and shaft
- 27 protection. Contractors requiring scaffolds shall make arrangements with the Contractor, or shall provide their own and
- 28 remove them on completion of the work. The Contractor shall underlay its interior scaffolds with planking to prevent up-
- 29 rights from resting directly on the floor construction.
- 30 B. Contractor shall provide and pay for its own hoist/crane or other apparatus necessary for unloading/setting or moving their
- 31 equipment and materials. Installation and removal of equipment for this activity must be accounted for in the Project
- 32 Schedule. Equipment and operations for this activity shall comply with applicable Department of Commerce and OSHA re-
- 33 quirements. No material hoist may be used to transport personnel unless it meets Department of Commerce and OSHA re-
- 34 quirements for that purpose.
- 35 C. Existing elevators may be used on a limited basis with the owner's permission and agreement. The Contractor will pay
- 36 costs of warranty extensions and additional service work required. Appropriate protection must be provided by the using
- 37 Contractor and that Contractor shall be responsible for any structural, mechanical or finish damage to the elevator and its
- 38 parts and to adjoining building finishes and components.
- 39

40 **1.23. SAFEGUARDS - EXISTING EQUIPMENT, UNDERGROUND UTILITIES AND ARTIFACTS**

- 41 A. Existing utilities, including those listed as abandoned, shall not be moved or otherwise disturbed without written verifica-
- 42 tion by the owner that the utility is abandoned.
- 43 B. When altering existing facilities, the Contractor shall take every precaution to preserve and protect existing facilities, both
- 44 those to be altered and those to remain unaltered that are within the limits of the work.
- 45 C. The Contractor shall notify the owner of structural members, piping, conduit, or equipment not indicated for removal that
- 46 may cause interference with the work. Work shall not proceed in the affected area until instructions have been issued. Do
- 47 not drill or penetrate existing structures without prior permission. The removal of existing work shall be by methods that
- 48 will not jeopardize the integrity of structures or systems that are to remain.
- 49 D. Existing utilities, including but not limited to roof drainage systems, underground cables, ducts, roadways, manholes,
- 50 building fire alarm, public address or telecommunications wiring shall not be moved or otherwise disturbed, nor electrical
- 51 circuits or switches operated or taken in or out of service, without prior consent of the owner. Contractor shall compen-
- 52 sate loss to the owner resulting from damage to utilities, facilities and other owner or public items damaged.
- 53 E. Take measures necessary to safeguard all existing work and facilities that are inside and outside the limits of the work or
- 54 items that are within the construction limits but are intended to remain. Report any damage to the owner immediately.
- 55 Correct and pay for all damages.
- 56 F. If bones or artifacts are encountered during digging, the owner requires that the Contractor stop work within a 50-foot
- 57 radius of the find and immediately notify the owner. Work may continue only with approval from the owner.
- 58

59 **1.24. OPERATION AND MAINTENANCE DATA**

- 60 A. All OM documents are to be submitted as electronic copy for review at the time the respective equipment is delivered. No
- 61 hardcopy shall be provided until the OM manuals are approved.
- 62 B. Submit data bound in 8-1/2 x 11 inch (A4) text pages, Use three D side rings if necessary and binders with durable plastic
- 63 covers. Submit all documents in electronic form as well as in hardcopy. Prepare binder cover with printed title
- 64 "OPERATION AND MAINTENANCE INSTRUCTIONS", title of project and subject matter of binder when multiple binders are
- 65 required.

- 1 C. Internally subdivide the binder contents with permanent page dividers, logically organized as described below; with tab
2 titling clearly printed under reinforced laminated plastic tabs.
- 3 D. Contents: Prepare a Table of Contents for each volume, with each Product or system description identified, typed on 20-
4 pound white paper, in three parts as follows:
- 5 E. Part 1: Directory, listing names, addresses, and telephone numbers of Architect/Engineer, Contractor, subcontractors, and
6 major equipment suppliers.
- 7 F. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each
8 category, identify names, addresses, and telephone numbers of subcontractors and suppliers. Identify the following:
- 9 1. Summary list of maintenance items indicating frequency and type of maintenance required for all systems covered in
10 this contract.
- 11 2. List of components.
- 12 3. A description of recommended replacement parts and materials, which the owner should stock.
- 13 4. Parts list for each component.
- 14 5. A summary of equipment vendors, or location where replacement parts can be purchased.
- 15 6. Copies of all approved submittals.
- 16 7. Operating instructions.
- 17 8. Maintenance instructions for components systems, Preventive maintenance recommendations.
- 18 9. Maintenance instructions for finishes, including recommended cleaning methods and materials, and special precau-
19 tions identifying detrimental agents.
- 20 G. Part 3: Project documents and certificates, including the following:
- 21 1. Product data.
- 22 2. Certificates.
- 23 3. Photocopies of warranties.
- 24 4. Name, address, and telephone number of the person or office to contact for service during the warranty period.
- 25 5. Name, address, and telephone number of the person or service organization to be contacted for service after the
26 warranty period.
- 27 H. Submit all O&M manuals in original electronic form (PDF). Scanned copies are not acceptable. PDF need to be of high qual-
28 ity and searchable.
- 29 I. Submit 1 draft copy of completed volumes 15 [fifteen] days after approval of applicable submittal or receipt of the prod-
30 uct. Revise content of all document sets as required prior to final submission. Submit 2 [two] sets of revised final volumes,
31 within 10 [ten] days after final inspection.

32 1.25. ACCESS PANELS AND DOORS

- 33 A. Not Applicable.

34 1.26. LOOSE AND DETACHABLE PARTS

- 35 A. Contractor shall retain all loose and small detachable parts of apparatus and equipment furnished under this Contract,
36 until completion of the work and shall turn them over to the owner to receive them.
- 37 B. Furnish one can of touch-up paint for each different color factory finish furnished by the Contractor. Deliver touch-up
38 paint with other "loose and detachable parts".

39 PART 2 – PRODUCTS

40 2.1. SPECIFIED ITEMS - SUBSTITUTES

- 41 A. Wherever catalog numbers and specific or trade names are used in conjunction with a designated material, product, item,
42 or service mentioned in these Specifications, they are used to establish the standards of quality, utility, and appearance
43 required. Substitutions will be approved, subject to the following provisions:
- 44 a. Contractors or manufacturers may request that their product be substituted for specified products where sole sourc-
45 ing is not stated, (i.e. no substitutions allowed). Requested may be submitted up to 10 calendar days prior bid due
46 date. All requests must be accompanied by sufficient information to judge its suitability for this project. Accepted
47 substitutions shall be listed per addendum.
- 48 b. Owner may reject any substitute request without providing specific reasons.
- 49 c. Owner may accept substitution requests after contract award, but reserves the right to refuse review or acceptance
50 of any requests without providing specific reasons.
- 51 d. All Substitutions must be accepted by the owner in writing. The owner will accept, in writing, such proposed substi-
52 tutions as are in his or her opinion, equal in quality, utility, and appearance to the items or materials specified. Such
53 acceptance shall not relieve the Contractor from complying with the requirements of the drawings and specifica-
54 tions, and the Contractor shall be responsible at Contractor's own expense for any changes resulting from Contractor
55 proposed substitutions which affect the other parts of Contractor's own work or the work of others.
- 56 e. The manufacturer shall be a company specializing in the manufacture of the specified equipment and accessories
57 with minimum five years documented experience.
- 58 f. Failure of the Contractor to submit proposed substitutions for approval in the manner described above and within
59 the time prescribed shall be sufficient cause for disapproval by owner of any substitutions otherwise proposed.
- 60
- 61
- 62
- 63

- 1 B. Specifications may mention other manufacturers than the specific device specified. Those are manufacturers that in gen-
2 eral are acceptable, but may not have a product for this specific project. Those manufacturers still may be rejected without
3 providing specific reasons. The bidder only can rely on using items specifically mentioned in the contract documents.
4

5 **2.2. APPROVED TESTING LABORATORIES**

- 6 A. The following laboratories are approved for providing electrical product safety testing and listing services as required in
7 these specifications:
8 1. Underwriters Laboratories Inc.
9 2. Electrical Testing Laboratories, Inc.
10

11 **2.3. HAZARDOUS SUBSTANCES**

- 12 A. The Subcontractor shall submit to the Project Representative, for review by the EH&S Division, any proposed procurement,
13 stocking, installing, or other use of materials containing asbestos, cadmium, chromates, or lead.
14 B. All materials and applications shall comply with requirements of any and all Districts Regulations, including, but not limited
15 to architectural coatings, general solvent and surface coatings, solvent cleaning operations, adhesive and sealants, visible
16 emissions, and asbestos.
17 C. Contractor shall keep and maintain proof of compliance with the above-referenced regulations, including any recordkeep-
18 ing obligations, for a period of two years after completion of the project. Contractor shall make such documents or evi-
19 dence available if so requested by owner.
20 D. No materials outlawed in any of the 50 US states are to be used. Only equipment and material legal in all 50 states is to be
21 used. All Federal, state, county and local codes and ordinances regarding are to be considered deciding if a piece of equip-
22 ment or material is to be used.
23 E. The contractor assumes responsibility for proper removal, collection and storage of hazardous substances on site and dis-
24 posal of those if hazardous substances were known to be present and pointed out in these specifications or on the plans. If
25 hazardous substances are not known to be present and are found, the owner assumes responsibility for additional cost due
26 to removal, collection and storage on site. All hazardous substances are to be disposed in accordance with all federal, state
27 and local laws, codes and regulations. It is the contractor's responsibility to recognize typical hazardous substances not
28 known to be present. This includes all substances that were used in buildings of that type in the period since original con-
29 struction.
30 F. Contractor will assume that all electronic components, machinery, refrigeration devices and other common devices contain
31 hazardous substances and include disposal of such in bid price, even if those substances are not mentioned separately. If
32 special tests are necessary the owner assumes responsibility for such.
33 G. ASBESTOS:
34 1. Contractor's attention is directed to WAC NR 447, WAC HSS 159 and the Occupational Safety and Health Act (OSHA) in
35 general, part 1926.1101--ASBESTOS in particular. Contractor is responsible for compliance with all applicable regula-
36 tions when the work includes fastening to or coring through Asbestos Containing Materials (ACM) and disturbance of
37 asbestos containing caulking and mastics. Unless otherwise indicated, all caulking, sealants, glazing compounds, gas-
38 kets, asphalt roofing materials and miscellaneous adhesives are assumed to contain asbestos and are considered to be
39 Category I non-friable ACM as defined in NR 447. Waste material containing Category I non-friable ACM, is regulated as
40 Construction and Demolition (C&D) waste and may be disposed of at a Department of Natural Resources (DNR) ap-
41 proved C&D waste landfill. If Contractor's work methods cause non-friable ACM to become friable, the Contractor is
42 responsible for the disposal of the friable asbestos waste at a landfill specifically approved by DNR to accept friable as-
43 bestos. A copy of the signed waste manifest for the disposal of all friable asbestos waste shall be provided to owner
44 prior to request for final payment.
45 2. The regulations referenced above require removal of friable ACM and Category II non-friable ACM prior to demolition
46 of a building. Category I non-friable ACM does not need to be removed from a building prior to demolition if the waste
47 generated from the demolition is taken to a DNR approved C & D waste landfill. If the contractor chooses to recycle
48 building materials from a building to be demolished, the contractor is responsible for removal and disposal of all Cate-
49 gory I non-friable ACM in accordance with applicable regulations prior to demolition. If the contractor's demolition
50 methods will cause non-friable ACM to become friable, the contractor is responsible for removal and disposal of all Cat-
51 egory I non-friable ACM in accordance with applicable regulations prior to demolition.
52 3. The asbestos abatement contractor will require sole occupancy of the workspace during asbestos abatement work.
53 Contractor shall communicate with the asbestos abatement contractor and make adequate allowance for the asbestos
54 abatement work in the work schedule
55 H. LEAD BASED PAINT: Conform with OSHA and EPA recommended worker safety requirements when removing lead based
56 paint or material bearing lead based paint or material contaminated with lead by the demolition process. Contractor's at-
57 tention is directed to the Occupational Safety and Health Act (OSHA) in general and particularly to 29 CFR 1910 (LEAD
58 STANDARD) and to CFR 1926 (LEAD EXPOSURE IN THE CONSTRUCTION INDUSTRY). For OSHA compliance and regulation In-
59 terpretations, contractors may contact the area OSHA office for this project. [Milwaukee, telephone (414) 297-3315; Ap-
60 pleton, telephone (414) 734-4521; Eau Claire, telephone (715) 832-9019]. Dispose of refuse containing lead based paint or
61 contaminated with lead by the demolition process in conformance with State of Wisconsin Hazardous Waste Regulations
62 set forth by the Department of Natural Resources and in conformance with OSHA and EPA recommended worker safety re-
63 quirements.
64 I. PCB'S: Contractor shall assume all ballasts and transformers not specifically labelled as "no PCB" type to contain PCB and to
65 dispose properly meeting all regulatory requirements

- 1 J. MERCURY-CONTAINING DEVICES: Mercury containing devices are accumulated in our facilities for eventual recycling
- 2 through a contracted vendor. These devices include certain building controls and switches, thermometers, and lamps.
- 3 Lamps are stored in accordance with Environmental Protection Agency universal waste regulation 40 CFR part 273 including
- 4 storing them in containers with labels describing the contents and the start date of accumulation.
- 5 K. PAINT AND RELATED PRODUCTS: The oil-based paints are disposed of as hazardous waste
- 6 L. USED APPLIANCES AND BUILDING EQUIPMENT: Used appliances include microwaves, refrigerators, and ice machines.
- 7 Smaller pieces of building equipment include items such as water heaters and variable-drive motors. All of these items are
- 8 recycled by a contracted vendor at eh contractor's expense.
- 9 M. VOC: Volatile Organic Compounds in materials shall be limited to these maximum values:
- 10 1. Adhesives and Sealants:
- 11 2. Wood Glues: 30 g/L.
- 12 3. Metal-to-Metal Adhesives: 30 g/L.
- 13 4. Adhesives for Porous Materials (Except Wood): 50 g/L.
- 14 5. Subfloor Adhesives: 50 g/L.
- 15 6. Plastic Foam Adhesives: 50 g/L.
- 16 7. Carpet Adhesives: 50 g/L.
- 17 8. Carpet Pad Adhesives: 50 g/L.
- 18 9. VCT and Asphalt Tile Adhesives: 50 g/L.
- 19 10. Cove Base Adhesives: 50 g/L.
- 20 11. Gypsum Board and Panel Adhesives: 50 g/L.
- 21 12. Rubber Floor Adhesives: 60 g/L.
- 22 13. Ceramic Tile Adhesives: 65 g/L.
- 23 14. Multipurpose Construction Adhesives: 70 g/L.
- 24 15. Fiberglass Adhesives: 80 g/L.
- 25 16. Contact Adhesive: 80 g/L.
- 26 17. Structural Glazing Adhesives: 100 g/L.
- 27 18. Wood Flooring Adhesive: 100 g/L.
- 28 19. Structural Wood Member Adhesive: 140 g/L.
- 29 20. Single-Ply Roof Membrane Adhesive: 250 g/L.
- 30 21. Special Purpose Contact Adhesive (contact adhesive that is used to bond melamine covered board, metal, unsupported
- 31 vinyl, rubber, or wood veneer 1/16 inch or less in thickness to any surface): 250 g/L.
- 32 22. Top and Trim Adhesive: 250 g/L.
- 33 23. Plastic Cement Welding Compounds: 250 g/L.
- 34 24. ABS Welding Compounds: 325 g/L.
- 35 25. CPVC Welding Compounds: 490 g/L.
- 36 26. PVC Welding Compounds: 510 g/L.
- 37 27. Adhesive Primer for Plastic: 550 g/L.
- 38 28. Sheet Applied Rubber Lining Adhesive: 850 g/L.
- 39 29. Aerosol Adhesive, General Purpose Mist Spray: 65 percent by weight.
- 40 30. Aerosol Adhesive, General Purpose Web Spray: 55 percent by weight.
- 41 31. Special Purpose Aerosol Adhesive (All Types): 70 percent by weight.
- 42 32. Other Adhesives: 250 g/L.
- 43 33. Architectural Sealants: 250 g/L.
- 44 34. Non-membrane Roof Sealants: 300 g/L.
- 45 35. Single-Ply Roof Membrane Sealants: 450 g/L.
- 46 36. Other Sealants: 420 g/L.
- 47 37. Sealant Primers for Nonporous Substrates: 250 g/L.
- 48 38. Sealant Primers for Porous Substrates: 775 g/L.
- 49 39. Modified Bituminous Sealant Primers: 500 g/L.
- 50 40. Other Sealant Primers: 750 g/L.
- 51 41. Inside Paints and Coatings:
- 52 42. Flat Paints, Coatings, and Primers: VOC not more than 50 g/L.
- 53 43. Nonflat Paints and Coatings: VOC not more than 150 g/L.
- 54 44. Dry-Fog Coatings: VOC not more than 400 g/L.
- 55 45. Primers, Sealers, and Undercoaters: VOC not more than 200 g/L.
- 56 46. Anticorrosive and Antirust Paints applied to Ferrous Metals: VOC not more than 250 g/L.
- 57 47. Zinc-Rich Industrial Maintenance Primers: VOC not more than 340 g/L.
- 58 48. Pretreatment Wash Primers: VOC not more than 420 g/L.
- 59 49. Clear Wood Finishes, Varnishes: VOC not 1 more than 350 g/L.
- 60 50. Clear Wood Finishes, Lacquers: VOC not more than 550 g/L.
- 61 51. Floor Coatings: VOC not more than 100 g/L.
- 62 52. Shellacs, Clear: VOC not more than 730 g/L.
- 63 53. Shellacs, Pigmented: VOC not more than 550 g/L.
- 64 54. Stains: VOC not more than 250 g/L.

1
2 **2.4. BARRICADES, SIGNS, WARNING DEVICES, AND TEMPORARY PLASTIC BARRIERS**

- 3 A. Traffic barricades, traffic signs, and warning devices shall meet the requirements of applicable OSHA standards and the FHA
4 Manual of Uniform Traffic Control Devices (MUTCD).
5 B. UV stabilized high-density polyethylene barrier fence free of holes tears and other defects. Provide 4' tall fence in diamond
6 or rectangular pattern. Fencing shall be "safety orange" color, unless otherwise noted.
7 C. Posts for temporary plastic barrier fencing shall be 5' tall, minimum 12 gauge, painted metal posts.
8

9 **2.5. SEALING AND FIRESTOPPING**

- 10 A. Manufacturers: 3M, Hilti, Rectorseal, STI/SpecSeal, Tremco, or approved equal.
11 B. All firestopping systems shall be provided by the same manufacturer and shall be UL listed.
12 C. Submittals: Contractor shall submit product data for each firestop system. Submittals shall include product characteristics,
13 performance and limitation criteria, test data, MSDS sheets, installation details and procedures for each method of instal-
14 lation applicable to this project. For non-standard conditions where no UL tested system exists, submit manufacturer's
15 drawings for UL system with known performance for which an engineering judgment can be based upon.
16 D. Use a product that has a rating not less than the rating of the wall or floor being penetrated.
17 E. Contractor shall use firestop putty, caulk sealant, intumescent wrapstrips, intumescent firestop collars, firestop blocks,
18 firestop mortar or a combination of these products to provide a UL listed system for each application required for this pro-
19 ject. Provide mineral wool backing where specified in manufacturer's application detail.
20 F. Where shown or specified, pack annular space with fiberglass batt insulation or mineral wool insulation. Provide 4" sheet
21 metal escutcheon around duct on both sides of partition or floor to cover annular space.
22 G. Install approved product in accordance with the manufacturer's instructions where an installation penetrates a fire/smoke
23 rated surface. When pipe is insulated, use a product, which maintains the integrity of the insulation and vapor barrier.
24 H. Whenever possible, avoid penetrations of fire and smoke rated partitions. When they cannot be avoided, verify that suffi-
25 cient space is available for the penetration to be effectively fire and smoke stopped.
26

27 **PART 3 – EXECUTION**

28
29 **3.1. PROJECT MEETINGS**

- 30 A. Project meetings will be held at the time designated by the owner. If the principal of the firm does not attend meetings, a
31 responsible representative of the Contractor who can bind the Contractor to a decision at the meetings shall attend. The
32 contractor will write a report covering all items discussed and decisions reached and copy of such report distributed to all
33 parties involved within 3 business days. All contractors, sub-contractors and other related parties shall attend. Attendance
34 especially is required if such contractor is scheduled to perform work within the next 6 weeks.
35 B. PRE-CONSTRUCTION MEETING: Owner, design representatives and all contractor and sub-contractor representatives at-
36 tend.
37 C. PRE-INSTALLATION MEETING: prior installation, layout or other activities related to major systems, separate meetings will
38 be held to ensure proper coordination. These meetings will be initiated by the contractor. Not initiating these meetings
39 doesn't relieve the contractor from coordination responsibilities. The owner may set up such meetings as needed
40

41 **3.2. CONTINUITY OF SERVICE, TRAFFIC, SHUTDOWN AND ACCESS**

- 42 A. SITE ACCESS: The stairs shall be taken out of service for the dates as indicated in Section D of the General Requirements.
43 B. Contractor shall verify the locations of any water, drainage, gas, sewer, electric, drainage, gas, sewer, electric, tele-
44 phone/communication, fuel, steam lines or other utilities and site features which may be encountered in any excavations or
45 other site work. All lines shall be properly underpinned and supported to avoid disruption of service.
46

47 **3.3. DEMOLITION**

- 48 A. Perform all demolition as indicated on the drawings to accomplish new work. Demolition Drawings are based on casual
49 field observation and/or existing record documents. Verify field measurements and circuiting arrangements as shown on
50 Drawings, verify that abandoned wiring, piping, ducting and equipment serve only abandoned facilities. Report discrepan-
51 cies to the owner before disturbing existing installation. Beginning of demolition means installer accepts existing condi-
52 tions.
53 B. Demolition all abandoned services and devices in areas affected by this contract, even if not shown on plans. This includes
54 but is not limited to wiring, conduits, piping, and equipment.
55 C. Patch holes and openings caused by removal of material and equipment, or formerly covered by such, with like material
56 and texture of surrounding surface. Paint to match surroundings.
57 D. Disconnect all services in a manner which allows for future connection to that service. Disconnect services to equipment at
58 unions, flanges, valves, or fittings wherever possible.
59 E. Approval of all Jurisdictions Having Authority shall be obtained prior to disposal of any equipment and materials. All dis-
60 posal has to be in compliance with all local, county, state and nationwide regulations.
61 F. Don't demolition or damage equipment and material that is to stay in place. Replace and repair any equipment and instal-
62 lations that get damaged during demolition. The Contractor shall restore all disturbed areas in accordance with the draw-
63 ings and specifications. If plans and specifications do not address restoration of specific areas, these areas will be restored
64 to pre-construction conditions as approved by owner.

- 1 G. Verify the locations of, and protect, any buildings, structures, utilities, paved surfaces, signs, streetlights, utilities, landscap-
2 ing and all other such facilities that are intended to remain or be salvaged. Make such explorations and probes as neces-
3 sary to ascertain any required protection measures that shall be used before proceeding with demolition.
- 4 H. Provide and maintain adequate catch platforms, warning lights, barricades, guards, weather protection, dust protection,
5 fences, planking, bracing, shoring, piling, signs, and other items required for proper protection.
- 6 I. Report damage of any facilities or items scheduled for salvaging to owner.
- 7 J. Explosives shall not be used for demolition.
- 8 K. Remove all equipment, fixtures and other materials scheduled for salvage prior to beginning demolition operations.
- 9 L. Abandon gas, electric and communication utilities in accordance with local utility company requirements, or applicable
10 substantive requirements if considered private.
- 11 M. Carry out vehicle loading as necessary within the project boundaries or as defined or indicated on the drawings, but not in
12 locations that block vehicular traffic on the streets or pedestrian traffic on adjacent public walks.
- 13 N. Dismantle each structure in an orderly manner to provide complete stability of the structure at all times. Provide bracing
14 and shoring where necessary to avoid premature collapse of structure.
- 15 O. Conduct demolition operations and the removal of rubbish and debris in such a way that a minimum of nuisance dust is
16 caused. Constantly sprinkle rubbish and debris with water if necessary to keep nuisance dust to a minimum.
- 17 P. Where necessary to prevent collapse of any construction, install temporary shores, underpinning, struts or bracing. Do not
18 commence demolition work until all temporary construction is complete.
- 19 Q. Masonry and concrete shall be demolished in small sections. Use braces and shores as necessary to support the structure
20 of the building or structure and protect it from damage. Where limits of demolition are exposed in the finished work, cut-
21 ting shall be made with saws, providing an absolutely straight line, plumb, true and square.
- 22 R. Operate equipment so as to cause a minimum of damage to plaster which is to remain, and so as to keep dust and dirt to a
23 minimum.

24
25

3.4. TEMPORARY CONSTRUCTION

- 26 A. Temporary construction shall conform to all requirements and laws of state and local authorities, which pertain to opera-
27 tion, safety, and fire hazards. Contractor shall furnish and install all items necessary for conformance with such require-
28 ments, whether called for under separate sections of these Specifications or not. Contractor shall provide, maintain, and
29 remove upon completion of his work:
- 30 B. Employ temporary crossovers and bypass to utilities, electrical connections, traffic and footbridges, and walkways used to
31 maintain services or communications, which cannot be interrupted or curtailed.
- 32 C. Provide temporary rigging, scaffolding, shoring, hoisting equipment, and all other temporary work as required for this pro-
33 ject.

34

3.5. INSTALLATION

- 35 A. Install in accordance with manufacturer's instructions and all code requirements. Provide the owner with copy of manufac-
36 turer's instructions prior to installation. The Contractor shall be responsible for correcting any infringement on this re-
37 quirement at no cost to owner.
- 38 B. Provide carpentry, cutting, patching, and core drilling required for installation of material and equipment.

39
40

3.6. DELIVERY, STORAGE AND HANDLING OF MATERIALS

- 41 A. Contractor must be present to accept delivery of all equipment and material shipments. Owner will not knowingly accept,
42 unload or store anything delivered to the site for the Contractor's use. Inadvertent acceptance of delivered items by owner
43 shall not constitute acceptance or responsibility for any of the materials or equipment. It is the Contractor's responsibility
44 to assume liability for equipment or material delivered to the job site.
- 45 B. Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays. Materials and
46 equipment shall be delivered to the site in adequate time to ensure uninterrupted progress of the work and inspection of
47 material by owner. Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels
48 intact. Packaged units shall be delivered in their original crates.
- 49 C. Store in a clean and dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to
50 protect units from dirt, water, construction debris, and traffic. Promptly inspect shipments to insure that the material is un-
51 damaged and complies with specifications. Materials or equipment, which do not conform to the Specifications or are dam-
52 aged shall not be incorporated in the work and shall be immediately removed from the site.
- 53 D. Contractor shall confine equipment, apparatus, storage of materials and operations to limits indicated on the drawings or
54 by specific direction of owner. The Contractor assumes full responsibility for damage due to the storage of materials.
- 55 E. Material shall be stored according to manufacturer's recommendations as a minimum. Provide and maintain watertight
56 storage sheds on the premises where directed, for storage of materials that might be damaged by weather. Materials, con-
57 struction sheds, and earth stockpiles shall be located so as not to interfere with the use of the park.
- 58 F. If necessary, material will be stored off site at the Contractor's expense. Offsite storage agreements will not relieve the
59 Contractor from using proper storage techniques. Storage and protection methods must allow inspection to verify prod-
60 ucts.
- 61 G. All materials shall be stored in a manner that prevents release of hazardous material to the environment. All hazardous
62 materials, including motor fuels, shall be properly handled and contained to prevent spills or other releases. The Contractor
63 shall develop and maintain a contingency plan to provide emergency response, containment, and cleanup of spills of haz-
64 ardous materials resulting from contract activities. All spills and releases shall be reported to owner immediately

65

1 **3.7. CONCRETE WORK**

- 2 A. Concrete to be 3,000 psi at 28 days, 3/4 inch aggregate, five bags cement, three inch slump, air entraining admixture. The
3 ACI 614 Recommended Practice for Measuring, Mixing and Placing of Concrete shall constitute the execution requirements.
4 When patching existing concrete flooring the newly exposed/surface of the existing concrete should be saturated with wa-
5 ter/surface dry (no standing-water) to promote adhesion to the new concrete.
6
7

8 **3.8. OPENINGS, SLEEVES, CUTTING, STRUCTURAL ATTACHMENT, PATCHING AND PAINTING**

- 9 A. Before any drilling, cutting or other type of opening the contractor shall verify that no conduits, wires, pipes or other items
10 are in or near opening area.
11 B. Openings shall be the responsibility of the Contractor requiring the openings even if such openings are not shown on draw-
12 ings. The Contractor shall install sleeves for all openings and shall submit to the owner for review and approval, layout
13 drawings of all such required sleeves and/or openings. Sleeve and opening sizes and locations shall be dimensioned from
14 column lines and floor elevations or from a point of reference approved by owner.
15 C. No devices or materials shall be attached to non-structural or structural members or parts of the structure without approval
16 by owner. All items shall be attached to structurally stable parts only.
17

18 **3.9. IDENTIFICATION**

- 19 A. Refer to IDENTIFICATION requirements in the HVAC 23 00 00 and Electrical 26 00 00 Sections of this Project Manual.
20

21 **3.10. TRAINING AND DEMONSTRATION**

- 22 A. The owner's facility staff (and occupants and service Contractors as needed), shall receive orientation and training on the
23 proper care and maintenance of the roofing system with emphasis on preventative inspections. This training shall be sum-
24 marized in the O&M Manual.
25 B. Refer to Training Requirements in the HVAC (23 00 00) and Electrical (26 00 00) Sections of this Project Manual.
26

27 **3.11. TESTS, PUNCH LIST AND FINAL ACCEPTANCE**

- 28 A. Contractor shall make all necessary adjustments and replacements affecting the work, which is necessary to fulfill owner's
29 requirements and to comply with the directions and recommendations of the manufacturer, and to comply with all codes
30 and regulations, which may apply to the entire installation.
31 B. Notice that the work is ready for final inspection and acceptance shall be given after the Contractor has carefully inspected
32 all portions of the work, has reviewed in detail the drawings and specifications, and that to the best of the Contractor's
33 knowledge all conditions of the contract documents have been fulfilled. The owner and the Contractor shall make a joint
34 inspection of the work and owner will issue a punchlist.
35 1. Multiple punch lists can be submitted and neither punchlist may be considered final. Punchlist can be submitted
36 throughout the entire warranty period.
37 2. If Contractor fails to perform required corrective work in less than 30 days upon receipt of punch list by Contractor,
38 owner can perform corrections or hire a separate contractor and charge the Contractor the full cost.
39 3. Contractor shall advise owner that the necessary work has been performed. If punch list items were not resolved and
40 the work was not performed in less than 30 days upon receipt of punch list by Contractor, the Contractor shall be re-
41 quired to compensate the owner for additional site visits of project manager, design professional and other related
42 staff at a rate of \$ 100/hour plus mileage. The amount shall be paid to the owner prior to processing the final pay-
43 ment. Payment may be processed as deductive change order.
44 C. After deficiencies, if any, have been corrected or accounted for, and after all work is satisfactorily complete, the City will
45 accept the work; and Notice of Completion will be filed by owner. The contractor shall inspect the roofing system before
46 claiming completion. Prior to final acceptance, filing of the Notice of Completion or processing of final payment, the follow-
47 ing shall be done and submitted reviewed and accepted by owner:
48 1. Certificates of compliance and guarantees required under various Sections
49 2. Operating and maintenance manuals
50 3. Instruction to City personnel, as required
51 4. Replacement material as required in specifications
52 5. As-built documents
53 6. All punch list items resolved
54 7. All training provided (except deferred seasonal training)
55 8. All warranty issues brought to Contractor's attention so far resolved
56 9. Warranty documents signed by representative of manufacturer, guarantee documents, roofing agreement and other
57 warranty related documents
58

59 **3.12. CLEANING**

- 60 A. The construction site shall be kept in clean and safe manner. The Contractor shall clean up and remove from the premises,
61 on a daily basis accumulation of surplus materials, rubbish, debris and scrap and shall repair all damage to new and exist-
62 ing equipment resulting from its work. When job is complete, this Contractor shall remove all tools, excess material and
63 equipment, etc., from the site. Contractors or subcontractors found to be in violation may be required to leave the jobsite
64 until their staff is trained in orderly, clean and safe construction site work. Clean and safe construction site includes but is
65 not limited to:

- 1 1. All trades keep a separate and neat area for material, equipment etc.
- 2 2. Equipment and material not needed anymore is removed from the jobsite
- 3 3. Demolition material and equipment is removed from jobsite daily
- 4 4. All material and equipment is sorted and stored properly
- 5 B. Spreading of dirt, dust and other construction related material must be kept to a minimum. Occupied and work areas must
- 6 be separated by seals. Such seals shall be inspected and repaired frequently as needed to ensure proper sealing at all
- 7 times.
- 8 C. Keep streets, walks and all other adjacent paved areas clean and swept clear of dirt, mud and debris deposited as a result
- 9 of this operation. Protect surrounding area from dust. Control rodents, and other vermin associated with demolition op-
- 10 erations.
- 11 D. All installed items shall be cleaned at time of installation, and all lens exteriors shall be cleaned just prior to final inspec-
- 12 tion. Equipment shall be thoroughly cleaned of all stains, paint, spots, dirt and dust. All temporary labels not used for in-
- 13 struction or operation shall be removed. Dust, dirt and other foreign matter shall be removed completely from all internal
- 14 surfaces of all mechanical and electrical units, cabinets, ducts, pipes, etc. Dirt, soil, fingerprints, stains and the like, shall be
- 15 completely removed from all exposed finished surfaces.
- 16 E. Contractor shall wash all glass immediately prior to the occupancy of this project. Work shall include the removal of labels,
- 17 paint splattering, glazing compound and sealant. Surfaces shall include mirrors and both sides of all glass in windows, bor-
- 18 rowed lights, partitions, doors and sidelights. In addition to the above, the Contractor shall be responsible for the general
- 19 "broom" cleaning of the premises and for expediting all of the cleaning, washing, waxing and polishing required within the
- 20 technical sections of the specifications governing work under this Contract. The Contractor shall also perform "final"
- 21 cleaning of all exposed surfaces to remove all foreign matter, spots, soil, construction dust, etc., so as to put the project in
- 22 a complete and finished condition ready for acceptance and use intended.
- 23 F. If rubbish and debris is not removed, or if surfaces are not cleaned as specified above, the owner reserves the right to have
- 24 said work done by others and the related cost(s) will be deducted from monies due the Contractor.
- 25
- 26
- 27

END OF SECTION

APPENDIX A - WASTE MATERIALS ESTIMATING SHEET

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Instructions: Use as many sheets as needed.

PROJECT TITLE: _____
COMPANY: _____
DATE: _____

		Total Amount Generated		Amount Recycled		Amount Salvaged		Amount Sent to Landfill	
Material	Destination	Tons	Cu Yds	Tons	Cu Yds	Tons	Cu Yds	Tons	Cu Yds
Total									

9

SECTION 01 26 57
CHANGE ORDER REQUESTS (COR)

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18

19 **PART 1 – GENERAL**

20
21 **1.1. SUMMARY**

- 22 A. Except in cases of emergency no changes in the Work required by the Contract Documents may be made by
23 the General Contractor (GC) without having prior approval of the City Engineer or his representative.
24 B. The City may at any time, without invalidating the Contract and without Notice to Sureties, order changes in
25 the Work by written Change Order (CO). Such changes may include additions and/or deletions.
26 C. Where the City desires to make changes in the Work through use of written Change Order Request (COR), the
27 following procedures apply:
28 1. If requested by the City, the GC shall prepare and submit a detailed proposal, including all cost and time
29 adjustments to which the GC believes it will be entitled if the change proposed is incorporated into the
30 Contract. The City shall be under no legal obligation to issue a Change Order for such proposal.
31 2. The parties shall attempt in good faith to reach agreement on the adjustments needed to the Contract to
32 properly incorporate the proposed change(s) into the Work. In the event that the parties agree on such
33 adjustments, the City may issue a Change Order and incorporate such changes and agreed to
34 adjustments, if any.
35 3. In some instances, it may be necessary for the City to authorize Work or direct changes in Work for which
36 no final and binding agreement has been reached and for which unit prices are not applicable. In such
37 cases the following shall apply.
38 a. Upon written request by the City, the GC shall perform proposed Work
39 b. The cost of such change may be determined in accordance with this specification.
40 c. In the event agreement cannot be accomplished as contemplated herein, the City may authorize
41 the Work to be performed by City forces or to hire others to complete the Work. Such action on
42 the part of the City shall not be the basis of a claim by the GC for failure to allow it to perform the
43 changed Work.
44 D. Where changes in the Work are made by the City through use of a force account basis, the GC shall as soon as
45 practicable, and in no case later than ten (10) working days from the receipt of such order, unless another time
46 period has been agreed to by both parties, give the City written Notice, stating:
47 1. The date, circumstances and source of the extra work; and,
48 2. The cost of performing extra work described by such Order, if any; and,
49 3. Effect of the order on the required completion date of the Project, if any.
50 E. The giving of each Notice by the GC as prescribed by this specification, shall be a requirement to liability of the
51 City for payment of any additional costs incurred by the GC in implementing changes in the Work. Under this
52 specification, no order or statement of the City shall be treated as a Change Order, or shall entitle the GC to an
53 equitable adjustment of the terms of this Contract or damages for costs incurred by the GC on any activity for
54 which the Notice was not given.
55 F. In the event Work is required due to an emergency as described in this specification the GC must request an
56 equitable adjustment as soon as practicable, and in no case later than ten (10) working days of the
57 commencement of such emergency.

- 1 G. All GC requests for equitable adjustment shall be submitted to the CPM per the specifications below. Such
2 requests shall set forth with specificity the amount of and reason(s) for the proposed adjustment and shall be
3 accompanied by supporting information and documents.
- 4 H. No adjustment of any kind shall be made to this Contract, if asserted by the GC for the first time, after the date
5 of final payment.
- 6 I. This specification shall be used by the GC when preparing documentation for any COR to ensure each has been
7 properly and completely filled out as required by the City of Madison.
- 8

9 **1.2. RELATED SPECIFICATION SECTIONS**

- 10 A. Section 01 26 63 Change Order (CO)
- 11 B. Parts of this specification will reference articles within "The City of Madison Standard Specifications for Public
12 Works Construction".
- 13 1. Use the following link to access the Standard Specifications web page:
14 <http://www.cityofmadison.com/business/pw/specs.cfm>
- 15 a. Click on the "Part" chapter identified in the specification text. For example if the specification
16 says "Refer to City of Madison Standard Specification 210.2" click the link for Part II, the Part II
17 PDF will open.
- 18 b. Scroll through the index of Part II for specification 210.2 and click the text link which will take you
19 to the referenced text.
- 20

21 **1.3. DEFINITIONS AND STANDARDS**

- 22 A. **LABOR:** The amount of time and cost associated with the performance of human effort for a defined scope of
23 Work. Labor is further defined as follows:
- 24 1. Labor rate is the total hourly rate which includes the base rate of pay, fringe benefits plus each
25 company's cost of required insurance, also referred to as a reimbursable labor rate.
- 26 2. Unit labor is the labor hours anticipated to install the corresponding unit of material.
- 27 3. Labor cost is the labor hours multiplied by the hourly labor rates.
- 28 B. **MATERIAL:** Actual material cost is the amount paid, or to be paid, by the GC for materials, supplies and
29 equipment entering permanently into the Work, including cost of transportation and applicable taxes. The cost
30 shall not exceed the usual and customary cost for such items available in the geographical area of the project.
- 31 C. **LARGE TOOLS AND MAJOR EQUIPMENT:** Large tools and major equipment are those with an initial cost greater
32 than \$1,500, whether from the GC or other sources.
- 33 1. Tool and equipment use and time allowed is only for extra work associated with change orders.
- 34 a. Rental Rate is the machine cost associated with operating a piece of equipment for a defined
35 length of time (hour, day, week, or month) and shall not exceed the usual and customary amount
36 for such items available in the geographical area of the project.
- 37 b. Rental cost is the rental rate multiplied by the anticipated duration the equipment shall be
38 required.
- 39 2. The GC shall provide a breakdown of all rental rates to indicate what items and costs are associated with
40 the rate. Examples of items to include in the breakdown would be fuel consumption, lubrication,
41 maintenance and other similar expenses but not including profit and overhead.
- 42 3. When large tools and equipment needed for Change Order work are not already at the job site, the
43 actual cost to get the item there is also reimbursable.
- 44 D. **BOND COST:** The cost shall be calculated at 1% of the total proposed change order.
- 45 E. **SUB-CONTRACTOR COSTS:** Sub-contractor costs are for those labor, material, and equipment costs required by
46 subcontracted specialties to complete the Change Order work including allowable markups as outlined within
47 this specification.
- 48 F. **OVERHEAD AND PROFIT Markup:** The allowable markup percentage to a COR by the GC and Sub-contractors for
49 overhead and profit. All of the following are expenses associated with overhead and profit and shall not be
50 reimbursable as Individual Items on any COR:
- 51 1. **CHANGE ORDER PREPARATION:** All costs associated with the preparing and processing of the change
52 order.
- 53 2. **DESIGN, ESTIMATING, AND SUPERVISION:** All such efforts, unless specifically requested by Owner as
54 additional Work to be documented as a COR or portion thereof.
- 55 3. **INSTALLATION LAYOUT:** The layout required for the Installation of material and equipment, and the
56 installation design, is the responsibility of the GC.

- 1 4. SMALL TOOLS AND SUPPLIES: The cost of small hand tools with an initial cost of \$1,500 or less, along
2 with consumable supplies and expendable items such as drill bits, saw blades, gasoline, lubricating or
3 cutting oil, and similar items.
- 4 5. GENERAL EXPENSE: The general expense, which is those items that are a specific job cost not associated
5 with direct labor and material such as job trailers, foreman truck, and similar items.
- 6 6. RECORD DRAWINGS: The preparation of record or as-built drawings.
- 7 7. OTHER COSTS: Any miscellaneous cost not directly assessable to the execution of the Change Order
8 including but not limited to the following:
9 a. All association dues, assessments, and similar items.
10 b. All education, training, and similar items.
11 c. All drafting and/or engineering, unless specifically requested by Owner as additional Work to be
12 documented as a Change Order proposal or portion thereof.
13 d. All other items including but not limited to review, coordination, estimating and expediting, field
14 and office supervision, administrative work, etc.
- 15 G. Contract Extension: The necessary amount of time to be added to the contract deadlines for the completion of a
16 change order.
- 17
- 18 **1.4. CONTRACT EXTENSION**
- 19 A. The GC shall not assume that every COR will require a Contract Extension. If the GC feels a contract extension is
20 warranted he/she shall provide sufficient scheduling information that shows how the COR being requested
21 impacts the critical path of the project.
- 22 B. The City of Madison strongly encourages the GC to explore alternative methods and practices prior to submitting
23 a COR with a request for contract extension.
- 24
- 25 **1.5. OVERHEAD AND PROFIT MARKUP**
- 26 A. Pursuant to the City of Madison Standard Specifications for Public Works Construction, Section 104.7, Extra
27 Work, the following maximum allowable markups shall be strictly enforced on all change orders associated with
28 the execution of this contract.
- 29 1. The total maximum overhead and profit shall not exceed fifteen percent (15%) of the total costs.
- 30 2. The total maximum overhead and profit shall be distributed as follows:
- 31 a. For work performed and materials provided solely by the General Contractor, fifteen percent
32 (15%) of the total costs.
- 33 b. For work performed and materials provided solely by Sub-contractors and supervised by the
34 General Contractor:
- 35 i. Supervision of the GC, five percent (5%) of the total Sub-contractor cost.
- 36 ii. Sub-contractors work and materials ten percent (10%) of the total Sub-contractor cost.
- 37
- 38 **1.6. PERFORMANCE REQUIREMENTS**
- 39 A. The GC shall become thoroughly familiar with this specification as it will identify procedures and expenses that
40 are or are not allowed under the Change Order and Change Order Request process.
- 41 B. The GC shall be responsible for all of the following:
- 42 1. Carefully reviewing the CB that is associated with the COR.
- 43 2. Collecting required supporting documentation from all contractors that quantify the need for a COR.
- 44 a. Labor hours and wage rates
- 45 b. Material costs
- 46 c. Equipment costs
- 47 C. The following shall apply to establishing prices for labor, materials, and equipment costs:
- 48 1. Where Work to be completed has previously been established by individual bid items in the contract bid
49 proposal the GC shall use the unit bid prices previously established.
- 50 2. Where Work to be completed was bid as a Lump Sum without individual bid items the GC shall provide a
51 breakdown of all labor, materials, equipment including unit rates and quantities required.
- 52 D. The completion date is determined by Owner. The schedule, however, is the responsibility of the GC. Time
53 extensions for extra Work will be considered when a schedule analysis of the critical path shows that the Change
54 Order Request places the Work beyond the completion date stated in the Contract.
- 55
- 56 **1.7. QUALITY ASSURANCE**
- 57 A. The GC shall be responsible for ensuring that all COR supporting documentation meets the following
58 requirements prior to completing the COR form:

1. Sufficiently indicates labor, material, and other expenses related to completing the intent of the CB.
 2. No costs exceed the usual and customary amount for such items available in the geographical area of the project, and no costs exceed those established under the contract.
- B. The Project Engineer (PE), City Project Manager (CPM), other members of the consulting staff, and city staff shall review all COR requests to ensure that the intent of the CB will be met under the proposal of the COR or request additional information as necessary.

PART 2 – PRODUCTS

2.1. CHANGE ORDER REQUEST FORM

- A. Will be provided by CPM.

PART 3 - EXECUTION

3.1. ESTABLISHING A CHANGE ORDER REQUEST

- A. Upon receipt of a Construction Bulletin (CB) where the GC believes a significant change in contract scope warrants the submittal of a COR the GC shall do all of the following within ten (10) working days after receipt of the CB:
1. Review the CB with all necessary trades and sub-contractors required by the change in scope.
 - a. Additions or deletions to the contract scope shall be as directed within the CB.
 - b. Additions or deletions of labor and materials shall be determined by the GC based on the directives of the CB.
 2. Assemble all required back-up documentation for additions and deletions, including material breakdown, labor breakdown and other related contract costs as previously outlined in this specification.
 3. Submit a COR request form.
- B. Submitting a COR does not obligate the GC to complete the work associated with the COR nor does it obligate the Owner to approve the COR as a change to the contract.

3.2. CHANGE ORDER REQUEST REVIEW, APPROVAL, AND PROCESSING

- A. The PE and CPM shall review all CORs submitted by the GC.
1. Additional consulting staff and city staff having knowledge of the components of the COR shall review and advise the PE and CPM as to the accuracy of the items, quantities, and associated costs of the COR as directed by the CB.
 2. The CPM shall review the COR with the Owner.
- B. If required the PE and CPM, shall in good faith, further negotiate the COR with the GC as necessary. All amendments to any COR shall be documented.
- C. After final review of the COR the CPM and Owner may accept the COR.
- D. The CPM shall prepare the COR in the form of an official Board of Public Works Change Order for final review and approval as outlined in Section 01 26 63 Change Order (CO).
- E. The GC shall not act upon any accepted COR until it has received final approval through the Public Works process as an official CO to the Work unless instructed to do so by the CPM. Proceeding without the final approval of a fully authorized Change Order is at the GC's own risk.

3.3. EMERGENCY CHANGE ORDER REQUEST

- A. In the event Work is required due to an emergency as described in the Contract Documents, the GC must request an equitable adjustment as soon as practicable, and in no case later than ten (10) working days of the commencement of such emergency.
- B. The GC shall provide full documentation of all labor, materials and equipment used during the period of emergency as part of the COR submittal.

END OF SECTION

**SECTION 01 26 63
CHANGE ORDER (CO)**

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12 3.2. EXECUTION OF THE CHANGE ORDER 2
13

14 **PART 1 – GENERAL**

15
16 **1.1. SUMMARY**

- 17 A. Except in cases of emergency, no changes in the Work required by the Contract Documents may be made
18 by the General Contractor (GC) without having prior approval of the City Project Manager (CPM).
19 B. The City may at any time, without invalidating the Contract and without Notice to Sureties, order changes in
20 the Work by written Change Order. Such changes may include additions and/or deletions.
21 C. The Change Order (CO) is a Board of Public Works (BPW) form that is reviewed and approved by a specific
22 process.
23 D. The CO form is typically made up of multiple Change Order Requests (CORs) and/or Bid Items as appropriate
24 depending on the type of project and how the contract was bid.
25

26 **1.2. RELATED SPECIFICATION SECTIONS**

- 27 A. Section 01 26 63 Change Order Request (COR)
28

29 **1.3. BOARD OF PUBLIC WORKS PROCEDURE**

- 30 A. The Board of Public Works has a very explicit procedure for the review and approval of all change orders
31 associated with any Public Works Contract as follows:
32 1. The Supervisory Chain of the CPM shall review and approve any CO under \$20,000 provided It does not
33 include either of the following:
34 a. The CO does not request a time extension to the contract.
35 b. The CO does not cause the contract contingency sum to be exceeded.
36 2. The Board of Public Works shall review and approve any CO that requires any of the following:
37 a. Any CO over \$20,000.
38 b. Any CO requesting a time extension to the contract regardless of the monetary value of the CO.
39 c. Any CO that that causes the contract contingency sum to be exceeded.
40 B. The Board of Public Works generally meets every other week and only once in August and December. The GC is
41 cautioned that, under normal scheduling, a CO requiring a BPW review will take a minimum of two (2) weeks to
42 achieve final approval.
43 1. The City shall not be responsible for additional delays to the Work caused by the scheduling constraints
44 of the Board of Public Works.
45 C. ***SPECIAL NOTE:*** The GC is cautioned to never proceed unless told to do so by the CPM. Only in rare instances
46 may the CPM give a written notice to proceed on a COR without an approved CO. Proceeding without the
47 written notice of the CPM or an approved CO is at the GC's own risk.
48

49 **PART 2 – PRODUCTS**

50
51 **2.1. CHANGE ORDER FORM**

- 52 A. Provided by CPM.
53

54 **PART 3 - EXECUTION**

55
56 **3.1. PREPARATION OF THE CHANGE ORDER**

- 57 A. The CPM shall prepare the required CO as follows:
58 1. Provide Information for all contract information.

- 1 2. Provide a general description of the items described within the change order.
- 2 3. Provide detailed information for each Item on the CO form. At the option of the CPM he/she may include
- 3 multiple Change Order Requests each as their own item.
- 4 4. Provide required pricing breakdown and accounting information as needed for the item.
- 5 5. Insert attachments of contractor/architect provided information that clarifies and quantifies the CO.
- 6 Attachments may include but not be limited to material lists, estimated labor breakdown, revised details
- 7 or specifications, and other documents that may be related to the requested change.
- 8 6. Save the final version of the completed CO.
- 9

10 **3.2. EXECUTION OF THE CHANGE ORDER**

- 11 A. The GC shall do the following:
 - 12 1. Review all items on the CO form.
 - 13 2. The GC shall notify the CPM immediately of any errors or discrepancies on the form and shall not sign or
 - 14 save it.
 - 15 a. The CPM shall make any corrections as needed, re-save the form, and notify the GC.
 - 16 3. If/when the GC concurs with the CO form as drafted the GC shall digitally sign the form.
- 17 B. The CPM shall do the following:
 - 18 1. Monitor the review process
 - 19 2. Ensure that proper BPW procedures are executed as needed by the CO approval process.
 - 20 a. Schedule the CO on the next available BPW agenda if required.
 - 21 i. Attend the BPW meeting to speak on the CO to board members and answer questions.
 - 22 ii. The GC and/or PE may be required to attend the BPW meeting to address specific
 - 23 information as it relates to the Work and/or materials associated with the CO.
 - 24 3. Monitor final approval and distribution of the CO.
 - 25 4. Notify the GC that the CO has been completed.
 - 26 5. Ensure that the CO is posted to the next Public Works payment schedule.
 - 27 6. Verify that the GC's next Progress Payment-Schedule of Values show the CO as part of the contract sum.
- 28 C. Upon final approval of the CO the GC may proceed with executing the Work associated with the CO.
- 29
- 30
- 31
- 32
- 33

END OF SECTION

04 01 40
REPOINTING OF MASONRY JOINTS

04 01 40 REPOINTING OF MASONRY JOINTS

1.1 SCOPE OF WORK

Work for this project shall consist of raking out mortar joints and repointing as indicated on the plan set. Inspection and identification of the areas of mortar replacement were conducted prior to removal of the loose paint. The contractor shall provide an additional 300 linear feet of repointing in the base bid to cover any of additional joints not noted in the inspection. The contractor should note that there is some settling cracks in the building which will require some mortar joints to be replaced for the full depth of the mortar joint. This is estimated at less than 10% of the joints scheduled for repointing. This work shall be included in the base bid. Once the walls have been prepared for painting and the loose paint has been removed, the contractor shall provide a plan for the actual repointing work that will be accomplished. Quantities may be adjusted at this time. The City Project Manager shall approve of any additional repointing beyond this scope.

1.2 DEFINITIONS

- A. Repointing: The process of raking out (removing) mortar and replacing it with new mortar.
- B. Pointing: The process of placing new mortar in existing joint spaces, which have previously been raked out. This term does not include the raking out process.
- C. Tuckpointing: The process of touching up existing mortar joints by filling in recesses with new mortar, without first raking out the joints.

1.3 SUBMITTALS

- A. Product Data: Submit manufacturer's technical data for each product indicated including recommendations for their applications and use. Includes test reports and certifications substantiating that products comply with requirements.
- B. Submit color/texture samples.
For each type of mortar for pointing and masonry rebuilding and repair, submit samples in the form of mortar strips 6 inches long by 1/2 inch wide set in aluminum or plastic channels. These samples must be cured a minimum of 30 days prior to the start of work. The Project Manager must approve the mortar type and color match prior to starting work. The formula for the successful color match shall be submitted to the project manager.
- C. Restoration program for each phase of the restoration process, including protection of surrounding materials on building and site during operations. Describe in detail the materials, methods, and equipment to be used for each phase of the restoration work.

1.3 QUALITY ASSURANCE

- A. Restoration Specialist: Work must be performed by a firm having not less than 5 years successful experience in comparable masonry restoration projects and employing personnel skilled in the restoration processes and operations indicated. Submit 3 references for similar type work.
- B. After awarding the contract and prior to starting work: Prepare 2 separate sample areas of approximately 2 feet high by 2 feet wide for each type of repointing required, one for demonstrating methods and quality of workmanship expected in removal of mortar from joints

04 01 40
REPOINTING OF MASONRY JOINTS

and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints appearance to adjacent existing joints. The intent of the new pointing work is to match cleaned existing mortar. Newly pointed areas should be consistent with existing adjacent mortar joints for color and texture.

1.4 PROJECT CONDITIONS

- A. Do not repoint mortar joints or repair masonry unless air temperature is between 40°F and 85°F and will remain so for at least 48 hours after completion of work.
- B. Prevent grout or mortar used in repointing and repair work from staining face of surrounding masonry and other surfaces. Immediately remove grout and mortar in contact with exposed masonry and other surfaces.
- C. Protect sills, ledges, and projections from mortar droppings.

1.5 SEQUENCING/SCHEDULING

- A. Perform masonry restoration work in the following sequence:
 - 1. Repair any existing masonry as specified in the scope of work, including replacing existing masonry with new masonry materials.
 - 2. Rake out existing mortar from joints indicated to be repointed.
 - 3. Repoint existing mortar joints of masonry indicated to be restored.

PART 2 - PRODUCTS

2.0 MORTAR MATERIALS

- A. Portland Cement: ASTM C 150, Type I
- B. Hydrated Lime: ASTM C 207, Type S
- C. Mortar Sand: ASTM C 144, unless otherwise indicated.
 - 1. Color: Provide natural sand; of color necessary to produce required mortar color.
 - 2. For the repointing mortar, provide sand with rounded edges.
 - 3. Match size, texture, and gradation of existing mortar sand as closely as possible. Blend several sands, if necessary, to achieve suitable match.
- D. Mortar Pigments: Natural and synthetic iron oxides, compounded for mortar mixes. Use only pigments with a record of satisfactory performance in masonry mortars.
- E. Water: Potable.
- F. Selection of Mortar: Use repointing mortar of the same or weaker composition as the original mortar.

2.1 REPOINTING MORTAR MIXES

- A. Measurement and Mixing: Measure cementitious and aggregate material in a dry condition by volume. Do not measure by shovel, use known measure. Mix materials in a clean mechanical batch mixer.

Mixing Pointing Mortar:

1. Dry mix all solid materials.
 2. Add sufficient water to produce a damp mix that will retain its shape when pressed into a ball by hand. Mix from 3-7 minutes, preferably with a mechanical mixer.
 3. Let mortar stand for not less than 1 hour not more than 1 ½ hour for prehydration.
 4. Add sufficient water to bring the mortar to the proper consistency for tuckpointing, somewhat drier than mortar used for laying the units.
 5. Use the mortar within 2 ½ hours of its initial mixing. Permit tempering of the mortar within the time interval.
- B. Colored Mortar: Produce mortar of color required by using pre-manufactured concentrated colored mortar pigment.
1. Colored Mortar Pigment: Where colored mortar pigments are indicated, do not exceed a pigment-to-cement ratio of 1:10 by weight.
- C. Do not use admixtures of any kind in mortar, unless otherwise indicated.
- D. Mortar Proportions: Mix mortar materials in the following proportions:
1. Pointing Mortar for CMU: Type S, One part white portland cement, one half part lime, and four and one half parts colored or natural mortar aggregate.
 - a. Add colored mortar pigment to product as required.

PART 3 - EXECUTION

3.9 REPOINTING MASONRY

- A. Rake out joints as follows:
1. Rake out mortar from joints to depths equal to 2-1/2 times their widths but not less than 3/4 inch nor less than that required to expose sound, unweathered mortar.
 2. Remove mortar from masonry surfaces within raked-out joints to provide reveals with square backs and to expose masonry for contact with pointing mortar. Brush, vacuum, or flush joints to remove dirt and loose debris.
 3. Do not spall edges of masonry units or widen joints. Replace damaged masonry units.
 - a. Power-operated rotary hand saws and grinders may be used only if the contractor is able to satisfactorily field demonstrate to the Project Manager the ability of the operators to use tools without damaging the masonry. The equipment must be sized for the operator in order to satisfactorily control the cutting action with precision. Any masonry units that are damaged in this process shall be the responsibility of the contractor to repair or replace.

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REPOINTING OF MASONRY JOINTS

- b. The contractor shall provide dust containment when using power operated grinders or saws that generate silica dust. The contractor shall field demonstrate safeguards that adequately protect the general public from the hazardous of silica dust.

B. Repoint joints as follows:

1. Rinse/saturate the masonry joint surfaces with water to remove dust and mortar particles and thoroughly saturate the masonry. Time the rinsing application so that at the time of pointing excess water has evaporated or run off and joint surfaces are damp but free of standing water. If rinse water has dried, dampen masonry joint surfaces before pointing.
2. Repoint mortar joints less than 1 1/4" in depth in a single lift. Start at one end and work away from the starting area. Compact the mortar thoroughly to ensure joints are fully packed and no voids or air pockets are in the mortar. Apply additional lifts not greater than 1 1/4" in depth. Allow freshly applied mortar joint to become "thumbprint hard" before applying an additional lift.
3. Once area is complete, and mortar is thumbprint hard, final tool (strike) mortar joints in opposite direction ensuring mortar joints are fully packed and tool (strike) to final appearance. Joints shall match existing joints as closely as possible. Take care not to spread mortar over edges onto exposed masonry surfaces, or to featheredge mortar. Remove excess mortar from edge of joint by brushing.
4. Spray a light mist of water on mortar to aid in proper curing. Maintain mortar in a damp condition while on jobsite. Final spray a light mist of water on mortar just prior to leaving jobsite.

3.10 FINAL CLEANING

- A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter using wood scrapers, stiff nylon or bristle brushes and clean water spray-applied at a low pressure.
- B. Using metal scrapers or brushes is not permitted.
- C. Using acid or alkali cleaning agents is not permitted. Any cleaning chemicals must be approved prior to use.
- D. Wash adjacent woodwork and other non-masonry surfaces. Use detergent and soft brushes or cloths.
- E. Clean masonry debris from surrounding building structures, such as roof and gutters; remove debris from inside of gutters and downspouts. Rinse off roof and flush gutters and downspouts.
- F. Sweep and rake adjacent pavement and grounds to remove masonry debris. Where necessary, pressure wash surfaces to remove mortar, dust, dirt and stains.

END OF SECTION

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ASPHALT SHINGLES

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PART 1 GENERAL SECTION

- A. Asphalt roofing shingles.
- B. Leak barrier and deck protection.
- C. Metal flashing associated with shingle roofing.
- D. Attic Ventilation.

1.02 SUBMITTALS

- A. Submit copies of manufacturer's product data sheets, detail drawings and samples for each type of roofing product.

1.03 QUALITY ASSURANCE

- A. **Manufacturer Qualifications:** Provide all primary roofing products, including shingles, underlayment, self-adhering leak barrier, starter strips, ridge cap shingles and ventilation by a single manufacturer in order to obtain the specified warranty.
- B. **Installer Qualifications:** Installer must be approved by the manufacturer at the proper level for installation of all roofing products that are to be installed under this section in order to obtain the specified warranty. For the GAF-Elk roofing system the installer must have GAF Master Elite status. For other roofing systems the installer must have an equivalent qualification.
- C. **Manufacturer Inspection:** Provide for a manufacturer's factory representative to inspect the installation of the shingles and core accessory products in compliance with the manufacturer's warranty as in conformance with GAF Golden Pledge warranty or pre-approved equal.

1.04 REGULATORY REQUIREMENTS

- A. Provide a roofing system achieving an Underwriters Laboratories (UL) Class A fire classification.
- C. Install all roofing products in accordance with all federal, state and local building codes.
- D. All work shall be performed in a manner consistent with current OSHA guidelines.
- E. Obtain all necessary building permits.

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- F. The contractor shall be responsible for meeting all the requirements of the Madison General Ordinance, Chapter 10, Section 10.185, Recycling and Reuse of Construction and Demolition Debris, for commercial buildings.

1.05 PRE-CONSTRUCTION MEETING

- A. A pre-construction meeting shall take place prior to the start of the roofing installation. The contractor and any subcontractors will be required to attend.
- B. Attendees: Meeting's mandatory attendees shall include the certified contractor and the manufacturer's representative. Non-mandatory attendees shall include the owner's representative, architect or engineer's representative, and the general contractor's representative.
- C. Topics: Certified contractor and manufacturer's representative shall review all pertinent requirements for the project, including but not limited to, site product storage, scheduling, weather considerations, project duration, and requirements for the specified warranty.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store all products in manufacturer's unopened, labeled packaging until they are ready for installation.
- B. Store products in a covered, ventilated area, at temperature not more than 110 degrees F (43 degrees C); do not store near steam pipes, radiators, or in direct sunlight.
- C. Store bundles on a flat surface. Maximum stacking height shall not exceed manufacturer's recommendations. Store all rolls on end.
- D. Store and dispose of solvent-based materials in accordance with all federal, state and local regulations.

1.07 WEATHER CONDITIONS

- A. Proceed with work only when existing and forecasted weather conditions will permit work to be performed in accordance with the manufacturer's recommendations

1.08 WARRANTY, MINIMUM REQUIREMENTS

- A. Provide a manufacturer's forty (40) year written warranty to the City of Madison that includes a minimum of twenty (20) years non-prorated protection, where the manufacturer is responsible for the contractor's workmanship for 25 years and the contractor is required to be certified by the manufacturer. For the GAF roofing system this certification would be the Master Elite status. Other pre-approved roofing systems would require an equivalent certification. This warranty shall include the cost of labor to remove, dispose and replace part or all of the defective shingled roofing system that affects performance, including replacement of any or all manufacturer products and component due to material defect or workmanship by the contractor. This coverage includes a minimum of six (6) manufacturer products that composes the complete roofing system required to achieve the specified manufacturer warranty system. This includes shingles, underlayment, self-adhering leak

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barrier, starter strips, ridge cap shingles and ventilation. The Contractor shall provide and install all additional products, materials not specifically mentioned as required by the manufacturer's recommendation and/or system guarantee instructions, to obtain complete guarantee coverage for the project as required by this specification. The Contractor shall acquire current proof of manufacturer certification for the products to be installed on the project and submit such dated certification status to the City along with the product submittal package. The roofing system shall be installed such as to obtain the maximum wind speed rating of 130 mph.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer: GAF Materials Corporation, or equivalent manufacture that is able to meet or exceeds all requirements of warranty and installation materials. CertainTeed is considered a preapproved equal for the purpose of this bid provided all submittals are approved.

2.02 SHINGLES

- A. Heavyweight, granule surfaced, self sealing asphalt shingle with a strong fiberglass reinforced Micro Weave® core and StainGuard® protection, which prevents pronounced discoloration from blue-green algae through formulation/unique blends of granules. Architectural laminate styling provides a wood shake appearance with a 5 5/8" exposure. Features GAF patented High Definition® color blends and enhanced shadow effect. . UL 790 Class A rated with UL 997 Wind Resistance Label; ASTM D 7158, Class H; ASTM D 3161, Type 1; ASTM D 3018, Type 1; ASTM D 3462; CSA 123.5-98; Dade County Approved, Florida Building Code Approved, Texas Dept of Insurance Approved, ICC Report Approval. Timberline® Ultra® High Definition Shingles, by GAF or pre-approved equal.
 - 1. Color: As selected from manufacturer's full range.

2.03 HIP AND RIDGE SHINGLES

- A. High profile self-sealing hip and ridge cap shingle matching the color of selected roof shingle. Each bundle covers approx. 20 lineal feet. Timbertex® Premium Ridge Cap Shingles, by GAF or pre-approved equal.

2.04 STARTER STRIP

- A. Self-sealing starter shingle designed for all roof shingles. Each bundle covers approx. 60/120 lineal feet (18288/36576 mm). ProStart™ Starter Strip by GAF or pre-approved equal.

2.05 LEAK BARRIER

- A. Self-adhering, self-sealing, bituminous leak barrier surfaced with fine, skid-resistant granules. Each Roll contains approx. 150 sq ft, 65 lbs (29.9 kg); 36" X 50' or 200 sq ft, 85 lbs (38.6 kg), 36" X 66.7'. 58 mils thick. WeatherWatch®, by GAF or pre-approved equal.

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2.06 SHINGLE UNDERLAYMENT

- A. Premium, water repellent, breather type non-asphaltic underlayment. UV stabilized polypropylene construction. Meets or exceeds ASTM D226 and D4869. Approved by Dade County, Florida Building Code, and has a pending ICC Report Approval. Deck-Armor™ Premium Breathable Roof Deck Protection, by GAF or pre-approved equal.

2.07 ROOFING SEALANT

- A. General-purpose asphalt roofing cement meeting the requirements of ASTM D 4586, Type I or II. Matrix Standard Plastic Roof Cement #203, by BMCA or pre-approved equal
- B. General-purpose asphalt roofing cement meeting the requirements of ASTM D 4586, Type I or II. Matrix Standard Wet/Dry Roof Cement #204, by BMCA or pre-approved equal
- C. Asphalt Plastic Roofing Cement meeting the requirements of ASTM D 4586, Type I or II.

2.08 ATTIC VENTILATION

- A. Roof ventilation shall be achieved utilizing passive ventilation products. Exhaust ventilation shall be achieved by using Cobra® Snow Country™ ridge vent providing 18.0 sq inches Net Free Ventilation Area per lineal foot. Cobra® Snow Country™ ridge vent shall be installed at all ridge tops as indicated on the plans.

2.09 NAILS

- A. Standard round wire, zinc-coated steel or aluminum; 10 to 12 gauge, barbed or deformed shank, with heads 3/8 inch (9.5 mm) to 7/16 inch (11 mm) in diameter. Length must be sufficient to penetrate into solid wood at least 3/4 inch (19 mm) or through plywood or oriented strand board by at least 1/8 inch.

2.10 METAL FLASHING, SOFFIT, FASCIA AND EAVE/RAKE EDGE FLASHING 1

- A. Metal flashing, fascia, soffit, "F" or "J" trim and eave edge flashing shall be installed per manufactures instructions.
- B. Soffit panels shall be fully vented 0.32" aluminum PAC-CLAD 750 or equivalent.
- C. All edge flashing, drip edge, fascia, trim shall be a minimum 24 gauge galvanized sheet metal prefinished with Kynar and brake formed to provide details as shown on the plans. Furnish in 8' or 10' lengths. Color: color to be determined from manufacture full range of colors, and may be field or shop fabricated.

2.11 METAL GUTTER AND DOWNSPOUTS

- A. All of the existing metal gutters and downspouts shall be removed and replaced with new gutters and downspouts as indicated on plans. Downspouts shall closed type with a cross sectional area of 3"X4". Downspouts may be the standard .020 aluminum prefabricated type

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with cleanouts per locations as shown on the drawings. Gutters shall be 6 inch Type K seamless over the full eave distance.

- B. 24 gauge hot-dip galvanized steel sheet with full strength Kynar paint finish, complying with ASTM A 653/A 653M, G90/Z275. Color: to be selected from manufacturer standard color range. The contractor has the option to use .032 aluminum with Kynar finish for the gutter material.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation until the roof deck has been properly prepared.
- B. If roof deck preparation is the responsibility of another installer, notify the project manager of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Verify that the deck is dry, sound, clean and smooth. It shall be free of any depressions, waves, and projections. Cover with sheet metal, all holes over 1 inch (25 mm) in diameter, cracks over 1/2 inch (12 mm) in width, loose knots and excessively resinous areas.
- B. Clean deck surfaces thoroughly prior to installation of eaves protection membrane and underlayment.

3.03 INSTALLATION OF UNDERLAYMENTS

A. General:

- 1. Install using methods recommended by manufacturer, in accordance with local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.

B. Eaves, Rakes and Ridge:

- 1. Install eaves and rake edge metal flashing tight with fascia boards; lap joints 2 inches (50 mm) and seal with plastic cement; nail at the top of the flange.
- 2. Manufacturer's workmanship coverage shall require eaves protection membrane (Leak Barrier) up the slope from eaves edge at least a full **69 inches** or to at least 24 inches (610 mm) beyond the interior "warm wall", whichever is greater. Lap ends 6 inches (150 mm) and bond. Install full 36" width leak barrier along rake edge. Install full 36" leak barrier up to ridge vent slot.

C. Valleys:

- 1. Not applicable.

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D. Roof Deck:

1. Install one layer of roof deck underlayment over the entire area not protected by eaves or valley membrane. Install sheets horizontally so water sheds and nail in place.
2. On roofs sloped at more than 4 in 12, lap horizontal edges at least 3 inches (76 mm) and at least 6" inches (152 mm) on end laps and offset from adjacent end laps by 3' (914mm). Along eave edges completely cover leak barrier protection and install on to the non corrosive metal edge.
3. On roofs sloped between 2 in 12 and 4 in 12, overlap a full 28.5" over the underlying course. Continue up the roof using 25.5" (648mm) exposure. Overlap 12" (305mm) at the end lap and offset the adjacent end lap by 6'. Standard application for low slope requires deck protection to have seams taped with butyl adhesive based tape or waterproof cloth duct tape.

E. Shingle Underlayment Application:

1. Shingle underlayment shall be installed over a clean, dry deck.
2. Install leak barrier at eaves, valleys, rakes, skylights, dormers and other vulnerable leak areas.
3. Lay shingle underlayment over deck and overlap 3" at side laps and 6" at end laps.
4. For exposure to rain or snow, overlap 12" at end laps.
5. For side and end laps: fasten shingle underlayment 12" o.c. (6" o.c. for high wind areas). Fasten Deck Armor or equivalent underlayment with plastic cap nails or staples with plastic caps in accordance with appropriate installation instructions.
6. For middle of the roll: fasten shingle underlayment 24" o.c. (12" o.c. for high wind areas).
7. For exposure to rain or snow, completely cover all side laps, end laps and fasteners with tape.
8. For long-term exposure see complete shingle underlayment installation instructions for side lap detail.
9. If roof may be exposed to high winds, apply tape over all fasteners at the center of the roll to prevent rain or snow from entering at the fasteners.
10. For slopes less than 2:12, a double application of shingle underlayment is required. See complete underlayment (Deck-Armor or equivalent) installation instructions for more information.

F. Penetrations:

1. Vent pipes: Install a 24 inch (610 mm) square piece of leak barrier protection membrane lapping over roof deck underlayment; seal tightly to pipe.
2. Vertical walls: Install leak barrier protection membrane extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
3. Skylights, curbs and roof hatches: Install eaves protection membrane from under the built-in counterflashing and 12 inches (305 mm) on to the roof surface lapping over roof deck underlayment.
4. Chimneys: Install eaves protection membrane around entire chimney extending at least 6 inches (150 mm) up the wall and 12 inches (305 mm) on to the roof surface. Lap the membrane over the roof deck underlayment.
5. Rake Edges: Install metal edge flashing over eaves protection membrane and roof deck underlayment; set tight to rake boards; lap joints at least 2 inches (50 mm) and seal with plastic cement; secure with nails. Provide maximum wind resistance as required

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elsewhere by installing manufacturers starter with factory adhesive run vertically up the full length of the rake edge. Position the starter so that it overlaps the eave edge starter at least 3"(76mm). Nail vertically along a line 1 ½" to 3" in from the rake edge.

3.04 INSTALLATION OF SHINGLES

A. General:

1. Install in accordance with manufacturer's instructions and local building codes. When local codes and application instructions are in conflict, the more stringent requirements shall take precedence.
2. Minimize breakage of shingles by avoiding dropping bundles on edge, by separating shingles carefully (not by "breaking" over ridge or bundles), and by taking extra precautions in temperatures below 40 degrees F (4 degrees C).
3. Handle carefully in hot weather to avoid scuffing the surfacing, or damaging the shingle edges.

B. Placement and Nailing:

1. Secure with 6 nails per shingle per manufacturer's instructions or local codes so as to meet manufacturer's requirements for 130 mph wind warranty. (Also see manufacturer's requirement to run starter with factory adhesive entire vertical length of rake edge.
2. Placement of nails varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.
3. Nails must be driven flush with the shingle surface. Do not overdrive or underdrive the nails.
4. Shingle offset varies based on the type of shingle specified. Consult the application instructions for the specified shingle for details.

C. Valleys

1. Not applicable.

D. Penetrations

1. All Penetrations are to be flashed according to manufacturers, ARMA and NRCA application instructions and construction details.

3.05 VENTILATION

A. General

1. Ventilation must meet or exceed current F.H.A., H.U.D. and local code requirements.

B. Roof Exhaust Vent:

1. Install accordance to manufactured recommendations.

3.06 PROTECTION

A. Protect installed products from foot traffic until completion of the project.

B. Any roof areas that are not completed by the end of the workday are to be protected from moisture and contaminants.

END OF SECTION

SECTION 07 53 23
ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)
SUMMIT MAINTENANCE FACILITY – SOUTH BUILDING

07 53 23 ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Name: City of Madison – Summit Maintenance Facility-Storage Building Improvement-South Building Roof Replacement
- B. EPDM membrane roofing system, including all components specified.
- C. Comply with the published recommendations and instructions of the roofing membrane manufacturer, at: Firestone, <http://manual.fsbp.com> or for Carlisle at: <http://www.carlisesyntec.com/>
- D. Commencement of work by Contractor shall constitute acknowledgement by Contractor that this specification can be satisfactorily executed, under the project conditions and with all necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of the Contract Sum will be made for failure to adequately examine the Contract Documents or the project conditions.
- E. Project requirements includes complete removal and disposal of existing roof system including membranes, flashings, insulations, fasteners, base tie-ins, metal flashings, etc. Exposed deck shall be inspected for damage, and reported to owner's representative prior to installing new system.

1.02 RELATED REQUIREMENTS

- A. Not Applicable.

1.03 DEFINITIONS

- A. LTTR: Long Term Thermal Resistance, as defined by ASTM C1289-13e-1.

1.04 REFERENCE STANDARDS

- A. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board; 2012.
- B. ASTM 1289-13e-1 - Standard Test Method Determination of L-Term Thermal Resistance Of Closed-Cell Thermal Insulating Foams; 2009.
- C. PS 1 - Structural Plywood; 2009.
- D. PS 20 - American Softwood Lumber Standard; 2005.
- E. SPRI ES-1 - Wind Design Standard for Edge Systems Used with Low Slope Roofing Systems; 2003. (ANSI/SPRI ES-1)

1.05 ADMINISTRATIVE REQUIREMENTS

- A. Pre-Construction Meeting: Before start of roofing work, The City shall hold a meeting where the Contractor shall discuss the proper installation of materials, review the shop drawing, submittals, manufacturer's standard details and requirements to achieve the stated warranty.
 - 1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work. This includes a representative from the roofing material manufacturer.
 - 2. The City Project Manager shall schedule the Pre-Construction Meeting.

1.06 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data:
 - 1. Provide membrane manufacturer's printed data sufficient to show that all components of roofing system, including insulation and fasteners, comply with the specified requirements

SECTION 07 5323
ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)
SUMMIT MAINTENANCE FACILITY – SOUTH BUILDING

and with the membrane manufacturer's requirements and recommendations for the system type specified; include data for each product used in conjunction with roofing membrane.

- C. Samples: Submit samples of each product to be used.
- D. Shop Drawings: Provide:
 - 1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, curbs, terminations, expansion joints, penetrations, curbing and drains.
 - 2. For tapered insulation, Not applicable.
- E. Installer Qualifications: Letter from manufacturer attesting that the roofing installer meets the specified qualifications.
- F. Pre-Installation Notice: Copy to show that manufacturer's required Pre Installation Notice (PIN) has been accepted and approved by the manufacturer.
- G. Executed Warranty.

1.07 QUALITY ASSURANCE

- A. Installer Qualifications: Roofing installer shall have the following:
 - 1. At least five years experience in installing specified system.

1.08 DELIVERY, STORAGE AND HANDLING

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
- B. Store materials clear of ground and moisture with weather protective covering.
- C. Keep combustible materials away from ignition sources.

1.09 WARRANTY

- A. Comply with Manufacturers Project Closeout Submittal procedure to satisfy any warranty requirements.
- B. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- C. Warranty: Firestone Limited Warranty covering membrane, roof insulation, and other indicated components of the system, for the term indicated.
 - 1. Limit of Liability: No dollar limitation.
 - 2. Scope of Coverage: Repair leaks in the roofing system caused by:
 - a. Ordinary wear and tear of the elements.
 - b. Manufacturing defect in Firestone brand materials.
 - c. Defective workmanship used to install these materials.
 - d. Damage due to winds up to 55 mph (88 km/h).
 - 3. Not Covered:
 - a. Damage due to winds in excess of 55 mph (88 km/h).
 - b. Damage due hurricanes or tornadoes.
 - c. Hail.
 - d. Intentional damage.
 - e. Unintentional damage due to normal rooftop inspections, maintenance, or service.
- D. Metal Roof Edging with Exposed Decorative Fascia: Provide standard 20 year or greater warranty for painted finish covering color fade, chalk, and film integrity, after Owner selects the color.

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PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturer - Roofing System: Firestone Building Products LLC, Carmel, IN:
www.firestonebpc.com.
 - 1. Roofing systems manufactured by others are acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
 - a. Specializing in manufacturing the roofing system to be provided.
 - b. Minimum ten years of experience manufacturing the roofing system to be provided.
 - c. Able to provide a no dollar limit, single source roof system warranty that is backed by corporate assets in excess of one billion dollars.
 - d. ISO 9002 certified.
 - e. Able to provide isocyanurate insulation that is produced in own facilities.
 - f. Roofing systems manufactured by the companies listed below are acceptable provided they are completely equivalent in materials and warranty conditions:
 - 1. Carlisle Syntec Systems, Carlisle, PA: <http://www.carlisesyntec.com/>
- B. Manufacturer of Insulation: Same manufacturer as roof membrane.
- C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
 - 1. Metal roof edging products by other manufacturers are not acceptable.
 - 2. Field- or shop-fabricated metal roof edgings are acceptable where application requires a custom fit.
 - 3. Factory fabricated products by other manufacturers are acceptable provided they are completely equivalent in materials and performance and do not affect warranty.

2.02 ROOFING SYSTEM DESCRIPTION

- A. Roofing System: Ethylene-propylene-diene-monomer (EPDM) single-ply membrane.
 - 1. Membrane Attachment: Fully adhered.
 - 2. Warranty: Full system warranty; Firestone 30 year Platinum Limited Warranty covering membrane, roof insulation, and membrane accessories.
 - 3. Comply with applicable local building code requirements.
- B. Roofing System Components: Listed in order from the top of the roof down:
 - 1. Membrane: 90 mil black EPDM Membrane
 - 2. Base Sheet Over Insulation: Not applicable.
 - 3. Insulation:
 - a. Maximum Board Thickness: 1 inch (25 mm); only one layer is required for this project.
 - b. Tapered: Not Applicable.
 - c. Layering: Polyisocyanurate foam board, non-composite; mechanically fastened. Insulation shall be applied and fasten in a manner that it contours with the curvature of the roof. Total thickness shall be 1 inch.
 - c. Top Layer:-Not Applicable, single layer of Polyisocyanurate to be mechanically fastened.
 - d. Intermediate Layer(s)-Not Applicable, single layer of Polyisocyanurate to be mechanically fastened.
 - e. Bottom Layer: Not Applicable, single layer of Polyisocyanurate to be mechanically fastened.
 - f. Crickets: Not Applicable

2.03 EPDM MEMBRANE MATERIALS

- A. Roofing and Flashing Membrane: Black, cured synthetic single-ply membrane composed of ethylene propylene diene terpolymer (EPDM) with the following properties:
 - 1. Thickness: 0.090 inch (1.5 mm).

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2. Nominal Thickness Tolerance: Plus/minus 10 percent.
 3. Sheet Width: Provide the widest available sheets to minimize field seaming.
 4. Acceptable Product: RubberGard Platinum EPDM Membrane by Firestone
- B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Flashing Membrane: Self-curing, non-reinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D 4811 Type II, and with the following properties:
1. Thickness: 0.055 inch (1.4 mm).
 2. Acceptable Product: RubberGard EPDM FormFlash by Firestone.
- D. Self-Adhesive Flashing Membrane: Semi-cured 45 mil EPDM membrane laminated to 35 mil (0.9 mm) EPDM tape adhesive; QuickSeam Flashing by Firestone.
- E. Pre-Molded Pipe Flashings: EPDM, molded for quick adaptation to different sized pipes; Firestone EPDM Pipe Flashing.
- F. Self-Adhesive Lap Splice Tape: 35 mil (0.9 mm) EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer; QuickSeam Splice Tape by Firestone.
- G. Splice Adhesive: Synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces; SA-1065 Splice Adhesive by Firestone.
- H. Bonding Adhesive: Neoprene-based, formulated for compatibility with EPDM membrane and wide variety of substrate materials, including masonry, wood, and insulation facings; Bonding Adhesive BA-2004 by Firestone.
- I. Adhesive Primer: Synthetic rubber based primer formulated for compatibility with EPDM membrane and tape adhesive, with VOC content less than 2.1 lb/gal (250 g/L); QuickPrime Plus LVOC by Firestone.
- J. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of membrane at seams; Lap Sealant HS by Firestone.
- K. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Pourable Sealer by Firestone.
- L. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed; Water Block Seal by Firestone.
- M. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating; corrosion-resistance meeting FM 4470 criteria.
- N. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches (33 mm) wide by 0.10 inch (2.5 mm) thick; Firestone Termination Bar by Firestone.

2.04 ROOF INSULATION

- A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with black glass reinforced mat laminated to faces, complying with ASTM C1289 Type II Class 1, with the following additional characteristics:
1. Thickness: As indicated elsewhere.
 2. Size: 48 inches (1220 mm) by 96 inches (2440 mm), nominal.
 - a. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches (1220 mm) by 48 inches (1220 mm), nominal.
 3. Compressive Strength: 20 psi (138 kPa) when tested in accordance with ASTM C1289.
 4. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
 5. Recycled Content: 19 percent post-consumer and 15 percent post-industrial, average.
 6. Acceptable Product: ISO 95+ GL Polyisocyanurate Insulation by Firestone.

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- B. Insulation Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.

2.05 METAL ACCESSORIES

- A. Metal Roof Edging and Fascia: Continuous metal edge member serving as termination of roof membrane and retainer for metal fascia; watertight with no exposed fasteners; mounted to roof edge nailer.
1. Wind Performance:
 - a. Membrane Pull-Off Resistance: 100 lbs/ft (1460 N/m), minimum, when tested in accordance with ANSI/SPRI ES-1 Test Method RE-1, current edition.
 - b. Fascia Pull-Off Resistance: At least the minimum required when tested in accordance with ANSI/SPRI ES-1 Test Method RE-2, current edition.
 - c. Provide product listed in current Factory Mutual Research Corporation Approval Guide with at least FM 1-270 rating.
 2. Description: Roof drip edge may be shop fabricated to meet manufactures requirements for stated warranty. Material shall be 24 gauge steel with PVDF finish.
 3. Estimated Fascia Face Height: 4" inches
 4. Edge Member Height Above Nailers: 0 inches (0 mm).
 5. Fascia, Gutters and Downspout Material and Finish: 24 gauge steel with PVDF Finish Color selected from standard factory colors (non premium) with installed protective plastic film. The contractor has the option to fabricate the gutters from .032 aluminum with the PVDF finish. Downspouts may be the standard .020 aluminum prefabricated type with cleanouts per locations as shown on the drawings.
 6. Length: 144 inches (3650 mm).
 7. Functional Characteristics: Fascia retainer supports while allowing for free thermal cycling of fascia.
 8. Aluminum Bar: Not Applicable.
 9. Anchor Bar Cleat: 20 gage, 0.036 inch (0.9 mm) G90 coated commercial type galvanized steel with pre-punched holes.
 10. Curved Applications: Factory modified or field fit to match curvature at gable ends.
 11. Fasteners: Factory-provided corrosion resistant fasteners, with drivers; no exposed fasteners permitted.
 12. Special Shaped Components: Provide factory-fabricated pieces necessary for complete installation, including miters, scuppers, and end caps; minimum 14 inch (355 mm) long legs on corner pieces.
 13. Scuppers: Not applicable.
 14. Accessories: Provide matching brick wall cap, downspout, extenders, and other special fabrications as shown on the drawings.

2.06 ACCESSORY MATERIALS

- A. Wood Nailers: PS 20 dimension lumber, Structural Grade No. 2 or better Southern Pine, Douglas Fir; or PS 1, APA Exterior Grade plywood; pressure preservative treated.
1. Width: 6 inches (152 mm), nominal minimum, or as wide as the nailing flange of the roof accessory to be attached to it. Nailers to be installed in two ½" thicknesses of plywood with structural metal flashing to accept metal rivet fasteners as shown in drawing.
 2. Thickness: Same as thickness of roof insulation.

PART 3 INSTALLATION

3.01 GENERAL

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where

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manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.

- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.
- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F (15 to 25 degrees C).
- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
 - 1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
 - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
 - 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

3.02 EXAMINATION

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.
- E. Perform pull out test for fasteners attached to existing metal deck. Report any unacceptable conditions.
- F. Cut or trim existing metal deck to proper roof details as shown in drawing or submittals.

3.03 PREPARATION

- A. Removal of the existing roof system will not be required. The new roofing system shall be installed over the existing metal deck. Remove existing gutters and downspouts and any materials that may interfere with the installation.
 - 1. At penetrations, apply new roofing materials over flashings, including lead, asphalt, mastic, etc. The mastic around penetrations is suspected to contain asbestos. They are not intended to be disturbed during this installation. Contact the City Project Manager if this material is to be disturbed.

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- B. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.
- C. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.
- D. Fill all surface voids in the immediate substrate that are greater than 1/4 inch (6 mm) wide with fill material acceptable insulation to membrane manufacturer.
- E. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.
- F. Wood Nailers: Provide wood nailers at all perimeters and other locations where indicated on the drawings, of total height matching the total thickness of insulation being used.

3.04 INSULATION AND COVER BOARD INSTALLATION

- A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.
- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch (6 mm). Fill gaps greater than 1/4 inch (6 mm) with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch (6 mm).
- E. Mechanical Fastening: Using specified fasteners and insulation plates engage fasteners through insulation into deck to depth and in pattern required by membrane manufacturer.

3.05 SINGLE-PLY MEMBRANE INSTALLATION

- A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- D. Install membrane adhered to the substrate, with edge securement as specified.
- E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches (1:6) using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
 - 1. Exceptions: Round pipe penetrations less than 18 inches (460 mm) in diameter and square penetrations less than 4 inches (200 mm) square.
 - 2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

3.06 FLASHING AND ACCESSORIES INSTALLATION

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.
- B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
 - 1. Follow roofing manufacturer's instructions.
 - 2. Remove protective plastic surface film immediately before installation.

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3. Install water block sealant under the membrane anchorage leg.
 4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
 5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
 6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
 7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.
 8. The flashing and fascia at the gable ends will need to be sized in such a length to best fit the curvature of these gable ends.
- C. Existing Scuppers: Not Applicable.
D. Scuppers: Not Applicable.
E. Roofing Expansion Joints: Not Applicable.
F. Flashing at Walls, Curbs, and Other Vertical and Sloped Surfaces: Not Applicable
G. Roof Drains: Not Applicable.
H. Roof Hatch: Not Applicable.

3.07 FIELD QUALITY CONTROL

- A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- B. Perform all corrections necessary for issuance of warranty.

3.08 CLEANING

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

3.09 PROTECTION

- A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

END OF SECTION

1 SECTION 23 00 00 - HEATING, VENTILATING AND AIR CONDITIONING

2
3
4 PART 1 - GENERAL

5
6 1.01 DESCRIPTION

7
8 A. Work Included: Provide heating, ventilating, and air conditioning systems where shown on the
9 Drawings, as specified herein, and as needed for a complete and proper installation including,
10 but not necessarily limited to:

- 11
12 1. Exhaust systems including, inline fans, motors, dampers, controls and related items;
13 2. Air Inlets and Outlets;
14 3. Test, adjust, and balance air systems;
15 4. O&M manuals, warranty work and Owner instructions.

16
17 B. Related Work:

- 18
19 1. Documents affecting work of this Section include, but are not necessarily limited to,
20 General Conditions, Supplementary Conditions, and Sections in Division 1 of these
21 Specifications.
22 2. Equipment structural supports, etc.
23 3. Louvers provided by HVAC Contractor; installed by General Contractor.

24
25 C. Work of Other Sections:

- 26
27 1. Openings for ventilating work in walls, floors, roof, ceiling, etc., will be provided by
28 General Contractor. Location and size of these openings will be the responsibility of the
29 HVAC Contractor.
30 2. Lintels and structural supports for HVAC openings and equipment by the General
31 Contractor.
32 3. Electrical line voltage wiring (110 volts and greater). Wiring diagrams will be furnished to
33 Electrical Contractor by the HVAC Contractor.
34 4. Motor starters not provided integral with HVAC equipment shall be provided by the
35 Electrical Contractor.
36 5. Floor drains and open site drains by Plumbing Contractor.
37 6. Painting HVAC equipment will be the responsibility of General Contractor.
38 7. Roofing, exterior wall and related exterior opens shall be caulked, sealed and patched by
39 the General Contractor.
40

41 1.02 GENERAL PROVISIONS

42
43 A. Everything essential for the completion of the work implied to be covered by these Specifications
44 to make the system ready for normal and proper operation must be furnished and installed by this
45 Contractor. Accordingly, any omission from either the plans or the Specifications, or both, of
46 details necessary for the proper installation and operation of the system shall not relieve this
47 Contractor from furnishing such detail in full and proper manner.

48
49 B. The plans show various details indicating the general arrangement of the heating and ventilating
50 work, sizes and locations of pipe work, ducts, units, etc., the said plans with figures, lettering,
51 etc., shall be considered a part of these Specifications and no charge or alternation shall be
52 made in either case unless ordered by the Engineer.

53
54 C. In addition to the heating and ventilating plans, see General Plans of the building, as all heating
55 and ventilating work appearing on the latter plans will be part of this Contract unless especially
56 specified to be done by other contractors, as well as, the said work detailed on the heating and
57 ventilating plans.

58
59 1.03 QUALITY ASSURANCE

1 A. Qualifications of Installers:

- 2
- 3 1. For the actual fabrication, installation and testing of heating and ventilating work, use only
- 4 thoroughly trained and experienced workmen completely familiar with the items required
- 5 and manufacturer's current recommended methods of installation.
- 6 2. In acceptance or rejection of installed work, the Architect or Engineer shall make no
- 7 allowance for lack of skill on the part of the Workmen.

8

9 B. Reference Standards: The following standards are imposed, as applicable to work in each

10 instances:

11

12 AABC Associated Air Balance Council

13 ARI Air Conditioning and Refrigeration Institute

14 ASHRAE American Society of Heating, Refrigerating and Air Conditioning Engineers

15 ASME American Society of Mechanical Engineers

16 ASTM American Society of Testing and Materials

17 MCA Mechanical Contractors Association

18 MSS Manufacturers Standardized Society

19 NEC National Electric Code

20 NEMA National Electrical Manufacturers Association

21 NFPA National Fire Protection Association

22 SMACNA Sheet Metal and Air Conditioning Contractors National Association

23

24 C. Environmental design conditions for all occupied areas are as follows:

25

26 Inside:	70 deg. F	74 deg. F 50% RH
27 Outside:	-15 deg. F	91 deg. dbF/ 74 deg. wbF

28

29 **1.04 CODES AND PERMITS**

30

31 A. This Contractor must comply with building laws and other ordinances in force where the building

32 is located as far as same apply to his work.

- 33
- 34 1. IBC 2009.
- 35 2. IMC 2009; SPS 364.

36

37 B. He must secure permits from proper offices and pay legal fees as may be necessary for fulfilling

38 the requirements of these Specifications.

39

40 C. One (1) copy of all permits must be furnished to the Owner.

41

42 **1.05 COORDINATION**

43

44 A. Cooperate and coordinate with other trades to assure that all systems in the heating and

45 ventilating work may be installed in the best arrangement. Coordinate as required with all other

46 trades to share space in common areas and to provide the maximum of access to each system.

47

48 B. Arrange heating and ventilating work in neat, well organized manner with piping and similar

49 services running parallel with primary lines of building construction, and with minimum of 8 foot

50 overhead clearance where possible.

51

52 C. Locate operating and control equipment properly to provide easy access, and arrange entire

53 heating and ventilating work with adequate access for operation and maintenance.

54

55 D. Give right-of-way to piping which must slope for drainage.

56

57 **1.06 ELECTRICAL PROVISIONS OF HVAC WORK**

58

59 A. Line Voltage Wiring: The Electrical Contractor is to make all line voltage (100 volts and greater)

60 electrical wiring connections for hookup of the units and systems.

- 1
2 B. Control Wiring: Exposed low voltage (less than 100 volts) temperature control wiring in
3 connection with heating and ventilating system shall be in EMT conduit by the Heating Contractor
4 in strict accordance with the applicable sections of the Electrical Specifications. *Concealed*
5 *control wiring* may be routed to equipment without conduit, unless subject to physical damage.
6
7 C. This Contractor shall consult with the Electrical Contractor before ordering electrical motors, to
8 ascertain correct electrical current characteristics. HVAC Contractor shall furnish complete list
9 and location of equipment requiring electrical connections and necessary wiring diagrams to
10 Electrical Contractor.
11
12 D. Motors: Where not otherwise indicated, comply with applicable provisions of the National
13 Electrical Code, NEMA Standards, and sections of Division 16 of Specifications.
14
15 1. Phases and Current: 1/6 HP and smaller is Contractor's option; up to 1/3 HP, capacitor-
16 start, 120 volt, 60 cycle single-phase; 1/2 HP and larger, squirrel-cage induction NEMA
17 rated 200 volt, three-phase, 60 cycle. Provide two (2) separate windings on 2 speed
18 three-phase motors. Coordinate with actual current characteristics; refer to Division 16 of
19 Specifications.
20 2. High Efficiency Motors: All motors 1 HP and larger shall be high efficiency motors
21 meeting or exceeding values tested in accordance with IEEE Standards 112, Method B
22 procedures as stated in NEMA MG 1-12.53a.
23 3. Service Factor: 1.15 for three-phase; 1.35 for single-phase.
24 4. Construction: General purpose, continuous duty.
25 5. Frames: NEMA Standard for horsepower specified.
26 6. Overload Protection: Built-in thermal, with internal sensing device for stopping motor,
27 and for signaling where indicated.
28
29 E. Starter and Switches: Where motor starters and switches are indicated to be an integral part of
30 equipment furnished by Heating installer, they shall meet requirements of Division 16 and shall
31 be connected by the Electrical installer.
32
33 F. Wiring Connections: Wired connections in flexible conduit, except where plug-in electrical cords
34 are indicated and permitted by governing regulations.
35
36 G. General Wiring: Comply with applicable provisions of Division 16 Section.
37

38 1.07 PAINTING HVAC WORK

- 39
40 A. General: All field painting of mechanical equipment will be done by the General Contractor
41 unless equipment is specified otherwise or is to be furnished with factory-applied finish coats.
42
43 B. All equipment shall be provided with factory-applied prime finish, unless otherwise specified.
44
45 C. If the factory shop paint finish on any equipment furnished by the Contractor is damaged in
46 shipment or during construction of the building, the equipment shall be refinished by the
47 Contractor to the satisfaction of the Architect/Engineer.
48
49 D. Prime paint all field-fabricated metal work under HVAC work, comply with applicable provisions of
50 Division 9.
51

52 1.08 IDENTIFICATION

- 53
54 A. General: Provide adequate marking of the HVAC system and control equipment to allow
55 identification and coordination of maintenance activities and maintenance manuals. Tag and
56 label HVAC equipment located in exposed or accessible areas to conform to ANSI A13.1-1981.
57 After painting and/or covering is complete, identify all equipment, piping and ductwork by its
58 abbreviated generic name as shown/scheduled/specified.
59

- 1 B. Equipment: Identify all major HVAC equipment with plastic-laminate signs of 2" high painted
2 stencils and contrasting background. Provide test of sufficient clarity and lettering to convey
3 adequate information at each location and mount permanently. Identify control equipment by 1-
4 1/2" x 4" plastic laminate nameplates with 1/4" high lettering.
5
6 C. Piping and Ductwork: Identify all exposed and accessible piping and ductwork once every 30
7 feet at each branch, at termination of lines, and near valve or equipment connections. Place flow
8 directional arrows at each piping or duct identification. Provide appropriate sized letters to
9 convey information on wrap-around signage, adhesive-backed or paint stenciled labels.
10
11 1. Exposed includes all piping and ductwork above suspended ceiling systems.
12
13 D. Valves: Identify all valves with 1-1/2" diameter minimum polished brass stamp-engraved or
14 plastic laminate tags. Prefix or color-code tags for each generic piping service. Prepare and
15 submit valve tag schedule, service and tag description, incorporate in Instruction/O&M Manual.
16
17 E. Operational Labels: Where needed for proper or adequate information on operation and
18 maintenance of HVAC systems, provide labels or markers of plasticized or laminated card stock,
19 typewritten of appropriate size to convey the information.
20
21 F. Submit schedule of Identification labels for Architect/Engineer approval.
22

23 1.09 FLOOR, WALL, ROOF AND CEILING OPENINGS

- 24
25 A. The General Contractor will be required to leave openings in new ceiling, floors, walls, roof,
26 partitions, etc., as required to install the ventilating work specified or shown on the Drawings.
27 The HVAC Contractor is responsible for correct size and location of his openings. Where
28 penetrations through existing construction are required, they shall be the responsibility of the
29 HVAC Contractor.
30
31 B. The HVAC Contractor shall set sleeves and anchors for all equipment, etc., and shall provide
32 watertight seals on pipes through exterior walls, floors and roof and where noted on the
33 Drawings.
34
35 1. Pipe sleeves: Schedule 40 black steel pipe, 1" larger than the pipe;
36 2. Duct sleeves: 24 gauge galvanized sheetmetal, 1/2" larger than the duct on all
37 sides.
38
39 C. Pack annular space between sleeves and pipe or ducts with fiberglass insulation and seal.
40 Where penetrations through fire rated walls or floors, fill space with fire-resistive insulation similar
41 to US Gypsum Thermafiber batts or other approved fire-resistive insulation material and seal
42 annular openings with a UL approved, fire-stopping sealant/caulk.
43
44 D. Provisions for openings, holes and clearances through walls, floors, ceilings and partitions to be
45 made in advance of construction of such parts of the building.
46
47 E. If the HVAC Contractor should neglect to inform the General Contractor of his opening
48 requirements and that portion of the Building construction has been completed, the HVAC
49 Contractor shall pay the General Contractor for providing these openings.
50
51 F. Make arrangements with various other contractors for all special framing, spacing and chases.
52 Mason will leave chases in mason work, but HVAC Contractor is responsible for correct size and
53 location.
54

55 1.10 CUTTING AND PATCHING

- 56
57 A. General: Refer to Division 1 General Requirements.
58
59 B. Perform all cutting and patching required for complete installation of the HVAC systems, unless
60 specifically noted otherwise. Provide all materials required for patching unless otherwise noted.

1
2 1. All cutting and patching necessary of structural members to install any Electrical work
3 shall not be done without permission, and then only carefully done under the direction of
4 the Architect and General Contractor.
5

6 C. The Contractor shall not endanger any work of other trades by demolition, cutting, digging or
7 otherwise. Any cost caused by defective or ill-timed cutting and patching work shall be borne by
8 the contractor responsible. Each contractor requiring cutting and patching shall hire men skilled
9 in such cutting and patching to do the work.
10

11 1.11 CONCRETE FOR HVAC WORK

12

13 A. *General:* Comply with pertinent provisions of Division 1 and Division 3.

14 B. None anticipated for project.
15

16 1.12 EQUIPMENT ACCESS

17

18 A. *General:* All valves, volume dampers, equipment and accessories shall be installed to permit
19 access to equipment for maintenance, servicing or repairs. Relocation of piping, ducts or
20 equipment to accomplish equipment access shall be completed by this Contractor at no
21 additional cost.
22

23 B. *Location:* Provide access doors where equipment is located in chases or inaccessible locations.
24 Access panels shall be furnished by this Contractor and installed by the specific trade
25 responsible for the material in which the access panels are installed.
26

27 C. *Construction:* Access doors in fire-rated construction must have UL label. Access doors shall
28 be of size to provide adequate access to equipment concealed in wall, ceiling and or furred-in
29 spaces. Milcor or approved equal; 14 gauge steel frame and door, prime-coated, except
30 stainless steel in areas subject to excessive moisture.
31

32 1.13 EQUIPMENT SUPPORTS

33

34 A. *General:* Provide all supporting steel and related materials not indicated on structural drawings
35 as required for the installation of equipment and materials, including angles, channels, beams
36 and hangers.
37

38 1. Prime coat paint all supports.

39 2. Turn over equipment curbs to the General Contractor for installation; structural steel
40 supports under equipment curbs by the General Contractor.
41

42 1.14 EQUIPMENT GUARDS

43

44 A. *General:* Provide equipment guard over belt-driven assemblies, pump shafts, exposed fans and
45 elsewhere, as indicated in this specification or required by code.
46

47 1. Prime coat paint all supports.
48
49

50 1.15 GUARANTEE

51

52 A. All material and workmanship must be new and first class in every respect; the heating,
53 ventilating and air conditioning equipment must be turned over to the owner in complete working
54 order and free from mechanical defects.
55

56 B. The HVAC Contractor must guarantee all labor and materials for one (1) year from the
57 substantial completion and acceptance of the HVAC system and keep or place same in repair for
58 said period, unless such defects are clearly the result of bad management after HVAC system
59 was turned over to the Owner.
60

- 1 C. The system must be guaranteed to operate noiselessly and to the satisfaction of the Owner and
2 to supply and exhaust quantities of air shown on the Drawings.
3
4 D. Before final acceptance of this work, the Contractor shall have the entire apparatus and system in
5 complete and satisfactory operation and shall maintain same in satisfactory and continuous
6 operation for a period of ten days prior to the date of acceptance; fuel to be furnished by the
7 Owner.
8
9 E. The HVAC Contractor shall submit to the Engineer in triplicate, at the completion of his work, a
10 certified statement, signed by a principal of the firm, stating that the system has been fully
11 installed and is operating within the intent of the plans and specifications and that all system
12 components have been tested and adjusted. This statement shall be submitted before the
13 system is presented to the Owner for final inspection.
14

15 **1.16 SUBMITTALS**

- 16
17 A. Refer to Division 1 for additional submittal requirements.
18
19 B. The HVAC Contractor will be held responsible for correction of work deemed necessary by the
20 Engineer due to proceeding with the work without shop drawings that have the Engineer's final
21 approval.
22
23 C. Shop drawings shall include data on physical dimensions, gauges, materials of construction and
24 capacities.
25
26 D. This Contractor will be responsible for all figures and dimensions shown on the shop drawings.
27 Approval of shop drawings describing equipment that cannot fit in the space allotted does not
28 relieve this Contractor from providing equipment that will meet the space requirements.
29
30 E. Submit six (6) copies of shop drawings to the Architect/Engineer for approval, with
31 complete detail for all equipment, materials, etc., to be furnished and installed for this project as
32 follows:
33
34 1. Exhaust fans and accessories;
35 2. TAB air balance report;
36 3. Instructions and O&M manuals (2 copies);
37 4. As-built drawings.
38
39 F. Marked-up drawings indicated record installation as-built HVAC work.
40

41 **1.17 HOUSEKEEPING AND CLEANUP**

- 42
43 A. Periodically as work progress and/or as directed by the Architect, the Contractor shall remove
44 waste materials from the building and leave the area of the work room clean. Upon completion of
45 work remove all tools, scaffolding, broken and waste materials, etc., from the site.
46

47 **1.18 LUBRICATION**

- 48
49 A. Upon completion of the work and before turning over to the Owner, clean and lubricate all
50 bearings except sealed and permanently lubricated bearings. Use only lubricant recommended
51 by the manufacturer.
52

53 **1.19 INSTRUCTIONS AND MANUALS**

- 54
55 A. Upon completion of the installation, but before final acceptance of the system, this Contractor
56 shall instruct the Owner on the care and operation of all parts of the system.
57
58 B. Assemble two (2) complete sets of manufacturer's printed operating and maintenance
59 instructions for all HVAC equipment and installed under this contract. Prepare in bound copies

1 complete with index tabs. Information must include parts lists, equipment warranties, and wiring
2 diagrams. Submit bound copies to the Architect for distribution.
3

4 1.20 AS-BUILT DRAWINGS

- 5
6 A. During construction maintain a set of prints showing installed as-built work for the project.
7
8 B. Upon completion of construction before final acceptance, provide a set of as-built drawings to the
9 Architect/Engineer.
10

11 PART 2 - PRODUCTS

12 2.01 DUCTWORK

- 13
14
15
16 A. Sheet Metal: Furnish, install, fit and secure in place all supply, return, exhaust and vent air ducts,
17 risers, branches, etc., as shown and detailed on plans, built of galvanized iron as hereinafter
18 specified.
19

- 20 1. Above ground, general ductwork: Galvanized steel, lock-forming quality, ASTM A527;
21 1.25 oz. zinc coating each side, mill phosphatized, ASTM A525.
22 2. Steel Ducts: Galvanized steel, lock-forming quality, ASTM A527; 1.25 oz. zinc coating
23 each side, mill phosphatized, ASTM A525.
24

25 B. Ductwork Construction:

- 26 1. Sheet metal work shall be constructed according to practices recommended in the HVAC
27 Duct Construction Standards - Metal and Flexible 1st ED. 1985, as published by
28 SMACNA, and hereinafter specified.
29 2. Ductwork Pressure-Velocity Classification: + 2" static pressure class 2,500 FPM velocity
30 level.
31 3. Duct Sealing Requirements: Seal Class B. Transverse and longitudinal joints.
32 4. All duct dimensions noted on the drawings are finished inside dimensions.
33 5. Install ducts, risers, etc., as indicated on plans, making necessary changes in cross
34 section, offsets, etc., whether or not same is specifically indicated. If ducts cannot be run
35 as shown on drawings, install ducts between required points, subject to the approval of
36 Engineer without additional cost to the Owner.
37 6. At all outlets and inlets in rooms, flange ducts for attachment of grilles. Install grilles
38 according to manufacturer's recommendations.
39 7. Sheet metal work throughout shall be assembled and erected in such a manner that no
40 vibration will occur and no noise be transmitted by the moving air due to inappropriate
41 fitting or offsets. *All corrective measures will be determined by the Engineer at the HVAC*
42 *Contractor's expense.*
43 8. All duct turns shall have either an inside radius equal to the duct width or be a miter turn
44 with turning vanes. Turning vanes shall be double wall air-foil type.
45 9. Branch Take-Off Fittings: Round branch take-off fittings shall be low-loss type fittings
46 such as bellmouth or conical type; *no scoops or 90 degree tee fittings allowed.*
47 Square/rectangular branch take-off fittings shall have 45 degree leading edge with 4 inch
48 minimum depth; *no air turns or scoops allowed.*
49

50 C. Ductwork Accessories:

- 51
52 1. Volume Dampers: Furnish and install in branches of supply air and exhaust ducts.
53 Substantial volume dampers to be fitted with locking devices for adjusting the air delivery.
54 Damper blades shall not exceed 6" width.
55 2. Access Panels: Install access panels with latches and gaskets in ducts at automatic
56 dampers, coils, fire dampers, louver plenums and other duct mounted equipment.
57 Panels in insulated ducts must be internally insulated.
58 3. Openings around Ducts: Through walls must be filled with fiber-glass, caulked and
59 sealed with 14 gauge galvanized sheet metal angle around duct on each side of wall.
60

1 **2.02 VIBATION ISOLATION**

2
3 A. General:

- 4
- 5 1. Isolate all motor driven mechanical, unless otherwise noted, from the building structure
- 6 and from the systems which they serve, to prevent equipment vibrations from being
- 7 transmitted to the structure.
- 8 2. Consider equipment weight distribution to provide uniform deflections.
- 9 3. For equipment with variable speed capability, select vibration isolation devices based on
- 10 the lowest speed.

11
12 B. Manufacturers: Products and methods of fabrication shall be as manufactured by Mason

13 Industries, Korfund Co., Amber/Booth Co., Vibration Mounting and Controls, or Kinetics, similar to

14 the manufacturers model listed.

15
16 C. Performance:

- 17
- 18 1. Select all vibration isolation devices to provide minimum 95% isolation efficiency or
- 19 based on the minimum static deflection and mounting criteria listed below, whichever is
- 20 greater.

21 2. Vibration Isolation Schedule:

<u>Type of</u>	<u>Isolation</u>	<u>Minimum Static</u>
<u>Equipment</u>	<u>Type</u>	<u>Deflection - Inches</u>
23 Inline Exhaust Fans	24 Type 'X' Flexible Duct Connector &	3/4"
	25 Type 'D' Hanger	3/4"

26 D. Type D Hangers:

- 27
- 28 1. Mason type 30N, vibration hangers with a steel spring and 0.3" deflection neoprene
- 29 element in series. The neoprene element shall be molded with a rod isolation bushing
- 30 that passes through the hanger box. Spring diameters and hanger box lower hole sizes
- 31 shall be large enough to permit the hanger rod to swing thru a 30 degrees arc before
- 32 contacting the hole and short circuiting the spring.
- 33 2. Springs shall have a minimum additional travel to solid equal to 50% of the rated
- 34 deflection

35
36 E. Type X Flexible Duct Connectors:

- 37
- 38 1. Laminated flexible sheet of cotton duct and sheet elastomeric (neoprene or vinyl),
- 39 reinforced with steel wire mesh where required for strength to withstand duct pressure
- 40 indicated.
- 41 2. Form connectors with full-faced flanges and accordion bellows to perform as flexible
- 42 isolation units.
- 43 3. Provide galvanized steel retaining rings for airtight connections with ductwork.

44
45 **2.03 LOUVERS**

46
47 A. Extruded aluminum louver, 4" deep, 40 deg. J-blades mounted, 3" O.C. with rain hooks.

48 Stainless steel screws.

- 49
- 50 1. Frame: Aluminum extrusions 0.081" 6063-TS
- 51 2. Blades: Z-shaped extruded aluminum 6063-TS.
- 52 3. Bird Screens: 1/2" mesh PVC crated.
- 53 4. Insect Screens where scheduled - aluminum.
- 54 5. Finish: Powder-coat baked-on enamel finish, finish color selection by Architect.

55
56 **2.04 FANS**

57
58 A. General: Furnish fans in the size and capacity as shown on the drawings. Shall be

59 manufactured by Broan, Carnes, Greenheck, ILG, Penn or approved equal.

60

1 B. Inline Fan: Furnish duct mounted centrifugal, direct-driven or belt-driven inline fan. Fan shall be
2 constructed of heavy gauge steel with acrylic enamel finish over iron phosphate primer. Motor or
3 drive compartment shall be isolated from the airstream and be externally ventilated. Bearings
4 shall be prelubricated and sealed for 200,000 hours operation. Fan wheel shall be aluminum,
5 backward inclined, centrifugal type, dynamically and statically balanced with venturi inlet. One
6 side of the housing shall be equipped with a hingeable service door assembly supporting the
7 motor, drives, wheel and inlet venturi for servicing without disconnecting the fan connections.
8 Fan shall be AMCA certified for air and sound performance.

9
10 1. Accessories (as indicated on plans and schedules).

11
12 C. Ceiling Mounted: Furnish ceiling-mounted exhaust fans complete with centrifugal blower, inlet
13 grille, gravity back-draft damper, and discharge duct connection as shown on the drawings. Fan
14 shall be AMCA certified with a sound rating of less than 4.5 sones. Housing shall be insulated
15 with minimum 1/2" acoustic insulation.

16
17 1. Accessories (as indicated on plans and schedules).

18
19 D. Motors: 1 HP and larger shall be suitable for 240/60/1 1-phase operation and less than 1 HP
20 shall be 115/60/1 with integral thermal overload. Horsepower rating shall be such that motor will
21 not be overloaded at rated capacity. Motors in air stream shall be totally enclosed, other shall be
22 open type. Motors shall have permanently lubricated ball bearings, mounted on neoprene
23 vibration-isolator supports. All units shall have remote disconnect switch.

24
25 1. ECM motor with local speed control, where scheduled.

26
27 \

28 PART 3 - EXECUTION

29 3.01 JOB CONDITIONS

30
31 A. Examine and check conditions at the actual job site and determine facilities for delivery, storing
32 and handling of materials and equipment.

33
34 B. Drawings show approximate locations of equipment, verify exact locations.

35
36 C. Cooperate as necessary with other trades in order that all systems in the work may be installed in
37 the best arrangement. Coordinate as required with all other trades to share space in common
38 areas and to provide the maximum of access to each system.

39 3.02 DUCTWORK INSTALLATION

40
41 A. Ducts shall be constructed, supported and installed in accordance with the latest low pressure
42 duct standards of SMACNA. Install all turning vanes, access doors, extractors, and accessories
43 as indicated or specified herein.

44
45 B. Fabricate and install all ductwork to be air tight in accordance with SMACNA Class B, seal.
46 Evident air leaks in the ductwork shall be sealed.

47
48 C. Seal exposed outside ductwork joints water tight with mastic sealant.

49
50 D. Install all motor operated dampers per manufacturer's instructions in accordance with control
51 sequence intended.

52 3.03 INSTALLATION OF EQUIPMENT

53
54 A. Locations: Install all equipment in the locations shown on the Drawings, except where
55 specifically otherwise approved on the job by the Owner.

1 B. All equipment, as called for on the drawings and herein specified, shall be installed in strict
2 accordance with manufacturer's recommendations.

3 C. Interferences: Avoid interference with structure, and with work of other trades, preserving
4 adequate
5 headroom and clearing all doors and passageways.

6
7 D. Inspection: Check each piece of equipment in the system for defects, verifying that all parts are
8 properly furnished and installed, that all items function properly, and that all adjustments have
9 been made.

10
11 **3.04 TESTING, ADJUSTING, AND BALANCING**

12
13 A. Provide all necessary personnel, equipment, and services and perform all tests necessary to
14 demonstrate the integrity of the completed installation to the approval of the Owner and Architect.
15 The air system shall be tested, adjusted and balanced in accordance with the latest edition of the
16 Associated Air Balance Council (AABC) Procedural Standards, NEBB or equivalent by an
17 independent TAB Contractor. TAB work performed by the HVAC Contractor shall not be
18 accepted.

19
20 B. Submit three (3) certified copies of the final report to Architect on applicable AABC reporting
21 forms or equivalent for approval.

- 22
23 1. Air volume at supply, return and exhaust inlets and outlets;
24 2. Air volume at each fan/air handler unit for supply air, return/exhaust air and fresh air;
25 3. Static pressure drops at filter assemblies, DX coils, mixing boxes, supply and
26 return/exhaust plenum-ducts;
27 4. Record fan speed, RPM, motor nameplates and amperage/voltage;
28 5. Measure and record supply air, return/exhaust air, fresh air and mixed air temperatures.
29 Record entering and leaving temperatures (dry bulb and wet bulb) at all coils and heating
30 apparatus;
31 6. Report all equipment model #'s and related drawing identification on the TAB report;

32
33 C. Upon completion of TAB work, mark equipment settings, including damper control levers, and
34 similar devices to indicate final settings. Plug all holes in insulation, ductwork and housings with
35 acceptable test plugs.

36
37 D. Eliminate noise and vibration and assure proper function of all controls, maintenance of
38 temperature, and operation with the approved design.

39
40 **3.05 CLEANING**

41
42 A. Ductwork: After the ductwork has been tested and proved tight, thoroughly vacuum and clean all
43 components of the ductwork. Remove all dirt, scale, oil and other foreign substances which may
44 have accumulated during the installation process.

45
46 B. Equipment: After the equipment has been started and proved operational, carefully clean all
47 accessible parts of each piece of equipment, thoroughly removing all traces of dirt, oil, grease
48 and other foreign substances.

49
50 **3.06 LUBRICATION**

51
52 A. Upon completion of the work and before turning over to the Owner, clean and lubricate all
53 bearings except sealed and permanently lubricated bearings. Use only lubricant recommended
54 by the manufacturer.

55
56 B. Contractor is responsible for maintaining lubrication of all mechanical equipment under his
57 contract until work is accepted by the Owner.
58

1 C. Furnish a chart with each piece of equipment listed, itemizing location for lubricant required and
2 recommended periods of lubrication. Incorporate chart in Instruction Manual.
3

4 **3.07 INSTRUCTIONS**
5

6 A. Instruct owner's representative in the operation and maintenance of all mechanical systems.
7

8 B. Assemble two (2) complete sets of manufacturer's printed operating and maintenance
9 instructions for all mechanical equipment installed under this contract. Prepare in bound copies
10 with index tabs. Information must include parts list and wiring diagrams. Submit to Architect for
11 presentation to the Owner.

12 **3.08 CLOSEOUT OPERATIONS**
13

14 A. Refer to Division 1 for additional project closeout requirements.
15

16 B. Closeout Equipment/System Operations: Sequence operations properly so that work of the
17 project will not be damaged or endangered. Coordinate with seasonal requirements.
18

- 19 1. Operate each item of equipment and each system in a test run of appropriate duration
20 with the Owner's operating personnel present to demonstrate sustained, satisfactory
21 performance.
- 22 2. Adjust and correct operations as required for proper performance.
- 23 3. Clean and lubricate each system, and replace dirty filters, especially worn belts and parts
24 and similar expandable items of the work.
25

26 C. Instruction, O&M: Instruct Owner (Owner's personnel) in the proper operation and maintenance
27 of the HVAC systems. Train personnel in the setting and scheduling of programmable
28 thermostats for occupied/unoccupied periods.
29

30 D. Service Organization: At time of substantial completion, Contractor shall provide Owner with a
31 listing of qualified service organizations (including addresses and telephone numbers) for each
32 piece of major equipment.
33

34 E. Turn-Over of Operations: At time of substantial completion, turn over the prime responsibility for
35 operation of HVAC equipment and systems to the Owner's operating personnel. However, during
36 the guarantee period, provide and operating engineer, who is completely familiar with work, to
37 consult with and continue training the Owner's personnel on an as-needed basis.
38
39

40 **END OF SECTION**

1 SECTION 26 00 00 - ELECTRICAL

2
3
4 PART 1 - GENERAL

5
6 1.01 DESCRIPTION

7
8 A. Work Included: Provide complete electrical service and distribution system with equipment and
9 materials where shown on the Drawings, as specified herein, and as needed for a complete and
10 proper installation including, but not necessarily limited to:

- 11
12 1. Branch circuit wiring, for lighting, receptacles, motors and equipment;
13 2. Lighting fixtures;
14 3. Wiring system for equipment and controls provided under other Sections of these
15 Specifications including General Construction, Plumbing and HVAC trades;
16 4. Power to overhead door operators by others.
17 5. Hangers, anchor sleeves, chase supports for fixtures, and other electrical materials and
18 equipment;
19 6. Demolition and deactivation of electrical systems in existing facilities as noted on
20 Drawings.
21 7. Other items and services required to complete the electrical systems.

22
23 B. Related Work:

- 24
25 1. Documents affecting work of this Section include, but are not necessarily limited to,
26 General Conditions, Supplementary Conditions, and Sections in Division 1 of these
27 Specifications;
28 2. Equipment structural supports, etc.;
29 3. All line voltage control wiring and starter interlocks, where specified;
30 4. Final equipment electrical connections.

31
32 C. Work of Other Sections:

- 33
34 1. Low-voltage (less than 100 volts) controls for General Construction, Plumbing, and HVAC
35 trades.
36

37 1.02 GENERAL PROVISIONS

38
39 A. Everything essential for the completion of the work implied to be covered by these Specifications
40 to make the system ready for normal and proper operation must be furnished and installed by this
41 Contractor. Accordingly, any omission from either the plans or the Specifications, or both, of
42 details necessary for the proper installation and operation of the system shall not relieve this
43 Contractor from furnishing such detail in full and proper manner.

44
45 B. In addition to the electrical plans, see General Plans of the building, as all electrical work
46 appearing on the latter plans will be part of this contract unless especially specified to be done by
47 other contractors, as well as, the said work detailed on the electrical plans.

48
49 1.03 QUALITY ASSURANCE

50
51 A. Use adequate numbers of skilled workmen who are thoroughly trained and experienced in the
52 necessary crafts and who are completely familiar with the specified requirements and methods
53 needed for proper performance of the work of this Section.

54
55 B. Without additional cost to the Owner, provide such other labor and materials as required to
56 complete the work of this Section in accordance with the requirements of governmental agencies

1 having jurisdiction, regardless of whether such materials and associated labor are called for
2 elsewhere in these Contract Documents.

3
4 C. Reference Standard: The following standards are imposed, as applicable to the work:

5
6

ASTM	American Society of Testing and Materials
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
UL	Underwriters Laboratories

10
11

12 **1.04 CODES AND PERMITS**

13
14 A. The Contractor must comply with national, state of Wisconsin and city of Kenosha building and
15 electrical codes and other ordinances in force where the building is located as far as same apply
16 to his work.

- 17
- 18 1. IBC 2009;
 - 19 2. IEEC 2009;
 - 20 3. NEC 2008;
 - 21 4. Wisconsin Electrical Code SPS sections.
- 22

23 B. He must secure permits from proper offices and pay fees as may be necessary for fulfilling the
24 requirements of these Specifications.

25
26 C. One (1) copy of all permits must be furnished to the Owner.

27
28 D. Electric Service Fee: Electrical Contractor shall secure and pay all fees for new electrical service
29 from electric utility, including temporary power services.

30
31 **1.05 COORDINATION**

32
33 A. Cooperate and coordinate with other trades to assure that all systems in the electrical work may
34 be installed in the best arrangement. Coordinate as required with all other trades to share space
35 in common areas and to provide the maximum of access to each system.

36
37 B. Arrange electrical work in neat, well-organized manner with piping and similar running parallel
38 with primary lines of building construction.

39
40 C. Locate operating and control equipment properly to provide easy access, and install entire
41 electrical systems with adequate access for operation and maintenance.

42
43 D. Give right-of-way to piping which must slope for drainage.

44
45 **1.06 ELECTRICAL PROVISIONS OF THE MECHANICAL WORK**

46
47 A. Line Voltage Wiring: The Electrical Contractor shall make all line voltage (100 volts and greater)
48 electrical wiring, final connections and motor wiring for Mechanical equipment.

49
50 B. Control Wiring: Low-voltage (less than 100 volts) control wiring in conjunction with Mechanical
51 work shall be by the Mechanical Contractor in strict accordance with the applicable sections of
52 the Electrical Specifications.

53
54 C. Motors, Starters, and Disconnects: All motors starter and disconnects shall be provided by the
55 Electrical Contractor, unless provided with the equipment or indicated otherwise.

1 4. Approval of shop drawings describing equipment that cannot fit in the space allotted does
2 not relieve this Contractor from responsibility of resubmitting equipment that will meet the
3 space requirements.
4

5 D. O & M Manual: Upon completion of this portion of the Work, and as a condition of its
6 acceptance, deliver to the Architect two (2) copies of an operation and maintenance manual
7 compiled in accordance with the provisions of Division 1 of these Specifications. Include the
8 following within the bound O&M manual:
9

- 10 1. Copy of the approved Record Documents for this portion of the Work;
- 11 2. Copies of all warranties and guaranties.
- 12 3. As-built drawings.
- 13

14 E. As-built Drawings: Record installation as-built on a set of blue-line prints during construction.
15 Plan shall represent actual locations, materials and circuiting of equipment installed.
16

17 1.11 PRODUCT HANDLING

18

19 A. Comply with pertinent provisions of Division 1.
20

21 1.12 WARRANTY

22

23 A. In addition to standard one year warranty on all labor and materials, provide an additional
24 warranty on ballasts for all new fluorescent and HID lighting fixtures as specified.
25

26 1.13 HOUSEKEEPING AND CLEAN-UP

27

28 A. Periodically as work progresses and/or as directed by the Architect, the Contractor shall remove
29 waste materials from the building and leave the area of the workroom clean. Upon completion of
30 work remove all tools, scaffolding, broken and waste materials, etc., from the site.
31

32 1.14 TEMPORARY SERVICES

33

- 34 A. This Contractor shall provide temporary lighting and power as required throughout the
35 construction period.
36
 - 37 B. Arrange for temporary electrical utility with local electrical utility. Electrical Contractor shall pay all
38 temporary electrical service and usage fees.
39
- 40

41 PART 2 - PRODUCTS

42

43 2.01 GENERAL

44

45 A. Provide only materials that are new, of the type and quality specified. Where Underwriters'
46 Laboratories, Inc. has established standards for such materials, provide only materials bearing
47 the UL label.
48

49 2.02 SERVICE ENTRANCES AND METERING

50

- 51 A. Existing Service: Reuse existing underground 100A, 120/240 volt, 1-phase, 3-wire electric
52 service.
53
- 54 B. Metering: Reuse existing meter cabinet.
55
- 56 C. Service Distribution Panel (Panel 'A'):
57

- 1 1. Provide 100-amp, 1-phase main distribution panel as indicated on plans complete with
2 100-amp main circuit breaker - 22K AIC, 10K AIC branch circuit breakers, NEMA 1
3 enclosure, main service ground and solid neutral buss lugs and other components
4 required for a complete installation.
5

6 **2.03 IDENTIFICATION**
7

- 8 A. Junction and pull boxes shall be stenciled utilizing a coded identification system. The following
9 junction and pull boxes shall be identified using a coded system. Coding shall be submitted to
10 Engineer for approval.
11

- 12 1. Light and Power - 120/240V;
13

- 14 B. Label circuit numbers for all accessible line voltage power distribution raceways and junction
15 boxes.
16

- 17 C. Laminated Bakelite Plates: Engraved plastic nameplate shall be securely fastened to the
18 following equipment. Size 1" x 4" with 3/8" high letters unless space available dictates differently.
19

- 20 1. Panelboards.
21

- 22 D. Typewritten Directory: Each panelboard shall be provided with a typewritten directory in a steel
23 frame with plastic cover contained on the inside of panel door. These directories shall indicate
24 load served and rooms served by each protective device in the respective panel.
25

- 26 E. Identify all conductors per NEC:
27

- 28 120/240V - Phase A - Black
29 - Phase B - Red
30 - Neutral - White
31 - Ground - Green
32

33 **2.04 POWER DISTRIBUTION SYSTEM**
34

- 35 A. See plans for panelboard capacity, voltage ratings, and branch circuit breaker units.
36

- 37 B. All panelboards to be of the circuit breaker type with bolt-on circuit breakers. AIC rating as
38 scheduled on drawings.
39

- 40 C. Branch circuit breakers shall be thermal magnetic; quick-make and quick break. Multi-pole
41 breakers to have common trip. Handle ties of any sort not allowed.
42

- 43 D. Panelboards shall be Square "D" type NQOD with bolt-on branch circuit breakers rated for
44 10,000 AIC.
45

- 46 1. Square 'D' is the only approved manufacturer for this project.
47

- 48 F. Each panel shall be provided with a typewritten directory mounted on inside of panel door and
49 covered with clear plastic. This directory shall indicate the load supplied by each branch circuit
50 breaker in panel. Room numbers shall be actual room numbers.
51

- 52 G. Each panelboard shall be securely attached to the building structure on 3/4" AC plywood backer
53 board with non-metallic painted surface.
54

- 55 H. All panelboards shall be equipped with an equipment grounding bar that is separate from the
56 solid neutral bar.
57

1 **2.05 WIRING DEVICES**

2
3 A. General:

- 4
5 1. Devices shall be provided at each location shown on the plans or called for in the
6 Specifications.
7 2. All devices shall be of one manufacturer. Acceptable manufacturers: Leviton, Pass and
8 Seymour, Hubbell or General Electric.
9 3. Device catalog references herein and on the plans are to be considered as standards of
10 comparison. Comparable devices manufactured by the other manufacturer will be
11 considered as an optional choice.
12 4. Device finish color to be selected by Architect.

13
14 B. Receptacles:

- 15
16 1. Duplex Receptacles: Industrial-specification grade, nylon face and base, NEMA 5-15R,
17 15A, tamperproof, side-wired only, 3-wire grounding type with the third terminal U-shaped
18 and grounded to the conduit system or green wire ground. Use of self-grounding option
19 not permitted.
20 a. 15-amp: Leviton 5262;
21 b. 20-amp: Leviton 5362;
22 2. GFCI Receptacle: Industrial-specification grade, NEMA 5-15R or 20R with indicator light
23 and feed through. Provide tamper resistant devices in public areas.
24 a. 15-amp: Leviton 7599; tamper resistant: Leviton T7599
25 b. 20-amp: Leviton 7899; tamper resistant: Leviton T7899

26
27 C. Switches:

- 28
29 1. All toggle switches used to control lighting shall be 20 amp rated for 120/277 volts, A.C.,
30 industrial-specification grade.
31 2. 15 amp switches shall not to be used unless specifically shown otherwise for special
32 control.
33 3. Switches to be back and side wired, silent or quiet type.
34 4. The following catalog numbers refer to Leviton, Inc.:
35 a. single pole – 1221-2;
36 b. three way – 1223-2;
37 c. four way – 1224-2;
38 d. Single pole with pilot light – 1221-PLR;

39
40 D. Plates:

- 41
42 1. Provide as required for each outlet, single or multiple gang.
43 2. Provide blank covers on all empty boxes or outlets.
44 3. Plates shall be 204 stainless steel construction in all finished areas.
45 4. Galvanized steel box covers shall be used in unfinished areas. Cover shall be 1/2"
46 raised with no sharp edges.
47 5. Provide single gang die-cast weather resistant in-use covers equal to Leviton M5979 on
48 receptacles in damp areas and exterior locations.

49
50 **2.06 RACEWAY SYSTEM**

51
52 A. Steel Conduit: Galvanized or sheradized steel intermediate or rigid metal conduit, or electrical
53 metallic tubing (EMT) with steel set screw or compression ring type fittings.

- 54
55 1. Provide steel conduits as all exposed in the work areas.
56 2. Where conduit is installed underground or in the floor slab, provide rigid galvanized steel
57 conduit, or PVC coated steel conduit is acceptable.

1
2 B. Rigid Non-Metallic Conduit: Schedule 40 PVC with solvent welded fittings.

- 3
4 1. Below grade installation only.
5 2. Encase in concrete below drives and roadways.

6
7 C. Electrical Non-Metallic Tubing(ENT):

- 8
9 1. Above grade indoor concealed installation only, for branch circuit wiring after the first
10 metallic junction box from the panelboard.
11 2. Not allowed for service conduit and panelboard feeders.
12 3. Provide and install per NEC Article 331 with grounding conductor.

13
14 D. Outlets, Junction Boxes and Switch Boxes:

- 15
16 1. Provide standard one-piece units, galvanized or sheradized, of shape and size best
17 suited to that particular location, of sufficient size to contain enclosed wires without
18 crowding.
19 2. Provide deep boxes(2-1/8") with 1" and larger conduit.
20 3. For lighting outlets, provide standard 4" octagon or square units, with 3/8" malleable iron
21 fixture studs and box hangers where required.
22 4. For switches and receptacles, provide boxes 4" square by 1-1/2" deep minimum with
23 rings and covers as required.

24
25 E. Low Voltage Cabling Raceways:

- 26
27 1. Provide 4" square boxes with single device ring and 3/4" raceway stubbed to accessible
28 area at ceiling with insulating bushing.
29 2. In areas with no ceiling, extend raceway to adjacent accessible ceiling space or to
30 telephone backboard or as directed by Owner.
31 3. Provide pull string for all low-voltage raceways.

32
33 F. Pull Boxes:

- 34
35 1. Provide galvanized code-gauge sheet units with screw-on covers, of size and shape required
36 to accommodate wires per NEC wire bending requirements, without crowding access and to
37 suit the location.

38
39 G. Provide sleeves and chases where conduits pass through floors and walls.

40
41 **2.07 CONDUCTORS**

42
43 A. Wire and Cable (600 Volt): Provide 600 V insulated copper wire and cable, NEC standard, of
44 types specified below for different applications, with UL label, and color coded as required by
45 governmental agencies having jurisdiction. Use only copper wires and cables.

- 46
47 1. With conductors No. 4 and larger, provide insulating bushings.
48 2. Wire and cable shall be THHN or THWN.
49 3. Branch circuit wiring installed in wiring channels of continuous row-mounted fixtures shall
50 be provided. UL listed type RHH or other approved 90 degree C wires, rated at 600 V.
51 4. Wire No. 10 and smaller shall be solid or stranded wire; wire larger than No. 10 shall be
52 stranded wire.
53 5. Wire in conduits subjected to direct sunlight shall be THWN or RHWN.
54 6. Provide XHHW/CU wiring in underground exterior conduit.
55 7. Identify feeder neutrals with white tape or white paint.
56 8. All low-voltage wiring located in accessible areas shall be installed in metallic conduit.
57 9. Provide separate identified neutral conductor for emergency and exit lighting circuits.

1 10. All branch circuit conductors shall be connected by means of a screw terminal.

2
3 B. Armored Cable (AC) or Metal-Clad Cable (MC):

- 4
5 1. Limit AC and MC usage to concealed only locations, branch-circuit wiring after the first
6 junction box from the panelboards; where approved by NEC, state and local electrical
7 inspecting authorities.
8 2. Not allowed for Panelboard feeders or service conduit.
9 3. Provide and install per NEC Articles 333 and 334 with grounding conductor.

10
11 **2.08 MOTOR WIRING**

- 12
13 A. See plans for approximate location and sizes of all motors. Verify exact locations at job site with
14 the contractor that is furnishing the motor driven equipment.
15
16 B. The Drawing motor schedules indicate that the anticipated horsepower loads and circuit sizes.
17 Verify all these requirements with contractor concerned and install accordingly under this
18 contract.
19
20 C. Install disconnect means where required by code for motors out of sight of controller. These shall
21 be fusible safety switches, fusetron box cover unit, or non-fused switch as indicated on plans. All
22 switches shall be horsepower rated.
23
24 D. All motors will be furnished and installed by others, unless noted otherwise.
25
26 E. Motor starters to be provided and installed by the Electrical Contractor unless indicated otherwise
27 herein or on the plans. See Motor Schedule.
28
29 F. All final connections to motors to be made by this Contractor.
30
31 G. All motors to be connected using flexible metallic conduits extending from motor box to outlet
32 box. Use liquid tight flexible metallic conduit with PVC covering in wet or oily locations and for all
33 motors within 12" of floor. See paragraph on GROUNDING. All wires in flexible metallic conduit
34 shall be stranded. Grounding wires shall be in all cases installed in flexible conduit and not
35 wrapped around the outside of the conduit.
36

37 **2.09 SAFETY SWITCHES**

- 38
39 A. Provide safety switches of general duty type, horsepower rated, quick-make and quick-break
40 design, externally operated with provision for padlocking, fusible or non-fusible as shown on the
41 Drawings.
42
43 B. Provide enclosures clearly marked for maximum voltage, current, and horsepower rating, and:
44
45 1. Indoor: NEMA type 1.
46 2. Outdoor: NEMA type 3R, raintight.
47
48 C. Approved Manufacturers: Square D, Cutler Hammer or Siemens.

49
50 **2.10 LIGHTING FIXTURES**

- 51
52 A. Provide fixtures of the types shown on the Drawings, and with the following accessories as
53 applicable.
54
55 B. Light Fixtures:
56
57 1. Provide units having a UL label.

2. Provide local label in addition if so required by governmental agencies having jurisdiction.
3. Verify all ceiling types as shown on final architectural plans and be responsible for ordering proper fixtures and accessories for the proper ceiling.

C. LED Lighting:

1. The manufacturer of the LED lighting fixture shall utilize high-brightness LEDs and high-efficiency electronic LED drivers, dimmed or no dimmed as required.
2. The LED fixture shall be thermally designed as to not exceed the maximum junction temperature of the LED for the ambient temperature of the location the fixture is to be installed
3. Light output of the LED system shall be the absolute photometry following IESNA LM-79 and IESNA LM-80 requirements and guidelines.
4. Minimum power factor of 0.90.
5. LED lighting fixture shall be mercury-free, lead-free and RoHS compliant.
6. The LED lighting fixture shall maintain 70% lumen output for a minimum of 50,000 hours.
7. All components of the LED lighting fixture shall be replaceable.
8. The LED lighting fixture shall carry a limited 3-year warranty minimum.

D. Acceptable Lighting Fixture Manufacturers:

1. Refer to **Fixture Schedule**. Engineer will evaluate and make final decision on whether submitted fixture is equal to specified light fixture.
2. Other fixture manufacturers who consider their products equal to those specified are required to request pre-approval for bidding as base bid in accord with Instructions to Bidders section.

2.11 OCCUPANCY SENSOR CONTROLS

A. Occupancy Sensors shall be equal to Sensor Switch or approved equal. Refer to Occupancy Sensor schedule on the Drawings for specific types required.

1. All sensors shall be capable of operating normally with electronic fluorescent ballasts and LED driver systems and rated motor loads.
2. Coverage of sensors shall remain constant after sensitivity control has been set. No automatic reduction shall occur in coverage due to the cycling of air conditioner or heating fans.
3. All sensors shall have readily accessible, user adjustable settings for time delay and sensitivity. Settings shall be located on the sensor (not the control unit) and shall be recessed to limit tampering.
4. All sensors shall provide an LED as a visual means of indication at all times to verify that motion is being detected during both testing and normal operation.

B. Passive Infrared Sensors:

1. Passive infrared sensors shall utilize Pulse Count Processing and Digital Signature Analysis to respond only to those signals caused by human motion.
2. Passive infrared sensors shall utilize mixed signal ASIC which provides high immunity to false triggering from RFI (hand-held radios) and EMI (electrical noise on the line), superior performance, and greater reliability.

C. Ultrasonic Sensors:

1. Ultrasonic sensors shall utilize Advanced Signal Processing to adjust the detection threshold dynamically to compensate for constantly changing levels of activity and air flow throughout controlled space.
2. Ultrasonic operating frequency shall be crystal controlled at 25 kHz within $\pm 0.005\%$ tolerance, 32 kHz within $\pm 0.002\%$ tolerance, or 40 kHz $\pm 0.002\%$ tolerance to assure reliable performance and eliminate sensor cross-talk. Sensors using multiple frequencies

1 are not acceptable.

2
3 D. Dual Technology Sensors:

- 4
5 1. Dual technology sensors shall be corner mounted to avoid detection outside the
6 controlled area when doors are left open.
7 2. Dual technology sensors shall consist of passive infrared and ultrasonic technologies for
8 occupancy detection. Products that react to noise or ambient sound shall not be
9 considered.

10
11 **2.12 OTHER MATERIALS**

- 12
13 A. Provide other materials, not specifically described but required for a complete and proper
14 installation, as selected by the Contractor subject to the approval of the Architect.
15

16
17 **PART 3 - EXECUTION**

18
19 **3.01 SURFACE CONDITIONS**

- 20
21 A. Examine the areas and conditions under which work of this Section will be performed. Correct
22 conditions detrimental to timely and proper completion of the Work. Do not proceed until
23 unsatisfactory conditions are corrected.
24

25 **3.02 PREPARATION**

26
27 A. Coordination:

- 28
29 1. Coordinate as necessary with other trades to assure proper and adequate provision in
30 the work of those trades for interface with the work of this Section.
31 2. Coordinate the installation of electrical items with the schedule for work of other trades to
32 prevent unnecessary delays in the work schedule.
33 3. Where lighting fixtures and other electrical items are shown in conflict with locations of
34 structural members and mechanical or other equipment, provide required supports and
35 wiring to clear the encroachment.
36

- 37 B. Data indicated on the Drawings and in these Specifications are as exact as could be secured, but
38 their absolute accuracy is not warranted. The exact locations, distances, levels, and other
39 conditions will be governed by actual construction and the Drawings and Specifications should be
40 used only for guidance in such regard.
41

- 42 C. Where outlets are not specifically located on the Drawings, locate as determined in the field by
43 the Architect. Where outlets are installed without such specific direction, relocate as directed by
44 the Architect and at no additional cost to the Owner.
45

- 46 D. Verify all measurements at the building. No extra compensation will be allowed because of
47 differences between work shown on the drawings and actual measurements at the site of
48 construction.
49

- 50 E. The Electrical Drawings are diagrammatic, but are required to be followed closely as actual
51 construction and work of other trades will permit. Where deviations are required to conform with
52 actual construction and the work of other trades, make such deviations without additional cost to
53 the Owner.
54

55 **3.03 INSTALLATION OF RACEWAYS AND FITTINGS**

- 1 A. Where conduit is installed concealed in walls or above ceiling, or exposed in work areas, provide
2 rigid galvanized conduit or electrical metallic tubing with compression type fittings.
3
4 1. Seal joints to prevent entrance of water.
5 2. Provide ground wire of proper size per NEC 250.
6 3. Use nylon (rather than steel) fish tape.
7
8 B. Use flexible conduit only for short motor connections, or where subject to vibration.
9
10 C. Provide necessary sleeves and chases where conduits pass through floors and walls and provide
11 other necessary openings and spaces, arranging for proper time to prevent unnecessary cutting
12 in connection with the Work.
13
14 D. Where conduit is exposed, run parallel to or at right angle with lines of the building.
15
16 E. Securely and rigidly support conduits throughout the work.
17

18 3.04 INSTALLATION OF LIGHTING FIXTURES 19

- 20 A. Install lighting fixtures complete and ready for service in accordance with the Lighting Fixture
21 Schedule shown on the Drawings.
22
23 B. Wire fixtures with fixture wiring of at least 90 degrees C rating. Where fixtures are mounted in
24 continuous rows, provide conductors in wiring channels of the same size as the circuit wires
25 supplying the row of fixtures.
26
27 C. Use only bonderized, galvanized, or sheradized steel for fixture installation for protection against
28 rust and corrosion, and install fluorescent fixtures straight and true with reference to walls.
29
30 D. Install all lighting fixtures, including those mounted in continuous rows, so that the weight of the
31 fixture is supported, either directly or indirectly, by a safe and sound structural member of the
32 building, using adequate number and type of fastenings to assure safe installation.
33
34 1. Screwed fastenings, and toggle bolts through ceiling material or wall paneling, are not
35 acceptable.
36

37 3.05 INSTALLATION OF POWER EQUIPMENT 38

- 39 A. Provide power and control wiring for motor starters and safety switches as shown on the
40 Drawings.
41

42 3.06 INSTALLATION OF CONDUCTORS 43

- 44 A. Unless otherwise shown on the Drawings or noted in these Specifications, use No. 12 AWG
45 conductors for all branch circuits, protected by 20 amp circuit breakers. For runs exceeding 100
46 feet, use larger wires to limit voltage drops.
47
48 B. Use identified (white) neutrals and color-coded phase wires for all branch circuit wiring.
49
50 1. Make splices electrically and mechanically secure with pressure-type connectors.
51 2. Provide "Scotchlok", Buchanan "B-cap", or Ideal "Wing-nut" connectors for wires sizes 6
52 AWG and smaller.
53 3. Provide Burndy compression-type connectors, "Hydent" or equal applied with a
54 mechanical tool and die equipment for wire sizes 4 AWG and larger.
55 4. Insulate splices with a minimum of two half-lapped layers of Scotch Branch No. 33 vinyl-
56 plastic electrical tape where insulation is required.
57

1 **3.07 INSTALLATION OF PANELBOARDS**

- 2
- 3 A. Unless otherwise shown on the Drawings, install panels with the top of the trim 6'-3" above the
- 4 finished floor.
- 5
- 6 B. Mount a typewritten directory behind plastic on the inside of each panel door and on the
- 7 directory, showing the circuit number and complete description of all outlets on each circuit.
- 8
- 9 C. Provide two (2) spare 1" conduits, stubbed out of the top of each flush-mounted panel and
- 10 terminated in accessible ceiling space, with each conduit tagged with panel description.
- 11

12 **3.08 TESTING AND INSPECTION**

- 13
- 14 A. Provide personnel and equipment, make required tests, and secure required approvals from the
- 15 Architect and governmental agencies having jurisdiction.
- 16
- 17 B. Make written notice to the Architect adequately in advance of each of the following stages of
- 18 construction:
- 19
- 20 1. Test all parts of the electrical system and prove that all such items provided under this
- 21 Section function electrically in the required manner.
- 22 2. Immediately submit to the Architect a report of maximum and minimum voltages and a
- 23 copy of the recording volt-meter chart.
- 24 3. Also measure voltages between phases and between phase wires and neutrals and
- 25 report these voltages to the Architect.
- 26

27 **3.09 PROJECT COMPLETION**

- 28
- 29 A. Upon completion of the work of this Section, thoroughly clean all exposed portions of the
- 30 electrical installation, removing all traces of soil, labels, grease, oil, and other foreign material,
- 31 and using only the type cleaner recommended by the manufacturer of the item being cleaned.
- 32
- 33 B. Thoroughly indoctrinate the Owner's operation and maintenance personnel in the contents of the
- 34 operations and maintenance manual required to be submitted under Article 1.3 of this Section of
- 35 these Specifications.
- 36

37 **END OF SECTION**

A & A

ENVIRONMENTAL SERVICES

P.O. Box 708 • Poynette, WI 53955
Phone: (608) 240-1511 • Email: Office@aaenv.com • Fax: (608) 635-9717
Results

April 27, 2017

Paul Stauffer
City of Madison
210 Martin Luther King Jr. Blvd
Madison, WI 53703-3342
(608) 266-4366, Cell (608) 575-5270
PStauffer@cityofmadison.com

RE: 1902 Freeport Road, Madison, WI 53703

On April 20, 2017 bulk samples were collected from suspect asbestos building materials on the cold and warm storage buildings at the City of Madison Parks Facility located at 1902 Freeport Road in Madison, WI. The samples were limited to the areas requiring maintenance in the near future.

Cold Storage building materials sampled are as follows:

Exterior textured paint – Samples 1 and 2

Roofing materials

Bottom layer of roofing felt under hard board – Sample 7

Wood fiber hard board – Sample 8

Bottom layer of roofing felt on top of hard board – Sample 9

Middle layer of roofing felt on top of hard board – Sample 10

Top layer of roofing felt on top of hard board – Sample 11

Tar over roofing felts – Sample 12

Tar holding roofing felts to the hard board – Sample 13

Warm Storage building materials sampled are as follows:

Topcoat stucco – Samples 3 and 5

Basecoat stucco – Samples 4 and 6

All bulk samples were analyzed for asbestos content by polarized light microscopy (PLM) and were reported as no asbestos detected.

The warm storage building roof has gray tar flashing around the three roof penetrations and caulk strips on the seams of the metal roof. Both materials appear to be in good condition however must be assumed to contain asbestos. If these materials are left undisturbed the assumed asbestos materials could be left in place and covered with a new roof.

A&A Environmental Inc.'s inspectors are only able to inspect open, safe, and accessible areas inside and outside of the building. Inaccessible suspect material may be hidden throughout this building. Any additional suspect materials discovered during the course of abatement/demolition/remodeling must be assumed to be ACM until sampled by and EPA/State of Wisconsin certified asbestos inspector and proven negative.

If you have any questions concerning this report or the sampling performed please feel free to contact me.

Sincerely,



Kim Sopha

Project Manager/Inspector #AII01851

Encl

KAS/bls



April 25, 2017

A & A Environmental Services
PO Box 708
Poynette, WI 53955

CLIENT PROJECT: 1902 Freeport Rd; 146
CEI LAB CODE: B17-0606

Dear Customer:

Enclosed are asbestos analysis results for PLM Bulk samples received at our laboratory on April 21, 2017. The samples were analyzed for asbestos using polarizing light microscopy (PLM) per the EPA 600 Method.

Sample results containing >1% asbestos are considered asbestos-containing materials (ACMs) per EPA regulatory requirements. The detection limit for the EPA 600 Method is <1% asbestos by weight as determined by visual estimation.

Thank you for your business and we look forward to continuing good relations. If you have any questions, please feel free to call our office at 919-481-1413.

Kind Regards,

A handwritten signature in black ink, appearing to read "Tianbao Bai".

Tianbao Bai, Ph.D., CIH
Laboratory Director

NVLAP[®]
TESTING
NVLAP LAB CODE 101768-0



ASBESTOS ANALYTICAL REPORT
By: Polarized Light Microscopy

Prepared for

A & A Environmental Services

CLIENT PROJECT: 1902 Freeport Rd; 146

CEI LAB CODE: B17-0606

TEST METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORT DATE: 04/25/17

TOTAL SAMPLES ANALYZED: 13

SAMPLES >1% ASBESTOS:

TOTAL LAYERS ANALYZED: 13

TEL: 866-481-1412

www.ceilabs.com



Asbestos Report Summary

By: POLARIZING LIGHT MICROSCOPY

PROJECT: 1902 Freeport Rd; 146

CEI LAB CODE: B17-0606

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

Client ID	Layer	Lab ID	Color	Sample Description	ASBESTOS %
01		B238092	Brown	Paint	None Detected
02		B238093	Brown	Paint	None Detected
03		B238094	White	Stucco Top Coat	None Detected
04		B238095	Gray	Stucco Base Coat	None Detected
05		B238096	White	Stucco Top Coat	None Detected
06		B238097	Gray	Stucco Base Coat	None Detected
07		B238098	Black	Roofing	None Detected
08		B238099	Brown	Fiberboard	None Detected
09		B238100	Black	Roofing Felt	None Detected
10		B238101	Black	Roofing Felt	None Detected
11		B238102	Black	Roofing Felt	None Detected
12		B238103	Black	Tar	None Detected
13		B238104	Black	Tar	None Detected



ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: A & A Environmental Services
 PO Box 708
 Poynette, WI 53955

CEI Lab Code: B17-0606
Date Received: 04-21-17
Date Analyzed: 04-24-17
Date Reported: 04-25-17

Project: 1902 Freeport Rd; 146

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS			ASBESTOS %
			Fibrous		Non-Fibrous	
01 B238092	Paint	Homogeneous	90%	Paint	None Detected	
		Brown	10%	Silicates		
		Non-fibrous				
		Bound				
02 B238093	Paint	Homogeneous	90%	Paint	None Detected	
		Brown	10%	Silicates		
		Non-fibrous				
		Bound				
03 B238094	Stucco Top Coat	Homogeneous	40%	Binder	None Detected	
		White	50%	Silicates		
		Non-fibrous	10%	Paint		
		Bound				
04 B238095	Stucco Base Coat	Homogeneous	10%	Fiberglass	None Detected	
		Gray	40%	Binder		
		Fibrous	50%	Silicates		
		Bound				
05 B238096	Stucco Top Coat	Homogeneous	40%	Binder	None Detected	
		White	50%	Silicates		
		Non-fibrous	10%	Paint		
		Bound				
06 B238097	Stucco Base Coat	Homogeneous	10%	Fiberglass	None Detected	
		Gray	40%	Binder		
		Fibrous	50%	Silicates		
		Bound				
07 B238098	Roofing	Homogeneous	70%	Cellulose	None Detected	
		Black	30%	Tar		
		Fibrous				
		Bound				



ASBESTOS BULK ANALYSIS

By: POLARIZING LIGHT MICROSCOPY

Client: A & A Environmental Services
 PO Box 708
 Poynette, WI 53955

CEI Lab Code: B17-0606
Date Received: 04-21-17
Date Analyzed: 04-24-17
Date Reported: 04-25-17

Project: 1902 Freeport Rd; 146

ASBESTOS BULK PLM, EPA 600 METHOD

Client ID Lab ID	Lab Description	Lab Attributes	NON-ASBESTOS COMPONENTS				ASBESTOS %
			Fibrous	Non-Fibrous			
08 B238099	Fiberboard	Homogeneous Brown Fibrous Loosely Bound	100%	Cellulose			None Detected
09 B238100	Roofing Felt	Homogeneous Black Fibrous Bound	60%	Fiberglass	40%	Tar	None Detected
10 B238101	Roofing Felt	Homogeneous Black Fibrous Bound	60%	Fiberglass	40%	Tar	None Detected
11 B238102	Roofing Felt	Homogeneous Black Fibrous Bound	60%	Fiberglass	40%	Tar	None Detected
12 B238103	Tar	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar	None Detected
13 B238104	Tar	Homogeneous Black Fibrous Bound	10%	Cellulose	90%	Tar	None Detected



LEGEND: Non-Anth = Non-Asbestiform Anthophyllite
 Non-Trem = Non-Asbestiform Tremolite
 Calc Carb = Calcium Carbonate

METHOD: EPA 600 / R93 / 116 and EPA 600 / M4-82 / 020

REPORTING LIMIT: <1% by visual estimation

REGULATORY LIMIT: >1% by weight

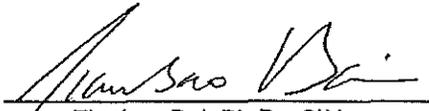
Due to the limitations of the EPA 600 method, nonfriable organically bound materials (NOBs) such as vinyl floor tiles can be difficult to analyze via polarized light microscopy (PLM). EPA recommends that all NOBs analyzed by PLM, and found not to contain asbestos, be further analyzed by Transmission Electron Microscopy (TEM). Please note that PLM analysis of dust and soil samples for asbestos is not covered under NVLAP accreditation. Estimated measurement of uncertainty is available on request.

This report relates only to the samples tested or analyzed and may not be reproduced, except in full, without written approval by CEI Labs, Inc. CEI Labs makes no warranty representation regarding the accuracy of client submitted information in preparing and presenting analytical results. Interpretation of the analytical results is the sole responsibility of the client. Samples were received in acceptable condition unless otherwise noted. This report may not be used by the client to claim product endorsement by NVLAP or any other agency of the U.S. Government.

ANALYST:


Megan Fisher

APPROVED BY:


Tianbao Bai, Ph.D., CIH
Laboratory Director



END OF PROJECT MANUAL
SUMMIT MAINTENANCE FACILITY- BUILDING IMPORVEMENTS
CONTRACT # 8152

SECTION E: BIDDERS ACKNOWLEDGEMENT

CONTRACT TITLE Summit Maintenance Facility - Bldg. Improvements -
CONTRACT NO. 8152

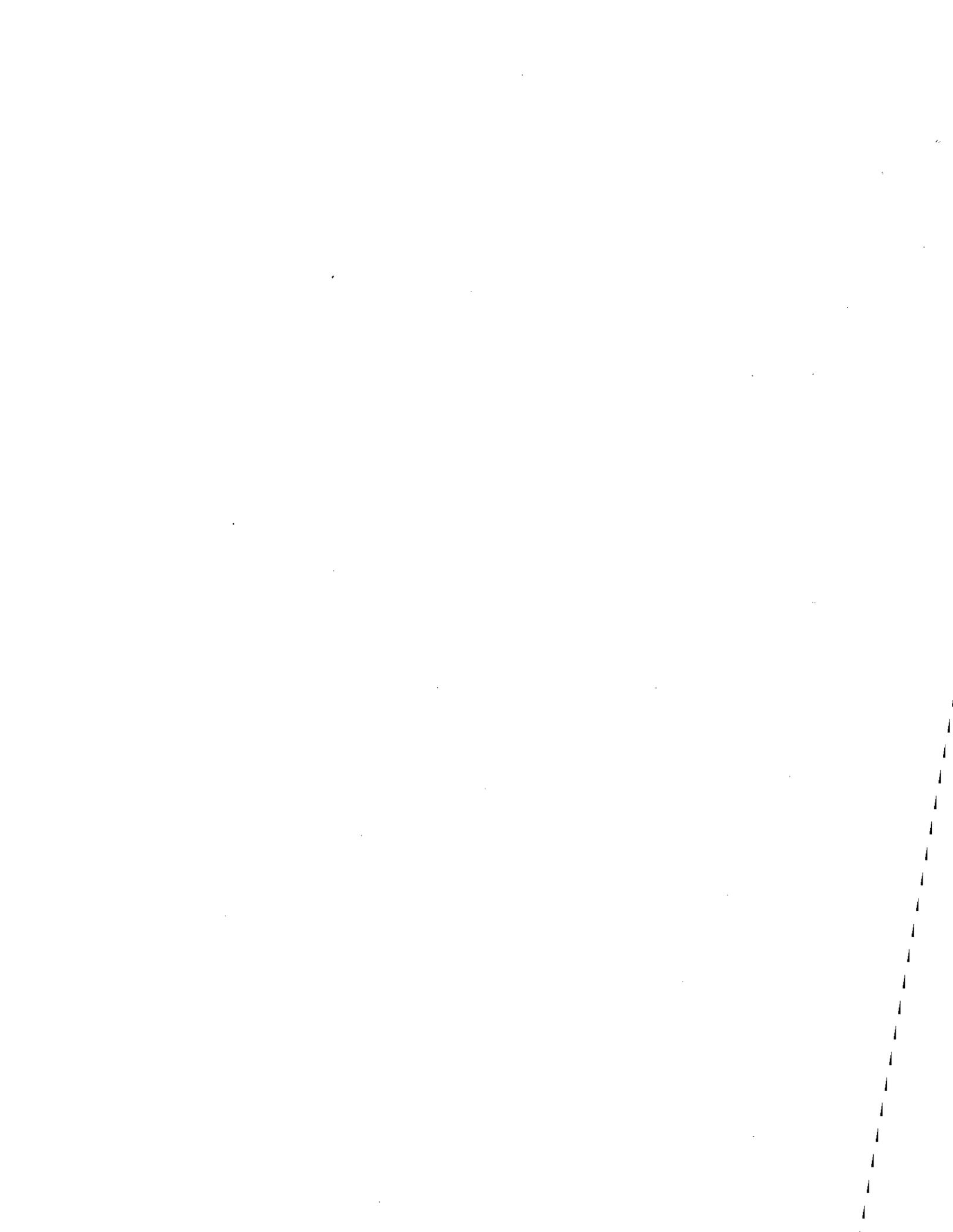
Bidder must state a Unit Price and Total Bid for each item. The Total Bid for each item must be the product of quantity, by Unit Price. The Grand Total must be the sum of the Total Bids for the various items. In case of multiplication errors or addition errors, the Grand Total with corrected multiplication and/or addition shall determine the Grand Total bid for each contract. The Unit Price and Total Bid must be entered numerically in the spaces provided. All words and numbers shall be written in ink.

1. The undersigned having familiarized himself/herself with the Contract documents, including Advertisement for Bids, Instructions to Bidders, Form of Proposal, City of Madison Standard Specifications for Public Works Construction - 2017 Edition thereto, Form of Agreement, Form of Bond, and Addenda issued and attached to the plans and specifications on file in the office of the City Engineer, hereby proposes to provide and furnish all the labor, materials, tools, and expendable equipment necessary to perform and complete in a workmanlike manner the specified construction on this project for the City of Madison; all in accordance with the plans and specifications as prepared by the City Engineer, including Addenda to the Contract Nos. 3 through 8 issued thereto, at the prices for said work as contained in this proposal. (Electronic bids submittals shall acknowledge addendum under Section E and shall not acknowledge here)
2. If awarded the Contract, we will initiate action within seven (7) days after notification or in accordance with the date specified in the contract to begin work and will proceed with diligence to bring the project to full completion within the number of work days allowed in the Contract or by the calendar date stated in the Contract.
3. The undersigned Bidder or Contractor certifies that he/she is not a party to any contract, combination in form of trust or otherwise, or conspiracy in restraint of trade or commerce or any other violation of the anti-trust laws of the State of Wisconsin or of the United States, with respect to this bid or contract or otherwise.
4. I hereby certify that I have met the Bid Bond Requirements as specified in Section 102.5. (IF BID BOND IS USED, IT SHALL BE SUBMITTED ON THE FORMS PROVIDED BY THE CITY. FAILURE TO DO SO MAY RESULT IN REJECTION OF THE BID).
5. I hereby certify that all statements herein are made on behalf of Forward Construction Group LLC (name of corporation, partnership, or person submitting bid) a corporation organized and existing under the laws of the State of Wisconsin a partnership consisting of MEMBERS an individual trading as LLC; of the City of Beloit State of Wisconsin; that I have examined and carefully prepared this Proposal, from the plans and specifications and have checked the same in detail before submitting this Proposal; that I have fully authority to make such statements and submit this Proposal in (its, their) behalf; and that the said statements are true and correct.

[Signature]
SIGNATURE
President
TITLE, IF ANY

Sworn and subscribed to before me this 22 day of February, 2018.

[Signature]
(Notary Public or other officer authorized to administer oaths)
My Commission Expires 2-7-2021
Bidders shall not add any conditions or qualifying statements to this Proposal.



Contract 8152 – Forward Construction Group, LLC

Section F: Best Value Contracting (BVC)

This section is a required document for the bid to be considered complete. There are two methods for completing the Best Value Contracting (BVC) form. Method one: The form can be filled out online and submitted to this site to be included with your electronic bid. Method two: The form can be downloaded from the site and submitted by hand to the City of Madison.

Method of Submittal for BVC (click in box below to choose) *

I will submit Bid Express fillable online form (BVC).

Best Value Contracting

1. The Contractor shall indicate the non-apprenticeable trades used on this contract.

N/A

2. Madison General Ordinance (M.G.O.), 33.07(7), does provide for some exemptions from the active apprentice requirement. Apprenticeable trades are those trades considered apprenticeable by the State of Wisconsin. Please check applicable box if you are seeking an exemption.

Contractor has a total skilled workforce of four or less individuals in all apprenticeable trades combined.

No available trade training program; The Contractor has been rejected by the only available trade training program, or there is no trade training program within 90 miles.

Contractor is not using an apprentice due to having a journey worker on layoff status, provided the journey worker was employed by the contractor in the past six months.

First time contractor on City of Madison Public Works contract requests a onetime exemption but intends to comply on all future contracts and is taking steps typical of a "good faith" effort.

Contractor has been in business less than one year.

Contractor doesn't have enough journeyman trade workers to qualify for a trade training program in that respective trade.

An exemption is granted in accordance with a time period of a "Documented Depression" as defined by the State of Wisconsin.

3. The Contractor shall indicate on the following section which apprenticeable trades are to be used on this contract. Compliance with active apprenticeship, to the extent required by M.G.O. 33.07(7), shall be satisfied by documentation from an applicable trade training body; an apprenticeship contract with the Wisconsin Department of Workforce Development or a similar agency in another state; or the U.S Department of Labor. This documentation is required prior to the Contractor beginning work on the project site.

The Contractor has reviewed the list and shall not use any apprenticeable trades on this project.

LIST APPRENTICABLE TRADES (check all that apply to your work to be performed on this contract)

- BRICKLAYER
- FCG → CARPENTER
- CEMENT MASON / CONCRETE FINISHER
- CEMENT MASON (HEAVY HIGHWAY)
- CONSTRUCTION CRAFT LABORER
- DATA COMMUNICATION INSTALLER
- ELECTRICIAN
- ENVIRONMENTAL SYSTEMS TECHNICIAN / HVAC SERVICE TECH/HVAC INSTALL / SERVICE
- GLAZIER
- HEAVY EQUIPMENT OPERATOR / OPERATING ENGINEER
- INSULATION WORKER (HEAT and FROST)
- IRON WORKER
- IRON WORKER (ASSEMBLER, METAL BLDGS)
- FCG → PAINTER and DECORATOR
- PLASTERER
- PLUMBER
- RESIDENTIAL ELECTRICIAN
- ROOFER and WATER PROOFER
- SHEET METAL WORKER
- SPRINKLER FITTER
- STEAMFITTER
- STEAMFITTER (REFRIGERATION)
- STEAMFITTER (SERVICE)
- TAPER and FINISHER
- TELECOMMUNICATIONS (VOICE, DATA and VIDEO) INSTALLER-TECHNICIAN
- TILE SETTER

Boutelle, Alane

From: Mark Golden <mark@fcgbuilds.com>
Sent: Monday, February 26, 2018 10:56 AM
To: Boutelle, Alane
Cc: 'Scott Ward'
Subject: RE: Contract 8152 - Section F Question

FCG will be performing the carpentry and painting work, and the masonry, HVAC, roofing and electrical will be performed by subcontractors.

From: Boutelle, Alane [mailto:ABoutelle@cityofmadison.com]
Sent: Monday, February 26, 2018 10:30 AM
To: 'Mark Golden'
Subject: Contract 8152 - Section F Question

Hi Mark,

Congratulations on Forward Construction Group being the low apparent bidder on contract 8152.

I just have a quick question on Section F in your bid.

I see 6 trades selected, but you checked that you have < 5 skilled individuals in Forward Construction's workforce. This Section is intended for just the General Contractor's workers.

Any subcontractor information required will be requested at a later date.

Will some of the trades selected be performed by subcontractors?

Please advise.

Regards,

Alane Boutelle
Program Assistant 2
City of Madison Engineering
1600 Emil Street
Madison, WI 53713
(608) 267-1197

CONTRACT NO. 8152

Small Business Enterprise Compliance Report

This information may be submitted electronically through Bid Express or submitted with bid in sealed envelope.

Cover Sheet

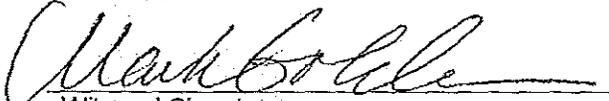
Prime Bidder Information

Company:	FORWARD CONSTRUCTION GROUP LLC
Address:	1011 EMMWOODGATE, BELLEVILLE WI 53511
Telephone Number:	608-365-1984
Fax Number:	608-361-7314
Contact Person/Title:	MARK GOLDEN

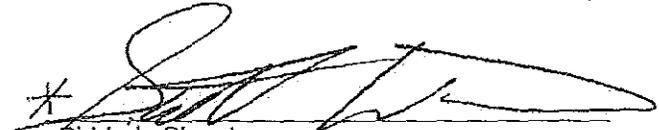
Prime Bidder Certification

Name:	SCOTT WARD
Title:	PRESIDENT
Company:	FORWARD CONSTRUCTION GROUP, LLC

I certify that the information contained in this SBE Compliance Report is true and correct to the best of my knowledge and belief.


Witness' Signature

2/22/2010
Date


* Bidder's Signature

SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS

CONTRACT NO. 8152

DATE: 2/22/18

**Forward Construction
Group, LLC**

Item	Quantity	Price	Extension
Section B: Proposal Page			
1 - LUMP SUM BID FOR NORTH BUILDING REPAIRS. INCLUDE INSTALLATION OF 2 SAFETY BOLLARD. - LUMP SUM	1.00	\$208,899.00	\$208,899.00
2 - LUMP SUM BID FOR SOUTH BUILDING REPAIRS. - LUMP SUM	1.00	\$66,559.00	\$66,559.00
2 Items	Totals		\$275,458.00

8152

SECTION G: BID BOND

KNOW ALL MEN BY THESE PRESENT, THAT Principal and Surety, as identified below, are held and firmly bound unto the City of Madison, (hereinafter referred to as the "Obligee"). In the sum of five per cent (5%) of the amount of the total bid or bids of the Principal herein accepted by the Obligee, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, to the City of Madison a certain bid, including the related alternate, and substitute bids attached hereto and hereby made a part hereof, to enter into a contract in writing for the construction of:

SUMMIT MAINTENANCE FACILITY – BUILDING IMPROVEMENTS CONTRACT NO. 8152

1. If said bid is rejected by the Obligee, then this obligation shall be void.
2. If said bid is accepted by the Obligee and the Principal shall execute and deliver a contract in the form specified by the Obligee (properly completed in accordance with said bid) and shall furnish a bond for his/her faithful performance of said contract, and for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void.

If said bid is accepted by the Obligee and the Principal shall fail to execute and deliver the contract and the performance and payment bond noted in 2. above executed by this Surety, or other Surety approved by the City of Madison, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to the Obligee as liquidated damages the sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the sum of this obligation as stated, and it is further understood that the Principal and Surety reserve the right to recover from the Obligee that portion of the forfeited sum which exceed the actual liquidated damages incurred by the Obligee.

The Surety, for value received, hereby stipulates and agrees that the obligations of said Surety and its bond shall be in no way impaired or affected by an extension of the time within which the Obligee may accept such bid, and said Surety does hereby waive notice of any such extension.



IN WITNESS WHEREOF, the Principal and the Surety have hereunto set their hands and seals, and such of them as are corporations have caused their corporate seals to be hereto affixed and these presents to be signed by their proper officers, on the day and year set forth below.

Seal PRINCIPAL

Forward Construction Group, LLC

Name of Principal

Scott Ward

By

2/22/18

Date

Scott Ward President

Name and Title

Seal SURETY

Granite Re, Inc.

Name of Surety

Connie Smith

By

February 22, 2018

Date

Connie Smith, Attorney-in-Fact

Name and Title

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Provider No. 2587929 for the year 2018, and appointed as attorney in fact with authority to execute this bid bond and the payment and performance bond referred to above, which power of attorney has not been revoked.

February 22, 2018

Date

Connie Smith

Agent Signature

2920 Enloe Street

Address

Hudson, WI 54016

City, State and Zip Code

800-535-0006

Telephone Number

NOTE TO SURETY & PRINCIPAL

The bid submitted which this bond guarantees shall be rejected if the following instrument is not attached to this bond:

Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.

SECTION H: AGREEMENT

THIS AGREEMENT made this 23 day of March in the year Two Thousand and Eighteen between **FORWARD CONSTRUCTION GROUP, LLC** hereinafter called the Contractor, and the City of Madison, Wisconsin, hereinafter called the City.

WHEREAS, the Common Council of the said City of Madison under the provisions of a resolution adopted **MARCH 20, 2018**, and by virtue of authority vested in the said Council, has awarded to the Contractor the work of performing certain construction.

NOW, THEREFORE, the Contractor and the City, for the consideration hereinafter named, agree as follows:

1. **Scope of Work.** The Contractor shall, perform the construction, execution and completion of the following listed complete work or improvement in full compliance with the Plans, Specifications, Standard Specifications, Supplemental Specifications, Special Provisions and contract; perform all items of work covered or stipulated in the proposal; perform all altered or extra work; and shall furnish, unless otherwise provided in the contract, all materials, implements, machinery, equipment, tools, supplies, transportation, and labor necessary to the prosecution and completion of the work or improvements:

SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS CONTRACT NO. 8152

2. **Completion Date/Contract Time.** Construction work must begin within seven (7) calendar days after the date appearing on mailed written notice to do so shall have been sent to the Contractor and shall be carried on at a rate so as to secure full completion SEE SPECIAL PROVISIONS, the rate of progress and the time of completion being essential conditions of this Agreement.
3. **Contract Price.** The City shall pay to the Contractor at the times, in the manner and on the conditions set forth in said specifications, the sum of **TWO HUNDRED SEVENTY-FIVE THOUSAND FOUR HUNDRED FIFTY-EIGHT AND NO/100 (\$275,458.00)** Dollars being the amount bid by such Contractor and which was awarded to him/her as provided by law.
4. **Affirmative Action.** In the performance of the services under this Agreement the Contractor agrees not to discriminate against any employee or applicant because of race, religion, marital status, age, color, sex, disability, national origin or ancestry, income level or source of income, arrest record or conviction record, less than honorable discharge, physical appearance, sexual orientation, gender identity, political beliefs, or student status. The Contractor further agrees not to discriminate against any subcontractor or person who offers to subcontract on this contract because of race, religion, color, age, disability, sex, sexual orientation, gender identity or national origin.

The Contractor agrees that within thirty (30) days after the effective date of this agreement, the Contractor will provide to the City Affirmative Action Division certain workforce utilization statistics, using a form to be furnished by the City.

If the contract is still in effect, or if the City enters into a new agreement with the Contractor, within one year after the date on which the form was required to be provided, the Contractor will provide updated workforce information using a second form, also to be furnished by the City. The second form will be submitted to the City Affirmative Action Division no later than one year after the date on which the first form was required to be provided.

The Contractor further agrees that, for at least twelve (12) months after the effective date of this contract, it will notify the City Affirmative Action Division of each of its job openings at facilities in Dane County for which applicants not already employees of the Contractor are to be considered. The notice will include a job description, classification, qualifications and application procedures

and deadlines. The Contractor agrees to interview and consider candidates referred by the Affirmative Action Division if the candidate meets the minimum qualification standards established by the Contractor, and if the referral is timely. A referral is timely if it is received by the Contractor on or before the date started in the notice.

Articles of Agreement Article I

The Contractor shall take affirmative action in accordance with the provisions of this contract to insure that applicants are employed, and that employees are treated during employment without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin and that the employer shall provide harassment free work environment for the realization of the potential of each employee. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation and selection for training including apprenticeship insofar as it is within the control of the Contractor. The Contractor agrees to post in conspicuous places available to employees and applicants notices to be provided by the City setting out the provisions of the nondiscrimination clauses in this contract.

Article II

The Contractor shall in all solicitations or advertisements for employees placed by or on behalf of the Contractors state that all qualified or qualifiable applicants will be employed without regard to race, religion, color, age, marital status, disability, sex, sexual orientation, gender identity or national origin.

Article III

The Contractor shall send to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding a notice to be provided by the City advising the labor union or worker's representative of the Contractor's equal employment opportunity and affirmative action commitments. Such notices shall be posted in conspicuous places available to employees and applicants for employment.

Article V

The Contractor agrees that it will comply with all provisions of the Affirmative Action Ordinance of the City of Madison, including the contract compliance requirements. The Contractor agrees to submit the model affirmative action plan for public works contractors in a form approved by the Affirmative Action Division Manager.

Article VI

The Contractor will maintain records as required by Section 39.02(9)(f) of the Madison General Ordinances and will provide the City Affirmative Action Division with access to such records and to persons who have relevant and necessary information, as provided in Section 39.02(9)(f). The City agrees to keep all such records confidential, except to the extent that public inspection is required by law.

Article VII

In the event of the Contractor's or subcontractor's failure to comply with the Equal Employment Opportunity and Affirmative Action Provisions of this contract or Section 39.03 and 39.02 of the Madison General Ordinances, it is agreed that the City at its option may do any or all of the following:

1. Cancel, terminate or suspend this Contract in whole or in part.

2. Declare the Contractor ineligible for further City contracts until the Affirmative Action requirements are met.
3. Recover on behalf of the City from the prime Contractor 0.5 percent of the contract award price for each week that such party fails or refuses to comply, in the nature of liquidated damages, but not to exceed a total of five percent (5%) of the contract price, or five thousand dollars (\$5,000), whichever is less. Under public works contracts, if a subcontractor is in noncompliance, the City may recover liquidated damages from the prime Contractor in the manner described above. The preceding sentence shall not be construed to prohibit a prime Contractor from recovering the amount of such damage from the non-complying subcontractor.

Article VIII

The Contractor shall include the above provisions of this contract in every subcontract so that such provisions will be binding upon each subcontractor. The Contractor shall take such action with respect to any subcontractor as necessary to enforce such provisions, including sanctions provided for noncompliance.

Article IX

The Contractor shall allow the maximum feasible opportunity to small business enterprises to compete for any subcontracts entered into pursuant to this contract. (In federally funded contracts the terms "DBE, MBE and WBE" shall be substituted for the term "small business" in this Article.)

5. Substance Abuse Prevention Program Required. Prior to commencing work on the Contract, the Contractor, and any Subcontractor, shall have in place a written program for the prevention of substance abuse among its employees as required under Wis. Stat. Sec. 103.503.

6. Contractor Hiring Practices.

Ban the Box - Arrest and Criminal Background Checks. (Sec. 39.08, MGO)

This provision applies to all prime contractors on contracts entered into on or after January 1, 2016, and all subcontractors who are required to meet prequalification requirements under MGO 33.07(7)(I), MGO as of the first time they seek or renew pre-qualification status on or after January 1, 2016. The City will monitor compliance of subcontractors through the pre-qualification process.

- a. **Definitions.** For purposes of this section, "Arrest and Conviction Record" includes, but is not limited to, information indicating that a person has been questioned, apprehended, taken into custody or detention, held for investigation, arrested, charged with, indicted or tried for any felony, misdemeanor or other offense pursuant to any law enforcement or military authority.

"Conviction record" includes, but is not limited to, information indicating that a person has been convicted of a felony, misdemeanor or other offense, placed on probation, fined, imprisoned or paroled pursuant to any law enforcement or military authority.

"Background Check" means the process of checking an applicant's arrest and conviction record, through any means.

- b. **Requirements.** For the duration of this Contract, the Contractor shall:

1. Remove from all job application forms any questions, check boxes, or other inquiries regarding an applicant's arrest and conviction record, as defined herein.

2. Refrain from asking an applicant in any manner about their arrest or conviction record until after conditional offer of employment is made to the applicant in question.
3. Refrain from conducting a formal or informal background check or making any other inquiry using any privately or publicly available means of obtaining the arrest or conviction record of an applicant until after a conditional offer of employment is made to the applicant in question.
4. Make information about this ordinance available to applicants and existing employees, and post notices in prominent locations at the workplace with information about the ordinance and complaint procedure using language provided by the City.
5. Comply with all other provisions of Sec. 39.08, MGO.

c. Exemptions: This section shall not apply when:

1. Hiring for a position where certain convictions or violations are a bar to employment in that position under applicable law, or
2. Hiring a position for which information about criminal or arrest record, or a background check is required by law to be performed at a time or in a manner that would otherwise be prohibited by this ordinance, including a licensed trade or profession where the licensing authority explicitly authorizes or requires the inquiry in question.

To be exempt, Contractor has the burden of demonstrating that there is an applicable law or regulation that requires the hiring practice in question, if so, the contractor is exempt from all of the requirements of this ordinance for the position(s) in question.

**SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS
CONTRACT NO. 8152**

IN WITNESS WHEREOF, the Contractor has hereunto set his/her hand and seal and the City has caused these presents to be sealed with its corporate seal and to be subscribed by its Mayor and City Clerk the day and year first above written.

Countersigned:

FORWARD CONSTRUCTION GROUP, LLC

Mark Lott 3/22/18
Witness Date

[Signature] 3/22/18
Company Name President Date

Witness Date

Secretary Date

CITY OF MADISON, WISCONSIN

Provisions have been made to pay the liability that will accrue under this contract.

Approved as to form:

[Signature]
Finance Director

[Signature]
City Attorney

Signed this 30th day of April

20 18

[Signature]
Witness

[Signature] 30 April 2018
Mayor Date

[Signature]
Witness

[Signature] 3-29-2018
City Clerk Date

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3105 11/17/05

Open
ini
MOS
11/17/05

SECTION I: PAYMENT AND PERFORMANCE BOND

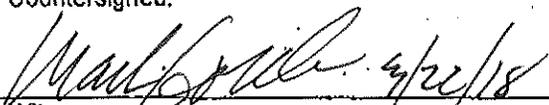
KNOW ALL MEN BY THESE PRESENTS, that we FORWARD CONSTRUCTION GROUP, LLC as principal, and Granite Re, Inc. Company of Oklahoma as surety, are held and firmly bound unto the City of Madison, Wisconsin, in the sum of TWO HUNDRED SEVENTY-FIVE THOUSAND FOUR HUNDRED FIFTY-EIGHT AND NO/100 (\$275,458.00) Dollars, lawful money of the United States, for the payment of which sum to the City of Madison, we hereby bind ourselves and our respective executors and administrators firmly by these presents.

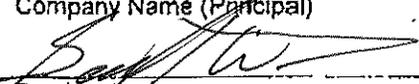
The condition of this Bond is such that if the above bounden shall on his/her part fully and faithfully perform all of the terms of the Contract entered into between him/herself and the City of Madison for the construction of:

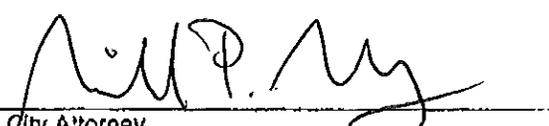
**SUMMIT MAINTENANCE FACILITY - BUILDING IMPROVEMENTS
CONTRACT NO. 8152**

in Madison, Wisconsin, and shall pay all claims for labor performed and material furnished in the prosecution of said work, and save the City harmless from all claims for damages because of negligence in the prosecution of said work, and shall save harmless the said City from all claims for compensation (under Chapter 102, Wisconsin Statutes) of employees and employees of subcontractor, then this Bond is to be void, otherwise of full force, virtue and effect.

Signed and sealed this 23rd day of March, 2018

Countersigned:

Witness

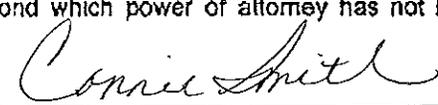
FORWARD CONSTRUCTION GROUP, LLC
Company Name (Principal)

President Seal

Secretary
Approved as to form:

City Attorney

Granite Re, Inc.
Surety Seal
 Salary Employee Commission
By 
Attorney-in-Fact Connie Smith

This certifies that I have been duly licensed as an agent for the above company in Wisconsin under National Producer Number 16492915 for the year 2018, and appointed as attorney-in-fact with authority to execute this payment and performance bond which power of attorney has not been revoked.

03/23/2018
Date


Agent Signature Connie Smith

GRANITE RE, INC.
GENERAL POWER OF ATTORNEY

Know all Men by these Presents:

That GRANITE RE, INC., a corporation organized and existing under the laws of the State of OKLAHOMA and having its principal office at the City of OKLAHOMA CITY in the State of OKLAHOMA does hereby constitute and appoint:

MICHAEL J. DOUGLAS; CHRIS STEINAGEL; CHRISTOPHER M. KEMP; KARLA HEFFRON; ROBERT DOWNEY; CONNIE SMITH its true and lawful Attorney-in-Fact(s) for the following purposes, to wit:

To sign its name as surety to, and to execute, seal and acknowledge any and all bonds, and to respectively do and perform any and all acts and things set forth in the resolution of the Board of Directors of the said GRANITE RE, INC. a certified copy of which is hereto annexed and made a part of this Power of Attorney; and the said GRANITE RE, INC. through us, its Board of Directors, hereby ratifies and confirms all and whatsoever the said:

MICHAEL J. DOUGLAS; CHRIS STEINAGEL; CHRISTOPHER M. KEMP; KARLA HEFFRON; ROBERT DOWNEY; CONNIE SMITH may lawfully do in the premises by virtue of these presents.

In Witness Whereof, the said GRANITE RE, INC. has caused this instrument to be sealed with its corporate seal, duly attested by the signatures of its President and Secretary/Treasurer, this 14th day of June, 2017.

STATE OF OKLAHOMA)
) SS:
COUNTY OF OKLAHOMA)



Kenneth D. Whittington
Kenneth D. Whittington, President
Kyle P. McDonald
Kyle P. McDonald, Treasurer

On this 14th day of June, 2017, before me personally came Kenneth D. Whittington, President of the GRANITE RE, INC. Company and Kyle P. McDonald, Secretary/Treasurer of said Company, with both of whom I am personally acquainted, who being by me severally duly sworn, said, that they, the said Kenneth D. Whittington and Kyle P. McDonald were respectively the President and the Secretary/Treasurer of GRANITE RE, INC., the corporation described in and which executed the foregoing Power of Attorney; that they each knew the seal of said corporation; that the seal affixed to said Power of Attorney was such corporate seal, that it was so fixed by order of the Board of Directors of said corporation, and that they signed their name thereto by like order as President and Secretary/Treasurer, respectively, of the Company.

My Commission Expires:
August 8, 2021
Commission #: 01013257



Kathleen E. Carlson
Notary Public

GRANITE RE, INC.
Certificate

THE UNDERSIGNED, being the duly elected and acting Secretary/Treasurer of Granite Re, Inc., an Oklahoma Corporation, HEREBY CERTIFIES that the following resolution is a true and correct excerpt from the July 15, 1987, minutes of the meeting of the Board of Directors of Granite Re, Inc. and that said Power of Attorney has not been revoked and is now in full force and effect.

“RESOLVED, that the President, any Vice President, the Secretary, and any Assistant Vice President shall each have authority to appoint individuals as attorneys-in-fact or under other appropriate titles with authority to execute on behalf of the company fidelity and surety bonds and other documents of similar character issued by the Company in the course of its business. On any instrument making or evidencing such appointment, the signatures may be affixed by facsimile. On any instrument conferring such authority or on any bond or undertaking of the Company, the seal, or a facsimile thereof, may be impressed or affixed or in any other manner reproduced; provided, however, that the seal shall not be necessary to the validity of any such instrument or undertaking.”

IN WITNESS WHEREOF, the undersigned has subscribed this Certificate and affixed the corporate seal of the Corporation this 14 day of June, 2017.



Kyle P. McDonald
Kyle P. McDonald, Secretary/Treasurer

The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that every entry should be supported by a valid receipt or invoice. This ensures transparency and accountability in the financial process.

Furthermore, it is noted that regular audits are essential to identify any discrepancies or errors. By conducting these audits frequently, potential issues can be resolved promptly, preventing them from escalating into larger problems.

In addition, the document highlights the need for clear communication between all parties involved. Regular meetings and reports should be provided to keep everyone informed about the current status and any upcoming changes.

Finally, it is stressed that adherence to all applicable laws and regulations is non-negotiable. This includes staying up-to-date with tax requirements and other legal obligations to avoid any penalties or legal consequences.

