RFB NO. 315035

CONSTRUCTION DOCUMENTS
PROJECT MANUAL

DANE COUNTY DEPARTMENT OF PUBLIC WORKS,
HIGHWAY AND TRANSPORTATION

PUBLIC WORKS ENGINEERING DIVISION
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713

REQUEST FOR BIDS NO. 315035
NORTHPORT NURSES DORM DECONSTRUCTION
LAKEVIEW CAMPUS
1206 NORTHPORT DRIVE
MADISON, WISCONSIN

Due Date / Time: **TUESDAY, JULY 28, 2015 / 10:00 A.M.**

Location: **PUBLIC WORKS OFFICE**

Performance / Payment Bond: **100% OF CONTRACT AMOUNT**

Bid Deposit: **5% OF BID AMOUNT**

FOR INFORMATION ON THIS REQUEST FOR BIDS, PLEASE CONTACT:

J. ERIC URTES, AIA - PROJECT MANAGER
TELEPHONE NO.: 608/266-4798
FAX NO.: 608/267-1533
E-MAIL: URTES.ERIC@COUNTYOFDANE.COM

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DOCUMENT INDEX FOR RFB NO. 315035

PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 - GENERAL REQUIREMENTS

DIVISION 02 - EXISTING CONDITIONS

DIVISION 03 – CONCRETE

Refer to drawings

DIVISION 04 – MASONRY

DIVISION 05 – METALS

DIVISION 06 – WOOD, PLASTICS AND COMPOSITES

DIVISION 07 – THERMAL AND MOISTURE PROTECTION

DIVISION 08 – OPENINGS

DIVISION 09 - FINISHES

09 24 00 Portland Cement Plastering
09 90 00 Painting

DIVISION 26 - ELECTRICAL
Refer to drawings

DIVISION 31 - EARTHWORK
31 10 00 Site Clearing
31 13 16 Selective Tree and Shrub Protection and Trimming
31 20 00 Earthwork
31 25 00 Erosion Control
32 13 13 Concrete Paving and Pavement Markings
33 48 00 Piping

DIVISION 32 – EXTERIOR IMPROVEMENTS
31 10 00 Seeding
32 92 20 Native Seeding
32 93 00 Plants

DRAWINGS
Plot sheets on 30” x 42” (E1) paper for correct scale.

GENERAL
G100 COVER SHEET AND INDEX OF DRAWINGS

CIVIL
C100 EXISTING CONDITIONS
C200 GRADING AND EROSION CONTROL PLAN
C300 DETAILS

LANDSCAPE
L100 LANDSCAPE PLAN NORTH SWALE/BASIN
L200 LANDSCAPE PLAN SOUTH SWALE/BASIN
L300 LANDSCAPE LEGEND AND DETAILS

ARCHITECTURAL
A100 ELEVATIONS
A200 DEMOLITION PLAN AND FLOOR PLANS
A500 DETAILS

ELECTRICAL
E100 ELECTRICAL FLOOR PLANS

LEGAL NOTICE

INVITATION TO BID

Dane County Public Works, Highway & Transportation Dept., 1919 Alliant Energy Center Way, Madison, WI 53713, will receive sealed Bids until:

10:00 A.M., TUESDAY, JULY 28, 2015

REQUEST FOR BIDS NO. 315035

NORTHPORT NURSES DORM DECONSTRUCTION

LAKEVIEW CAMPUS

1206 NORTHPORT DRIVE

MADISON, WISCONSIN

Dane County is inviting Bids for construction services. Work includes the deconstruction of the Former Nurses Dormitory on the Lakeview Campus. Significant architectural features of the building will be retained to create a historic interpretive site. The project will include Stormwater management features, site improvements and protection of historic cultural features. Only firms with capabilities, experience & expertise with similar projects should *obtain* this Request for Bids document & submit Bids.

Request for Bids document may be obtained after **2:00 p.m. on July 9, 2015** by downloading it from countyofdane.com/pwbids. Please call Eric Urtes, Project Manager, at 608/266-4798, or our office at 608/266-4018, for any questions or additional information.

All Bidders must be a registered vendor with Dane County & pay an annual registration fee & must be pre-qualified as a Best Value Contractor before award of Contract. Complete Vendor Registration Form at danepurchasing.com/registration or obtain one by calling 608/266-4131. Complete Pre-qualification Application for Contractors at countyofdane.com/pwht/BVC_Application.aspx or obtain one by calling 608/266-4029.

A pre-bid facility tour will be held July 15, 2015 at 10:30 a.m. at the Lakeview Campus, starting outside the nurse's dorm. Bidders are strongly encouraged to attend this tour.

PUBLISH: JULY 1 & JULY 7, 2015 - WISCONSIN STATE JOURNAL

JULY 1 & JULY 7, 2015 - THE DAILY REPORTER

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DANE COUNTY DEPARTMENT of PUBLIC WORKS, HIGHWAY and TRANSPORTATION

County Executive
Joseph T. Parisi

1919 Alliant Energy Center Way ◆ Madison, Wisconsin 53713
Phone: (608) 266-4018 ◆ FAX: (608) 267-1533

Commissioner / Director
Gerald J. Mandli

BEST VALUE CONTRACTING APPLICATION

CONTRACTORS / LICENSURE APPLICANTS

The Dane County Department of Public Works requires all contractors to be pre-qualified as a best value contractor with the County prior to being awarded a contract. In addition, the County pre-qualifies potential contractors and sub-contractors who wish to work on County contracts. Subcontractors must become pre-qualified ten (10) days prior to commencing work under any Dane County Public Works Contract. Potential subcontractors are urged to become pre-qualified as early as possible. This document shall be completed, properly executed, along with the necessary attachments and additional information that the County requires for the protection and welfare of the public in the performance of a County contract.

Contractors or subcontractors of any tier who attain pre-qualification status will retain that status for a period of two (2) years from the date of qualification. Contractors shall notify the Dane County Department of Public Works, Highway & Transportation within fifteen (15) days of any changes to its business or operations that are relevant to the pre-qualification application. Failure to do so could result in suspension, revocation of the contractor's pre-qualification, debarment from County contracts for up to three (3) years and / or other sanctions available under the law.

No contracts will be awarded for construction work performed on Dane County projects unless the contractor is currently approved as a Wisconsin Trade Trainer or has applied for approval as an Apprenticeship Trade Trainer to the Wisconsin Department of Workforce Development and agrees to an acceptable apprenticeship program. If you are not currently approved as a Wisconsin Trade Trainer, or have not applied for approval as an Apprenticeship Trade Trainer, please contact the Department of Workforce Development - Bureau of Apprenticeship Standards at 608/266-3133 or visit their web site at: dwd.wisconsin.gov/apprenticeship/.

EXEMPTIONS

- Contractors who employ less than five (5) apprenticeable trade workers are not required to pre-qualify.
- Contractors performing work that does not apply to an apprenticeable trade, as outlined in Appendix A.
- The contractor / subcontractor provides sufficient documentation to demonstrate one or more of the following:
    - apprentices are not available in a specific geographic area;
    - the applicable apprenticeship program is unsuitable or unavailable; or
    - there is a documented depression of the local construction market which prevents compliance.

SEC.	PROOF OF RESPONSIBILITY	CHECK IF APPLICABLE
1	Does your firm possesses all technical qualifications and resources, including equipment, personnel and financial resources, necessary to perform the work required for any project or obtain the same through the use of responsible, pre-qualified subcontractors?	Yes: ☐ No: ☐
2	Will your firm possess all valid, effective licenses, registrations or certificates required by federal, state, county, or local law, which are necessary for the type of work to be performed including, but not limited to, those for any type of trade work or specialty work?	Yes: ☐ No: ☐
3	Will your firm meet all bonding requirements as required by applicable law or contract specifications?	Yes: ☐ No: ☐
4	Will your firm meet all insurance requirements as required by applicable law or specifications, including general liability insurance, workers compensation insurance and unemployment insurance requirements?	Yes: ☐ No: ☐
5	Will your firm maintain a substance abuse policy for employees hired for public works contracts that comply with Wis. Stats. Sec. 103.503?	Yes: ☐ No: ☐
6	Does your firm acknowledge that it must pay all craft employees on public works projects the wage rates and benefits required under Section 66.0903 of the Wisconsin Statutes?	Yes: ☐ No: ☐
7	Will your firm fully abide by the equal opportunity and affirmative action requirements of all applicable laws, including County ordinances?	Yes: ☐ No: ☐
8	In the past three (3) years, has your firm had control or has another corporation, partnership or other business entity operating in the construction industry controlled it? If so, please attach a statement explaining the nature of the firm relationship?	Yes: ☐ No: ☐ If Yes, attach details.
9	In the past three (3) years, has your firm had any type of business, contracting or trade license, certification or registration revoked or suspended?	Yes: ☐ No: ☐ If Yes, attach details.
10	In the past three (3) years, has your firm been debarred by any federal, state or local government agency?	Yes: ☐ No: ☐ If Yes, attach details.
11	In the past three (3) years, has your firm defaulted or failed to complete any contract?	Yes: ☐ No: ☐ If Yes, attach details.
12	In the past three (3) years, has your firm committed a willful violation of federal, state or local government safety laws as determined by a final decision of a court or government agency authority.	Yes: ☐ No: ☐ If Yes, attach details.
13	In the past three (3) years, has your firm been in violation of any law relating to your contracting business where the penalty for such violation resulted in the imposition of a penalty greater than $10,000?	Yes: ☐ No: ☐ If Yes, attach details.
14	Is your firm Executive Order 108 precertified with the State of Wisconsin?	Yes: No: ☐
15	Is your firm an active Wisconsin Trade Trainer as determined by the Wisconsin Bureau of Apprenticeship Standards?	Yes: ☐ No: ☐
16	Is your firm exempt from being pre-qualified with Dane County?	Yes: ☐ No: ☐ If Yes, attach reason for exemption.
17	Does your firm acknowledge that in doing work under any County Public Works Contract, it will be required to use as subcontractors only those contractors that are also pre-qualified with the County or become so ten days prior to commencing work?	Yes: ☐ No: ☐
18	Contractor has been in business less than one year?	Yes: ☐ No: ☐
19	Is your firm a first time Contractor requesting a one time exemption, but, intend to comply on all future contracts and are taking steps typical of a “good faith” effort?	Yes: ☐ No: ☐
20	Not applicable. My firm does not intend to work on Best Value Contracts. Note: Best Value Contracting is required to bid on most Public Works Contracts (if unclear, please call Jan Neitzel Knox 608-266-4029).	Yes: ☐ No: ☐

SIGNATURE SECTION

Your firm's Officer, or the individual who would sign a bid and / or contract documents must sign this document.

I do hereby certify that all statements herein contained are true and correct to the best of my knowledge:

Signature _____ Date _____

Printed or Typed Name and Title _____

NAME AND ADDRESS OF CONTRACTOR	
Name of Firm:	
Address:	
City, State, Zip:	
Telephone Number:	
Fax Number:	
E-mail Address:	

REMEMBER!

Return all to forms and attachments, or questions to:

JAN NEITZEL KNOX
EMAIL: NEITZEL-KNOX@COUNTYOFDANE.COM
OFFICE: (608)266-4029, FAX: (608)267-1533

DANE COUNTY DEPARTMENT OF PUBLIC WORKS,
HGHWAY & TRANSPORTATION
1919 ALLIANT ENERGY CENTER WAY
MADISON, WI 53713

APPENDIX A

APPRENTICEABLE TRADES

Bricklayer
Carpenter
Cement Mason (Concrete Finisher)
Cement Mason (Heavy Highway)
Construction Craft Laborer
Data Communications Installer
Electrician
Elevator Mechanic / Technician
Environmental Systems Technician / HVAC Service Technician / HVAC Install & Service
Glazier
Heavy Equipment Operator / Operating Engineer
Insulation Worker (Heat & Frost)
Iron Worker (Assembler, Metal Buildings)
Painter / Decorator
Plasterer
Plumber
Roofer / Waterproofer
Sheet Metal Worker
Sprinkler Fitter
Steamfitter (Service & Refrigeration)
Taper & Finisher
Telecommunications (Voice, Data & Video) Installer / Technician
Tile Setter

INSTRUCTIONS TO BIDDERS

TABLE OF CONTENTS

1. GENERAL

A. Before submitting Bid, bidder shall thoroughly examine all Construction Documents. Successful Bidder shall be required to provide all the Work that is shown on Drawings, set forth in Specifications, or reasonably implied as necessary to complete Contract for this project.

B. Bidder shall visit site to become acquainted with adjacent areas, means of approach to site, conditions of actual site and facilities for delivering, storing, placing, and handling of materials and equipment.

C. Pre-bid meeting is scheduled on Wednesday, July 15, 2015 at 10:30 a.m. at the Lakeview Campus Administration Building main entry lobby, 1206 Northport Drive, Madison, Wisconsin. Attendance by all bidders is optional, however bidders and subcontractors are strongly encouraged to attend.

D. Failure to visit site or failure to examine any and all Construction Documents will in no way relieve successful Bidder from necessity of furnishing any necessary materials or equipment, or performing any work, that may be required to complete the Work in accordance with Drawings and Specifications. Neglect of above requirements will not be accepted as reason for delay in the Work or additional compensation.

2. DRAWINGS AND SPECIFICATIONS

A. Drawings and Specifications that form part of this Contract, as stated in Article 1 of General Conditions of Contact, are enumerated in Document Index of these Construction Documents.

B. Complete sets of Drawings and Specifications for all trades will be issued to all Bidders, irrespective of category of work to be bid on, in order that all Bidders may be familiar with work of other trades as they affect their bid.

3. INTERPRETATION

A. No verbal explanation or instructions will be given in regard to meaning of Drawings or Specifications before Bid Due Date. Bidders shall bring inadequacies, omissions or conflicts to Owner or Architect / Engineer's attention at least ten (10) days before Bid Due Date. Prompt clarification will be available to all bidders by Addendum.

B. Failure to so request clarification or interpretation of Drawings and Specifications will not relieve successful Bidder of responsibility. Signing of Contract will be considered as implicitly denoting that Contractor has thorough understanding of scope of the Work and comprehension of Construction Documents.

C. Owner or Architect / Engineer will not be responsible for verbal instructions.

4. QUALIFICATIONS OF BIDDER (CONTRACTOR AND SUBCONTRACTOR)

A. Before award of Contract can be approved, Owner shall be satisfied that Bidder involved meets following requirements:

1. Has completed at least one (1) project of at least fifty percent (50%) of size or value of Division of work being bid and type of work completed is similar to that being bid. If greater magnitude of experience is deemed necessary, other than size or value of work, such requirements will be described in appropriate section of Specifications.

2. Maintains permanent place of business.

3. Can be bonded for terms of proposed Contract.

4. Has record of satisfactorily completing past projects and supplies list of no more than five (5) most recent, similar projects, with architect or engineer's and owner's names, addresses and telephone numbers for each project. Submit to Public Works Project Engineer within three (3) days after Bid Due Date. Criteria which will be considered in determining satisfactory completion of projects by bidder will include:

    a. Completed contracts in accordance with drawings and specifications.
    b. Diligently pursued execution of work and completed contracts according to established time schedule unless Owner grants extensions.
    c. Fulfilled guarantee requirements of construction documents.
    d. Is not presently on ineligible list maintained by County's Department of Administration for noncompliance with equal employment opportunities and affirmative action requirements.
    e. Authorized to conduct business in Wisconsin. By submitting Bid, bidder warrants that it has: complied with all necessary requirements to do business in State of Wisconsin; that persons executing contract on its behalf are authorized to do so; and, if corporation, that name and address of bidder's registered agent are as set forth in Contract. Bidder shall notify Owner immediately, in writing, of any change in its

registered agent, their address, and bidder's legal status. For partnership, term "registered agent" shall mean general partner.

B. County's Public Works Project Engineer will make such investigations as are deemed necessary to determine ability of bidder to perform the Work, and bidder shall furnish to County's Public Works Project Engineer or designee all such information and data for this purpose as County's Public Works Project Engineer may request. Owner reserves right to reject Bid if evidence submitted by, or investigation of, bidder fails to satisfy Owner that bidder is responsible and qualified to carry out obligations of Contract and to complete the Work contemplated therein.

5. BID GUARANTEE

A. Bank certified check, cashier's check or Bid Bond, payable to County in amount not less than five percent (5%) of maximum bid, shall accompany each Bid as guarantee that if Bid is accepted, Bidder will execute and return proposed Contract and Performance and Payment Bonds within ten (10) days after being notified of acceptance of Bid. Company issuing bonds must be licensed to do business in Wisconsin.

B. Any bid, which is not accompanied by bid guarantee, will be considered "No Bid" and will not be read at Bid Due Date.

C. If successful Bidder so delivers Contract, Certificate of Insurance, and Performance and Payment Bonds, check will be returned to Bidder. In case Bidder fails to deliver such Contract, insurance, and bond, amount of bid guarantee will be forfeited to County as liquidated damages.

D. All checks tendered as bid guarantee, except those of three (3) lowest qualified, responsible bidders, will be returned to their makers within three (3) days after Bid Due Date. All such retained checks will be returned immediately upon signing of Contract and Performance and Payment Bonds by successful Bidder.

6. WITHDRAWAL OF BIDS

A. Bids may be withdrawn by written request received from bidder or authorized representative thereof prior to time fixed for Bid Due Date, without prejudice to right of bidder to file new Bid. Withdrawn Bids will be returned unopened. Negligence on part of bidder in preparing their Bid confers no right for withdrawal of Bid after it has been opened.

B. No Bid may be withdrawn for period of sixty (60) days after Bid Due Date.

C. If Bid contains error, omission or mistake, bidder may limit liability to amount of bidder's guarantee by giving written Notice of Intent not to execute Contract to Owner within seventy-two (72) hours of Bid Due Date.

7. CONTRACT FORM

A. Sample copy of contract that successful Bidder will be required to enter into is included in these Construction Documents and bidders are required to familiarize themselves with all conditions contained therein.

8. CONTRACT INTERESTS BY COUNTY PUBLIC OFFICIALS

A. In accordance with Wisconsin Statute 946.13, county official may not bid for or enter into any contract involving receipts or disbursements of more than $15,000.00 in a year, in which they have private pecuniary interest, direct or indirect if at same time they are authorized to take official action with respect to making of this Contract. Any contract entered into in violation of this Statute is void and County incurs no liability thereon. This subsection does not affect application and enforcement of Wisconsin Statute 946.13 by state prosecutors in criminal courts of this state.

9. EMERGING SMALL BUSINESS PROVISIONS

A. **Emerging Small Business Definition.** For purposes of this provision, ESB is defined as:

1. Independent business concern that has been in business minimum of one year;

2. Business located in State of Wisconsin;

3. Business comprised of less than twenty-five (25) employees;

4. Business must not have gross sales in excess of three million dollars ($3,000,000.00) over past three years; and

5. Business does not have history of failing to complete projects.

B. **Emerging Small Business (ESB) Involvement.** Bidder shall make good faith effort to award minimum of ten percent (10%) of the Work to ESBs. Bidder shall submit report to Dane County Contract Compliance Officer within twenty-four (24) hours after Bid Due Date demonstrating such efforts. Good faith efforts means significant contact with ESBs for purposes of soliciting bids from them. Failure to make or demonstrate good faith efforts will be grounds for disqualification.

C. **Emerging Small Business Report.** Emerging Small Business Enterprise Report is to be submitted by Bidder in separate envelope marked “Emerging Small Business Report”. This report is due by 2:00 p.m. following specified twenty-four (24) hours after Bid Due Date. Bidder who fails to submit Emerging Small Business Report shall be deemed not responsive.

D. **ESB Goal.** Goal of this project is ten percent (10%) ESB participation. ESB utilizations are shown as percentage of total Bid. If Bidder meets or exceeds specified goal, Bidder is only required to submit Form A - Certification, and Form B - Involvement. Goal shall be met if Bidder qualifies as ESB.

E. **Report Contents.** Following award of Contract, Bidder shall submit copies of executed contracts for all Emerging Small Businesses. Emerging Small Business Report shall consist of these:

1. Form A - Certification;

2. Form B - Involvement;

3. Form C - Contacts;

4. Form D - Certification Statement (if appropriate); and

5. Supportive documentation (i.e., copies of correspondence, telephone logs, copies of advertisements).

F. **ESB Listing.** Bidders will solicit bids from ESB listing provided by Dane County.

G. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Certification Application to Dane County Contract Compliance Program.

H. **Certification Statement.** If ESB firm has not been certified by County as ESB prior to submittal of this Bid, ESB Report cannot be used to fulfill ESB goal for this project unless firm provides "Form D - Certification Statement". Certification statement must be completed and signed by ESB firm.

I. **Questions.** Questions concerning Emerging Small Business provisions shall be directed to:

Dane County Contract Compliance Officer
City-County Building, Room 421
210 Martin Luther King, Jr. Blvd.
Madison, WI 53703
608/266-5623

J. **Substituting ESBs.** In event of any significant changes in subcontract arrangements or if need arises to substitute ESBs, Bidder shall report such proposed changes to Contract Compliance Officer to making any official changes and request authorization to substitute ESB firm. Bidder further agrees to make every possible effort to replace ESB firm with another qualified ESB firm.

K. **Good Faith Efforts.** Good faith efforts can be demonstrated by meeting all of these obligations:

1. Selecting portions of the Work to be performed by ESBs in order to increase likelihood of meeting ESB goal including, where appropriate, breaking down Contract into smaller units to facilitate ESB participation.

2. Advertising in general circulation, trade associations and women / minority focus media concerning subcontracting opportunities.

3. Providing written notices to reasonable number of specific ESBs that their interest in Contract was being solicited in sufficient time to allow ESBs to participate effectively.

4. Following up on initial solicitations of interest by contacting ESBs within five (5) working days prior to Bid Due Date to determine with certainty whether ESB were interested, to allow ESBs to prepare bids.

5. Providing interested ESB with adequate information about Drawings, Specifications and requirements of Contract.

6. Using services of available minority, women and small business organizations and other organizations that provide assistance in recruitment of MBEs / WBEs / ESBs.

7. Negotiating in good faith with interested ESBs, not rejecting ESBs as unqualified without sound reason based on thorough investigation of their capabilities.

8. Submitting required project reports and accompanying documents to County's Contract Compliance Officer within twenty-four (24) hours after Bid Due Date.

L. **Appeals Disqualification of Bid.** Bidder who is disqualified may appeal to Public Works & Transportation Committee and Equal Opportunity Commission.

10. METHOD OF AWARD - RESERVATIONS

A. Following will be basis of award of Contract, providing cost does not exceed amount of funds then estimated by County as available to finance Contract(s):

1. Lowest dollar amount submitted by qualified responsible bidder on Base Bid for all work comprising project, combined with such additive Owner accepted alternates.

2. Owner reserves right to reject all bids or any bid, to waive any informality in any bid, and to accept any bid that will best serve interests of County.

3. Unit Prices and Informational Bids will not be considered in establishing low bidder.

11. SECURITY FOR PERFORMANCE AND PAYMENTS

A. Simultaneous with delivery of signed Contract, Bidder shall be required to furnish Performance and Payment Bonds as specified in Article 29 of General Conditions of Contract, "Contract Security". Surety Company shall be licensed to do business in Wisconsin. Performance and Payment Bonds must be dated same date or subsequent to date of Contract. Performance and Payment Bonds must emulate information in Sample Performance and Payment Bonds in Construction Documents.

B. Provide certified copy of power of attorney from Surety Company showing that agent who signs Bond has power of attorney to sign for Surety Company. Secretary or Assistant Secretary of company must sign this certification, not attorney-in-fact. Certification must bear same or later date as Bond. Power of Attorney must emulate model power of attorney information detailed in Sample Performance and Payment Bonds.

C. If Bidder is partnership or joint venture, State certified list, providing names of individuals constituting partnership or joint venture must be furnished. Contract itself may be signed by one partner of partnership, or one partner of each firm comprising joint venture, but Performance and Payment Bonds must be signed by all partners.

D. If Bidder is a corporation, it is necessary that current certified copy of resolution or other official act of directors of corporation be submitted showing that person who signs Contract is authorized to sign contracts for corporation. It is also necessary that corporate seal be affixed to resolution, contract, and performance and payment bonds. If your corporation has no seal, it is required that above documents include statement or notation to effect that corporation has no seal.

12. TAXES

A. Bidder shall include in Bid, all Sales, Consumer, Use and other similar taxes required by law.

B. In accordance with Wisconsin Statute 71.80(16)(a),successful nonresident bidder, whether incorporated or not, and not otherwise regularly engaged in business in this state, shall file surety bond with State of Wisconsin Department of Revenue payable to Department of Revenue, to guarantee payment of income taxes, required unemployment compensation contributions, sales and use taxes and income taxes withheld from wages of employees,

together with any penalties and interest thereon. Amount of bond shall be three percent (3%) of Contract or subcontract price on all contracts of $50,000 or more.

13. SUBMISSION OF BIDS

A. All Bids shall be submitted on standard Bid Form bound herein and only Bids that are made on this Bid Form will be considered. Entire Bid Form and other supporting documents, if any, shall be removed or copied from Construction Documents, filled out, and submitted in manner specified hereinafter. Submit completed Bid Bond with Bid as well.

B. No bids for any subdivision or any sub-classification of this Work, except as indicated, will be accepted. Any conditional Bid, amendment to Bid Form or appended item thereto, or inclusion of any correspondence, written or printed matter, or details of any nature other than that specifically called for, which would alter any essential provision of Construction Documents, or require consideration of unsolicited material or data in determining award of Contract, will disqualify Bid. Telecommunication alterations to Bid will not be accepted.

C. Bidders must submit single Bid for all the Work.

D. Bid amounts shall be inserted in words and in figures in spaces provided on Bid Form; in case of conflict, written word amounts will govern.

E. Addenda issued after Bid Letting shall become part of Construction Documents. Bidders shall acknowledge receipt of such addenda in appropriate space provided on Bid Form. Bid may be rejected if receipt of any particular addendum applicable to award of Contract has not been acknowledged on Bid Form.

F. Bids shall be signed, placed in envelope, sealed and delivered before due time to place designated in Invitation to Bid, and identified with project name, bid number, location, category of work being bid upon, Bid Due Date, name and address of bidder.

G. Bidder shall be responsible for sealed Bid being delivered to place designated for Bid Due Date on or before date and time specified. Bids received after time of closing will be rejected and returned to bidder unopened.

H. Bid will be considered invalid and will be rejected if bidder has not signed it.

I. Faxed Bids will not be accepted.

J. Bidder's organization shall submit completed with Bid, Fair Labor Practices Certification form, included in these Construction Documents.

14. SUBCONTRACTOR LISTING

A. Bidders shall be required to submit list of major subcontractors for General Construction, Plumbing, HVAC, and Electrical work proposed for this project to include committed prices for each subcontractor. List shall be placed in separate sealed envelope that must be clearly identified as "Major Subcontractor List", for named project and name of Bidder submitting it. County must receive envelope no later than date by which successful Bidder is required to submit his or her signed Contract, as established in Construction Documents.

15. ALTERNATE BIDS

A. Bidder shall carefully read requests for Alternate Bids, and thoroughly examine Drawings and Specifications to determine extent various changes and conditions will affect Bid.

B. Space is provided in Bid Form for requested Alternate Bids. Failure to submit bid for any requested Alternate Bids may result in rejection of entire Bid.

C. Bidder shall state amount to be added / subtracted to Base Bid for providing alternates, including all incidentals, omissions, additions, and adjustments as may be necessary or required by such changes. If there is no difference in price, Bidder shall state, "No Change".

D. Descriptions of requested Alternate Bids are as set forth in Construction Documents.

16. INFORMATIONAL BIDS

A. Bidder shall state amount that is included in Base Bid for all equipment, materials and labor required to complete the Work described. Informational bids are amounts requested for accounting purposes and for allocation of funds only. It is not intended to omit any of the Work described or related items from this project.

B. Description of requested Informational Bids, if any, is as set forth in Construction Documents.

17. UNIT PRICES

A. Description of requested Unit Prices, if any, is set forth in Construction Documents.

18. COMMENCEMENT AND COMPLETION

A. Successful Bidder shall commence work when schedule and weather permit, but no later than stated in Bid Form. Contractor shall pursue the Work regularly and continuously at reasonable rate to insure completion of the Work within time stated in Bid.

B. Should it be found impossible to complete the Work on or before time specified for completion, written request may be submitted for extension of time setting forth reasons believed to justify granting of such request. Refer to Article 20 of General Conditions of Contract, titled "Time for Completion".

19. WORK BY OWNER

A. This work will be accomplished by Owner or will be let under separate contracts and will not be included under this Contract:

1. Hazardous Material Abatement.

2. Security Cameras.

3. Interpretive Signage.

20. SPECIAL HAZARDS COVERAGE

A. Not Applicable.

FORM A

DANE COUNTY
EMERGING SMALL BUSINESS REPORT - CERTIFICATION

In accordance with General Conditions of Contract, submit this Emerging Small Business Report within 24 hours after Bid Due Date.

PROJECT NAME: _____

_____

BID NO.: _____ BID DUE DATE: _____

BIDDER INFORMATION

COMPANY NAME: _____

ADDRESS: _____

_____

TELEPHONE NO.: _____

CONTACT PERSON: _____

FORM B

DANE COUNTY
EMERGING SMALL BUSINESS REPORT - INVOLVEMENT

Page ___ of ___
(Copy this Form as necessary to provide complete information)

COMPANY NAME: ______________________________

PROJECT NAME: ______________________________ BID NO.: ______________

ESB NAME: ______________________ CONTACT PERSON: ______________________

ADDRESS: ______________________________ PHONE NO.: ______________

CITY: ______________________________ STATE: __________ ZIP: __________

Indicate percentage of financial commitment to this ESB: ______________% Amount: $______________

ESB NAME: ______________________ CONTACT PERSON: ______________________

ADDRESS: ______________________________ PHONE NO.: ______________

CITY: ______________________________ STATE: __________ ZIP: __________

Indicate percentage of financial commitment to this ESB: ______________% Amount: $______________

ESB NAME: ______________________ CONTACT PERSON: ______________________

ADDRESS: ______________________________ PHONE NO.: ______________

CITY: ______________________________ STATE: __________ ZIP: __________

Indicate percentage of financial commitment to this ESB: ______________% Amount: $______________

FORM C

DANE COUNTY
EMERGING SMALL BUSINESS REPORT - CONTACTS

(Copy this Form as necessary to provide complete information)

COMPANY NAME: _____

PROJECT NAME: _____ BID NO.: _____

	ESB FIRM NAME CONTACTED	DATE	PERSON CONTACTED	DID ESB BID?	DID YOU ACCEPT BID?	REASON FOR REJECTION
1)						
2)						
3)						
4)						
5)						
6)						
7)						

FORM D

DANE COUNTY
EMERGING SMALL BUSINESS REPORT - CERTIFICATION STATEMENT

I, _____ , _____ of
Name Title

_____ certify to best of my knowledge and
Company

belief that this business meets Emerging Small Business definition as indicated in Article 9 and that information contained in this Emerging Small Business Report is true and correct.

_____ _____
Bidder's Signature Date

Name of Bidding Firm: _____

BID FORM

BID NO. 315035
PROJECT: NORTHPORT NURSES DORM DECONSTRUCTION
LAKEVIEW CAMPUS
1206 NORTHPORT DRIVE MADISON, WISCONSIN

TO: DANE COUNTY DEPARTMENT OF PUBLIC WORKS, HIGHWAY & TRANSPORTATION PROJECT MANAGER
1919 ALLIANT ENERGY CENTER WAY
MADISON, WISCONSIN 53713

BASE BID - LUMP SUM:
Work includes construction services for deconstruction of the Former Nurses Dormitory on the Lakeview Campus. Significant architectural features of the building will be retained to create a historic interpretive site. The project will include Stormwater Management features, site improvements and protection of historic cultural features. The undersigned, having examined the site where the Work is to be executed and having become familiar with local conditions affecting the cost of the Work and having carefully examined the Drawings and Specifications, all other Construction Documents and Addenda thereto prepared by Dane County Department of Public Works, Highway & Transportation hereby agrees to provide all labor, materials, equipment and services necessary for the complete and satisfactory execution of the entire Work, as specified in the Construction Documents, for the Base Bid stipulated sum of:

_____ and _____ /100 Dollars
Written Price

$_____
Numeric Price

Receipt of the following addenda and inclusion of their provisions in this Bid is hereby acknowledged:

Addendum No(s). _____ through _____

Dated _____

Dane County Department of Public Works, Highway & Transportation must have the building deconstruction and rough graded completed by October 1, 2015. Substantial completion and landscaping must be completed by Spring 2016. Assuming this Work can be started by August 17, 2015, what dates can you commence and complete this job?

Commencement Date: _____ Completion Date: _____
(final, not substantial)

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I hereby certify that all statements herein are made on behalf of:

_____

(Name of Corporation, Partnership or Person submitting Bid)

Select one of the following:

1. A corporation organized and existing under the laws of the State of _____, or

2. A partnership consisting of _____, or

3. A person conducting business as _____;

Of the City, Village, or Town of _____ of the State of _____.

I have examined and carefully prepared this Bid from the associated Construction Documents and have checked the same in detail before submitting this Bid; that I have full authority to make such statements and submit this Bid in (its) (their) (my) behalf; and that the said statements are true and correct. In signing this Bid, we also certify that we have not, either directly or indirectly, entered into any agreement or participated in any collusion or otherwise taken any action in restraint of free competition; that no attempt has been made to induce any other person or firm to submit or not to submit a Bid; that this Bid has been independently arrived at without collusion with any other bidder, competitor, or potential competitor; that this Bid has not been knowingly disclosed prior to the Bids Due Date to another bidder or competitor; that the above statement is accurate under penalty of perjury.

The undersigned further agrees to honor the Base Bid and the Alternate Bid(s) for 60 days from date of Award of Contract.

SIGNATURE: _____

(Bid is invalid without signature)

Print Name: _____ Date: _____

Title: _____

Address: _____

Telephone No.: _____ Fax No.: _____

Email Address: _____

Contact Person: _____

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THIS PAGE IS FOR BIDDERS' REFERENCE AND NEED NOT BE SUBMITTED WITH BID FORM.

BID CHECK LIST:
These items **must** be included with Bid:
☐ Bid Form ☐ Bid Bond ☐ Fair Labor Practices Certification
[☐ Project Experience / Reference Summary]

BIDDERS SHOULD BE AWARE OF THE FOLLOWING:

DANE COUNTY VENDOR REGISTRATION PROGRAM

Any person bidding on any County contract must be registered with the Dane County Purchasing Division & pay an annual registration fee. A contract will not be awarded to an unregistered vendor. Obtain a *Vendor Registration Form* by calling 608/266-4131 or complete a new form or renewal online at:
www.danepurchasing.com/registration

DANE COUNTY BEST VALUE CONTRACTING PRE-QUALIFICATION

Contractors must be pre-qualified as a Best Value Contractor with the Dane County Public Works Engineering Division before the award of contract. Obtain a *Best Value Contracting Application* by calling 608/266-4018 or complete one online at:
www.countyofdane.com/pwht/BVC_Application.aspx

EQUAL BENEFITS REQUIREMENT

By submitting a Bid, the contractor acknowledges that a condition of this contract is to provide equal benefits as required by Dane County Code of Ordinances Chapter 25.016. Contractor shall provide equal benefits as required by that Ordinance to all required employees during the term of the contract. Equal Benefits Compliance Payment Certification shall be submitted with final pay request. For more information:
www.danepurchasing.com/partner_benefit.aspx

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FAIR LABOR PRACTICES CERTIFICATION

The undersigned, for and on behalf of the BIDDER, APPLICANT or PROPOSER named herein, certifies as follows:

A. That he or she is an officer or duly authorized agent of the above-referenced BIDDER, APPLICANT or PROPOSER, which has a submitted a bid, application or proposal for a contract or agreement with the county of Dane.

B. That BIDDER, APPLICANT or PROPOSER has (check one):

_____ not been found by the National Labor Relations Board ("NLRB") or the Wisconsin Employment Relations Commission ("WERC") to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

_____ been found by the National Labor Relations Board ("NLRB") or the Wisconsin Employment Relations Commission ("WERC") to have violated any statute or regulation regarding labor standards or relations in the seven years prior to the signature date of this Certification.

_____ _____
Officer or Authorized Agent Signature Date

_____
Printed or Typed Name and Title

_____
Printed or Typed Business Name

NOTE: You can find information regarding the violations described above at: www.nlrb.gov and werc.wi.gov.

For reference, Dane County Ordinance 25.11(28)(a) is as follows:
(28) BIDDER RESPONSIBILITY. (a) Any bid, application or proposal for any contract with the county, including public works contracts regulated under chapter 40, shall include a certification indicating whether the bidder has been found by the National Labor Relations Board (NLRB) or the Wisconsin Employment Relations Committee (WERC) to have violated any statute or regulation regarding labor standards or relations within the last seven years. The purchasing manager shall investigate any such finding and make a recommendation to the committee, which shall determine whether the conduct resulting in the finding affects the bidder's responsibility to perform the contract.

If you indicated that the NLRB or WERC have found you to have such a violation, you must include copies of any relevant information regarding such violation with your proposal, bid or application.

Include this completed Certification with your bid, application or proposal.

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COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. ___ Bid No. 315035

Authority: 2015 RES -_____

THIS CONTRACT, made and entered into as of the date by which authorized representatives of both parties have affixed their signatures, by and between the County of Dane (hereafter referred to as "COUNTY") and _____ (hereafter, "CONTRACTOR"), and

W I T N E S S E T H :

WHEREAS, COUNTY, whose address is c/o Assistant Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR Deconstruct existing nurses dorm and protection of important historical features.("the Project"); and

WHEREAS, CONTRACTOR, whose address is _____ _____ is able and willing to construct the Project, in accordance with the Construction Documents;

NOW, THEREFORE, in consideration of the above premises and the mutual covenants of the parties hereinafter set forth, the receipt and sufficiency of which is acknowledged by each party for itself, COUNTY and CONTRACTOR do agree as follows:

1. CONTRACTOR agrees to construct, for the price of $_____ the Project and at the CONTRACTOR'S own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence labor, insurance, and other accessories and services necessary to complete the Project in accordance with the conditions and prices stated in the Bid Form, General Conditions of Contract, the drawings which include all maps, plats, plans, and other drawings and printed or written explanatory matter thereof, and the specifications therefore as prepared by _____ (hereinafter referred to as "the Architect / Engineer"), and as enumerated in the Project Manual Table of Contents, all of which are made a part hereof and collectively evidence and constitute the Contract.

2. COUNTY agrees to pay the CONTRACTOR in current funds for the performance of the Contract subject to additions and deductions, as provided in the General Conditions of Contract, and to make payments on account thereof as provided in Article entitled, "Payments to Contractor" of the General Conditions of Contract.

3. During the term of this Contract, CONTRACTOR agrees to take affirmative action to ensure equal employment opportunities. The CONTRACTOR agrees in accordance with Wisconsin Statute 111.321 and Chapter 19 of the Dane County Code of Ordinances not to discriminate on the basis of age, race, ethnicity, religion, color, gender, disability, marital status, sexual orientation, national origin, cultural differences, ancestry, physical appearance, arrest record or conviction record, military participation or membership in the national guard, state defense force or any other reserve component of the military forces of the United States, or political beliefs.

SAMPLE

Such equal opportunity shall include, but not be limited to, the following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation. CONTRACTOR agrees to post in conspicuous places, available to all employees and applicants for employment, notices setting forth the provisions of this paragraph.

4. CONTRACTOR shall file an Affirmative Action Plan with the Dane County Contract Compliance Officer in accord with Chapter 19 of the Dane County Code of Ordinances. CONTRACTOR must file such plan within fifteen (15) days of the effective date of this Contract. During the term of this Contract CONTRACTOR shall also provide copies of all announcements of employment opportunities to COUNTY'S Contract Compliance Office, and shall report annually the number of persons, by race, ethnicity, gender, and disability status, which apply for employment and, similarly classified, the number hired and number rejected.

5. During the term of this Contract, all solicitations for employment placed on CONTRACTOR'S behalf shall include a statement to the effect that CONTRACTOR is an "Equal Opportunity Employer."

6. CONTRACTOR agrees to comply with provisions of Chapter 25.016 of the Dane County Code of Ordinances, which pertains to domestic partnership benefits.

7. CONTRACTOR agrees to furnish all information and reports required by COUNTY'S Contract Compliance Officer as the same relate to affirmative action and nondiscrimination, which may include any books, records, or accounts deemed appropriate to determine compliance with Chapter 19, Dane County Code of Ordinances, and the provisions of this Contract.

SAMPLE

8. CONTRACTOR agrees that all persons employed by CONTRACTOR or any subcontractor shall be paid no less than the minimum wage established under Chapter 40, Subchapter II, Dane County Code of Ordinances. CONTRACTOR agrees to abide by and comply with the provisions of Chapter 40, Subchapter II of the Dane County Code of Ordinances, and said Subchapter is fully incorporated herein by reference.

9. This Contract is intended to be a Contract solely between the parties hereto and for their benefit only. No part of this Contract shall be construed to add to, supplement, amend, abridge or repeal existing rights, benefits or privileges of any third party or parties including, but not limited to, employees of either of the parties.

10. The entire agreement of the parties is contained herein and this Contract supersedes any and all oral agreements and negotiations between the parties relating to the subject matter hereof. The parties expressly agree that the express terms of this Contract shall not be amended in any fashion except in writing, executed by both parties.

11. CONTRACTOR must be pre-qualified as a Best Value Contractor with Dane County Public Works Engineering Division before award of Contract. Subcontractors must be pre-qualified ten (10) days prior to commencing Work under this Contract.

IN WITNESS WHEREOF, COUNTY and CONTRACTOR, by their respective authorized agents, have caused this Contract and its Schedules to be executed, effective as of the date by which all parties hereto have affixed their respective signatures, as indicated below.

* * * * * * *

FOR CONTRACTOR:

Signature Date

Printed or Typed Name and Title

Signature Date

Printed or Typed Name and Title

NOTE: If CONTRACTOR is a corporation, Secretary should attest. In accordance with IRS Regulations, unincorporated entities are required to provide either their Social Security or Employer Number in order to receive payment for services rendered.

* * * * * * *

This Contract is not valid or effectual for any purpose until approved by the appropriate authority designated below, and no work is authorized until the CONTRACTOR has been given notice to proceed by COUNTY'S Assistant Public Works Director.

SAMPLE

FOR COUNTY:

Joseph T. Parisi, County Executive Date

Scott McDonell, County Clerk Date

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THE AMERICAN INSTITUTE OF ARCHITECTS

AIA Document A310

Bid Bond

Bond No.

KNOW ALL MEN BY THESE PRESENTS, that we

(Here insert full name and address or legal title of Contractor)

as Principal, hereinafter called the Principal, and

(Here insert full name and address or legal title of Surety)

a corporation duly organized under the laws of the State of WI as Surety, hereinafter called the Surety, are held and firmly bound unto

(Here insert full name and address or legal title of Owner)

as Obligee, hereinafter called Obligee, in the sum of ( ) Percent of total amount bid

Dollars ($ Percent of attached bid).

For the payment of which sum well and truly to be made, the said Principal and the said Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

SAMPLE

WHEREAS, the Principal has submitted a bid for Project No.:

(Here insert full name, address, and description of project)

NOW, THEREFORE, if the Obligee shall accept the bid of the Principal and the Principal shall enter into a Contract with the Obligee in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the Obligee the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the Obligee may in good faith contract with another party to perform the Work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect.

Signed and sealed this day of , 20 .

(Principal) (Seal)

(Witness)

(Title)

(Surety) (Seal)

(Witness)

ATTORNEY-IN-FACT

THE AMERICAN INSTITUTE OF ARCHITECTS

Bond No.

AIA Document A312

Performance Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

SAMPLE

CONSTRUCTION CONTRACT
Date:
Amount: **$**
Description (Name and Location):

BOND
Date (Not earlier than Construction Contract Date):
Amount: **$**
Modifications to this Bond: [ ] None [ ] See Page 3

CONTRACTOR AS PRINCIPAL
COMPANY: (Corporate Seal)

SURETY COMPANY:
(Corporate Seal)

Signature: _____
Name and Title:

Signature: _____
Name and Title:
Attorney-in-Fact

(Any additional signatures appear on page 3)

FOR INFORMATION ONLY-Name, Address and Telephone AGENT OR BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except to participate in conferences as provided in Subparagraph 3.1.

3. If there is no Owner Default, the Surety's obligation under this Bond shall arise after:

3.1 The Owner has notified the Contractor and the Surety at its address described in Paragraph 10 below that the Owner is considering declaring a Contractor Default and has requested and attempted to arrange a conference with the Contractor and the Surety to be held not later than fifteen days after receipt of such notice to discuss methods of performing the Construction Contract. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default; and

3.2 The Owner has declared a Contractor Default and formally terminated the Contractor's right to complete the contract. Such Contractor Default shall not be declared earlier than twenty days after the Contractor and the Surety have received notice as provided in Subparagraph 3.1; and

3.3 The Owner has agreed to pay the Balance of the Contract Price to the Surety in accordance with the terms of the Construction Contract or to a contractor selected to perform the Construction Contract in accordance with the terms of the contract with the Owner.

4. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

4.1 Arrange for the Contractor, with consent of the Owner, to perform and complete the Construction Contract; or

4.2 Undertake to perform and complete the Construction Contract itself, through its agents or through independent contractors; or

4.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and the contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 6 in excess of the Balance of the Contract Price incurred by the Owner resulting from the Contractor's default; or

4.4 Waive its rights to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

1. After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, tender payment therefor to the Owner; or

2. Deny liability in whole or in part and notify the Owner citing reasons therefor.

5. If the Surety does not proceed as provided in Paragraph 4 with reasonable promptness, the Surety shall be deemed to be in default on this Bond fifteen days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Subparagraph 4.4, and the Owner refuses the payment tendered or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

6. After the Owner has terminated the Contractor's right to complete the Construction Contract, and if the Surety elects to act under Subparagraph 4.1, 4.2, or 4.3 above, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. To the limit of the amount of this Bond, but subject to commitment by the Owner of the Balance of the Contract Price to mitigation of costs and damages on the Construction Contract, the Surety is obligated without duplication for:

6.1 The responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

6.2 Additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 4; and

6.3 Liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

7. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, or successors.

8. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

9. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

SAMPLE

10. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page.

11. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted here from and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

12 DEFINITIONS

12.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

12.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

12.3 Contractor Default: Failure of the Contractor, which has neither been remedied nor waived, to perform or otherwise to comply with the terms of the Construction Contract.

12.4 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		SURETY	
Company:	(Corporate Seal)	Company:	(Corporate Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	
Address:		Address:	

THE AMERICAN INSTITUTE OF ARCHITECTS

Bond No.

AIA Document A312

Payment Bond

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Principal Place of Business):

OWNER (Name and Address):

SAMPLE

CONSTRUCTION CONTRACT
Date:
Amount: **$**
Description (Name and Location):

BOND
Date (Not earlier than Construction Contract Date):
Amount: **$**
Modifications to this Bond: [ ] None [ ] See Page 6

CONTRACTOR AS PRINCIPAL
COMPANY: (Corporate Seal)

SURETY COMPANY:
(Corporate Seal)

Signature: _____
Name and Title:

Signature: _____
Name and Title:
Attorney-in-Fact

(Any additional signatures appear on page 6)

FOR INFORMATION ONLY-Name, Address and Telephone
AGENT OR BROKER:

OWNER'S REPRESENTATIVE (Architect, Engineer or other party):

1. The Contractor and the Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

2. With respect to the Owner, this obligation shall be null and void if the Contractor:

2.1 Promptly makes payment, directly, or indirectly, for all sums due Claimants, and

2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 12) of any claims, demands, liens, or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

3. With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

4. The Surety shall have no obligation to Claimants under this Bond until:

4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

4.2 Claimants who do not have a direct contract with the Contractor:

1. Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

2. Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and

3. Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Paragraph 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

5. If a notice required by Paragraph 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

6. When the Claimant has satisfied the conditions of Paragraph 4, the Surety shall promptly and at the Surety's expense take the following actions:

6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

6.2 Pay or arrange for payment of any undisputed amounts.

7. The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

8. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

9. The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

11. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Subparagraph 4.1 or Clause 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor

SAMPLE

shall promptly furnish a copy of this Bond or shall permit a copy to be made.

15. DEFINITIONS

15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

SAMPLE

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		SURETY	
Company:	(Corporate Seal)	Company:	(Corporate Seal)
Signature: _____		Signature: _____	
Name and Title:		Name and Title:	
Address:		Address:	

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EQUAL BENEFITS COMPLIANCE PAYMENT CERTIFICATION

PURPOSE

25.016(8) of the Dane County Ordinance requires that each contractor receiving payment for contracted services must certify that he or she has complied fully with the requirements of Chapter 25.016 "Equal Benefits Requirement" of the Dane County Ordinances. Such certification must be submitted prior to the final payment on the contract.

This form should be included with a copy of the final contract invoice forwarded to your contract representative at Dane County.

CERTIFICATION

I, _____ certify that
Printed or Typed Name and Title

_____
Printed or Typed Name of Contractor

has complied fully with the requirements of Chapter 25.016 of the Dane County Ordinances "Equal Benefits Requirements".

Signed _____

Date _____

For questions on this form, please contact Chuck Hicklin at 608-266-4109 or your contract representative at Dane County.

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GENERAL CONDITIONS OF CONTRACT

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1. CONSTRUCTION DOCUMENTS

A. Construction Documents, listed in Table of Contents of this Specification volume shall form part of this Contract and provisions of Construction Documents shall be as binding upon parties as if they were fully set forth in Contract itself.

B. These shall also be considered as part of Construction Documents: Addenda, including additions and modifications incorporated in such addenda before execution of Contract; requests for information; construction bulletins; change orders; and written interpretations by Architect / Engineer or Public Works Project Manager that are made after execution of Contract.

C. Construction Documents are complementary, and what is required by one shall be as binding as if required by all. Intent of Construction Documents is to include all labor, materials and equipment necessary for proper execution of the Work.

2. DEFINITIONS

A. These terms as used in this Contract are respectively defined as follows:
   1. All uses of term "County" in Construction Documents shall mean Dane County.
   2. All uses of term "Department" in Construction Documents shall mean Department of Public Works, Highway & Transportation, which is a unit of Dane County government. Department is County agency overseeing Contract with Contractor.
   3. Public Works Project Manager is appointed by and responsible to Department. Public Works Project Manager has authority to act on behalf of Department and will sign change orders, payment requests and other administrative matters related to projects.
   4. Public Works Project Manager is responsible for supervision, administration and management of field operations involved in construction phase of this Work.
   5. Term "Work" includes all labor, equipment and materials necessary to produce project required by Construction Documents.
   6. Term "Substantial Completion" is date when project or specified area of project is certified by Architect / Engineer that construction is sufficiently completed, in accordance with Construction Documents, and as modified by any subsequent changes agreed to by parties, so that County may occupy project or specified area of project for use for which it was intended subject to permit approval for occupancy.
   7. Contractor is person, firm, or corporation with whom County makes Contract. Though multiple contracts may be involved, Construction Documents treat them throughout as if each were of singular number.

3. ADDITIONAL INSTRUCTIONS AND DRAWINGS

A. Contractor may be furnished additional instructions and detail drawings as necessary to carry out the Work included in Contract. Additional drawings and instructions thus supplied to Contractor will coordinate with Construction Documents and will be so prepared that they can be reasonably interpreted as part thereof. Contractor shall carry out the Work in accordance with additional detail drawings and instructions.

4. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

A. Unless otherwise specified, Contractor shall submit three (3) copies of all Shop Drawings for each submission, until receiving final approval. After final approval, provide five (5) additional copies for distribution and such other copies as may be required.

B. Contractor shall submit, on an on-going basis and as directed, Product Data such as brochures that shall contain catalog cuts and specifications of all furnished mechanical and electrical equipment. After Architect / Engineer's approval, one (1) copy shall remain in Architect / Engineer's file, one (1) kept at Department's office and one (1) kept at job site by Contractor for reference purposes.

C. Samples shall consist of physical examples furnished by Contractor in sufficient size and quantity to illustrate materials, equipment or workmanship, and to establish standards to compare the Work.
   1. Submit Samples in sufficient quantity (minimum of two (2)) to permit Architect / Engineer to make all necessary tests and of adequate size showing quality, type, color range, finish, and texture. Label each Sample stating material, type, color, thickness, size, project name, and Contractor's name.
   2. Submit transmittal letter requesting approval, and prepay transportation charges to Architect / Engineer's office on samples forwarded.
   3. Materials installed shall match approved Samples.

D. Contractor shall review Shop Drawings and place their dated stamp thereon to evidence their review and approval and shall submit with reasonable promptness and in orderly sequence to cause no delay in the Work or in work of any other contractor. At time of submission, Contractor shall inform Architect / Engineer in writing of any deviation in Shop Drawings or Samples from requirements of Construction Documents. Architect / Engineer will not consider partial lists.

E. Architect / Engineer will review and approve or reject Shop Drawings with reasonable promptness to cause no delay. Architect / Engineer's approval shall not relieve Contractor from responsibility for errors or omissions in Shop Drawings.

F. Contractor shall not commence any work requiring Shop Drawing, Product Data or Sample submission until Architect / Engineer has approved submission. All such work shall be in accordance with approved Shop Drawings, Product Data and Samples.

G. Contractor shall keep on site of the Work, approved or conformed copy of Shop Drawings and shall at all-time give Department access thereto.

H. By stamping and submitting Shop Drawings, Product Data and Samples, Contractor thereby represents that he or she has or will determine and verify all field measurements, field construction criteria, materials, catalog numbers, and similar data and that he or she has checked and coordinated each Shop Drawing, Product Data and Sample with requirements of the Work and of Construction Documents. Architect / Engineer shall return without examination, Shop Drawings, Product Data and Samples not so noted.

I. All Shop Drawings from any one Contractor should be numbered consecutively and on cover sheet shall bear name and location of project, name of Contractor, date of submittal and date of each correction or revision and associated Specification section and page number.

5. CUTTING AND PATCHING

A. Contractor shall be responsible for all cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

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

6. CLEANING UP

A. Contractor shall keep premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under Contract. Contractor shall remove from and about the Work waste materials, rubbish, Contractor's tools, construction equipment, machinery, and surplus materials at completion of the Work. Contractor shall maintain streets and sidewalks around the Work site in clean condition. Contractor shall remove all spillage and prevent tracking of spillage arising from performance of the Work, into, out of, and within the Work site. Contractor shall establish regular maintenance program of sweeping, vacuuming and / or hosing to minimize accumulation of dirt and dust upon such areas.

B. If Contractor fails to clean up as directed in Construction Documents, County may do so and shall charge Contractor cost thereof.

C. Contractor shall be responsible for broken windows and glass, and at completion of the Work shall replace such damaged or broken windows and glass. After replacing damaged or broken windows and glass, Contractor shall remove all labels, wash and polish both sides of all windows and glass.

D. In addition to general cleaning (sweeping, vacuuming and / or hosing, as is appropriate to work surface), Contractor shall perform following final cleaning for all trades at completion of the Work:
   1. Remove temporary protections;
   2. Remove marks, stains, fingerprints and other soil or dirt from painted, decorated and finished woodwork and wall surfaces;
   3. Remove spots, plaster, soil and paint from ceramic tile, marble and other finished materials, and wash or wipe clean;
   4. Clean fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged, new condition;
   5. Clean aluminum in accordance with recommendations of manufacturer; and
   6. Clean resilient floors thoroughly with well-rinsed mop containing only enough moisture to clean off any surface dirt or dust and buff dry by machine to bring surfaces to sheen.

7. USE OF SITE

A. Contractor shall provide County and Architect / Engineer access to the Work under all circumstances.

B. Contractor shall confine operations at site to areas permitted by County, law, ordinance, permits and Construction Documents and shall not unreasonably encumber site with materials or equipment. Contractor shall assure free, convenient, unencumbered, direct and safe access to all properties adjacent to the Work for County, its employees, invitees and guests.

8. MATERIALS AND WORKMANSHIP

A. Contractor shall perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, necessary to complete the Work required by this Contract, within time specified, in accordance with provisions of Construction Documents.

B. All equipment and materials incorporated in the Work covered by this Contract are to be new; use recycled and / or recovered materials to extent that such use is technically and economically feasible. Recovered materials are products recovered from solid waste in form identical to original form for use that is same as, or similar to original use. Recycled materials are products manufactured from solid waste.

C. If requested, Contractor shall furnish satisfactory evidence as to kind and quality of construction materials proposed or used. Contractor shall furnish to Architect / Engineer, for approval, manufacturer name and model, performance capacities and other pertinent information of machinery, mechanical, electrical or other types of equipment, which Contractor plans to install.

D. If not otherwise provided, materials and labor called for in this Contract shall be provided and performed in accordance with established practice and standards recognized by Architects, Engineers, Department, and construction industry.

E. Reference to "Standard" specifications of any association or manufacturer, or codes of County authorities, intends most recent printed edition or catalog in effect on date that corresponds with date of Construction Documents.

F. Whenever reference is made in Specifications that work shall be "performed", "applied", in accordance with "manufacturer's directions or instructions", Contractor to whom those instructions are directed shall furnish three (3) printed copies of such instructions to Architect / Engineer before execution of the Work.

9. CONTRACTOR'S TITLE TO MATERIALS

A. Contractor or any subcontractor shall not purchase materials or supplies for the Work subject to any chattel mortgage or under conditional sale contract or other agreement by which seller retains interest. Contractor warrants that all materials and supplies used in the Work are free from all liens, claims or encumbrances and Contractor has good title to them.

10. "OR EQUAL" CLAUSE

A. Whenever equipment or materials are identified on Drawings or in Specifications by reference to manufacturer's or vendor's name, trade name, catalog number, and other identifying information, it is intended to establish standards; and any equipment or material of other manufacturers and vendors which will perform adequately duties imposed by general design will be considered equally accepted provided equipment or material so proposed is, in opinion of Architect / Engineer, of equal substance and function. Architect / Engineer and Department shall provide written approval before Contractor may purchase or install it.

B. Equipment or materials of manufacturers, other than those named, may be used only upon following conditions:
   1. That, in opinion of Architect / Engineer and Department, proposed material or equipment item is fully equal or superior (in design, materials, construction, workmanship,

performance, finish, etc.) to named item. No compromise in quality level, however small, is acceptable.

2. That, in substituting materials or equipment, Contractor assumes responsibility for any changes in system or for modifications required in adjacent or related work to accommodate such substitution despite Architect / Engineer's and Department's approval, and all costs growing out of approval of "or equal" items shall be responsibility of Contractor. No extra costs resulting from such approval shall become responsibility of Department, Architect / Engineer or any other separate Contractor.
3. It shall be understood that use of materials or equipment other than those specified, or approved equal by Architect / Engineer and Department, shall constitute violation of Contract, and that Architect / Engineer and Department shall have right to require removal of such materials or equipment and their replacement with specified materials or equipment at Contractor's expense.
4. Product and manufacturer named first in Specifications or on information shown on Drawings is basis of selection of manufactured items and equipment, particularly mechanical equipment. In using other than first named products or manufacturers, including those specified as additionally approved or acceptable, Contractor assumes responsibility for any changes in system and for modifications in any work required to accommodate them. Architect / Engineer's approval of such additionally acceptable products or manufacturers, either in Specifications or in Addendum, does not relieve Contractor from obligation to coordinate such optional products with other Contractors, whose work may be affected by them, and to pay all additional costs resulting from their inclusion into the Work. Contractor's liability shall include payment of Architect / Engineer's fees for any additional services made necessary by or directly connected to such product changes. No extra costs resulting from such changes shall become responsibility of Department, Architect / Engineer or any other separate Contractor.

C. No request for approval of "or equal" materials will be entertained except from Contractor. Identify any request for substitution as substitution on Contractor's letter of transmittal and give reasons for substitution. Department may in its sole discretion allow substitutions of materials.

11. PATENTS AND ROYALTIES

A. If Contractor uses any design, device or material covered by letters, patent or copyright, it is mutually agreed and understood, that, without exception, contract prices shall include all royalties or costs arising from use of such design, device or materials, in any way involved in the Work.

B. Contractor shall indemnify and save harmless County from any and all claims for infringement by reason of use of such patent or copyright in connection with the Work agreed to be performed under this Contract, and shall indemnify County for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during prosecution of the Work or after completion of the Work.

12. SURVEYS, PERMITS, REGULATIONS AND TAXES

A. Department will furnish to Contractor all site, topography and property surveys necessary for execution of the Work.

B. Contractor shall procure all permits, licenses and approvals necessary for execution of this Contract.

C. Contractor shall give all notices and comply with all State of Wisconsin, Federal and local laws, codes, rules and regulations relating to performance of the Work, protection of adjacent property, and maintenance of passageways, guard fences or other protective facilities.

D. Contractor shall pay all Sales, Consumer, Use and other similar taxes required by law.

E. Contractor shall promptly notify Architect / Engineer of any variances of Drawings or Specifications with that of any State of Wisconsin, federal or local law, code, rule or regulation. Upon such notification, Architect / Engineer will require correction of variance to comply with applicable law, code, rule or regulation at no additional cost to Contractor.

F. Work under this Contract shall comply with all applicable State of Wisconsin, Federal and local laws, codes and regulations.

G. Contractor shall pay charges for water, sewer and other utility connections made by municipalities where required by Specifications.

13. CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE

A. Contractor shall provide and pay for all materials, labor, tools, equipment, transportation and superintendence necessary to execute, complete and deliver the Work within specified time. Contractor agrees to secure at their own expense all personnel necessary to carry out the Work. Such personnel shall not be deemed County employees nor shall they have or be deemed to have any direct contractual relationship with County.

B. Performance of any work necessary after regular working hours, on Sundays or Legal Holidays shall be without additional expense to County. Performance of any work at site at other than normal working hours must be coordinated with Public Works Project Manager.

C. Contractor shall furnish, erect, maintain and remove such temporary works as may be required.

D. Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of Construction Documents.

E. At the Work site, Contractor shall give personal superintendence to the Work or shall employ construction superintendent or foreman, experienced in character of work covered by Contract, who shall have full authority to act for Contractor. Understand that such superintendent or foreman shall be acceptable to Architect / Engineer and Department.

F. Remove from project or take other corrective action upon notice from Architect / Engineer or Department for Contractor's employees whose work is considered by Architect / Engineer or Department to be unsatisfactory, careless, incompetent, unskilled or otherwise objectionable.

G. Contractor and subcontractors shall be required to conform to Labor Laws of State of Wisconsin and various acts amendatory and supplementary thereto and to other laws, ordinances and legal requirements applicable to the Work.

H. Presence and observation of the Work by Architect / Engineer or Public Works Project Manager shall not relieve Contractor of any obligations.

14. WEATHER CONDITIONS

A. In event of temporary suspension of work, or during inclement weather, or whenever Architect / Engineer shall direct, Contractor shall, and shall cause subcontractors to protect carefully all work and materials against damage or injury from weather. If, in opinion of Architect / Engineer or Department, any work or materials that have been damaged or injured due to failure on part of Contractor or any subcontractors so to protect the Work, such materials shall be removed and replaced at expense of Contractor.

15. PROTECTION OF WORK AND PROPERTY

A. Contractor shall at all times safely guard County's property from injury or loss in connection with this Contract. Contractor shall at all times safely guard and protect the Work, and adjacent property, from damage. Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in Contract, or by County, or County's duly authorized representative.

B. Contractor may act diligently, without previous instructions from Architect / Engineer and / or Department, in emergency that threatens loss or injury of property, or safety of life. Contractor shall notify Architect / Engineer and / or Department immediately thereafter. Promptly submit any claim for compensation by Contractor due to such extra work to Architect / Engineer and / or Department for approval as provided for in Article 18 herein.

16. INSPECTION AND TESTING OF MATERIALS

A. Authorized representatives and agents of County government shall have access at all times to the Work wherever it is in preparation or progress and Contractor shall provide facilities for such access and for inspection.

B. Should it be considered necessary or advisable at any time before final acceptance of the Work to make examination of work already completed, by removing or tearing out same, Contractor shall upon request, promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any aspect, due to fault of Contractor or subcontractors thereof, Contractor shall assume all expenses of such examination and of satisfactory reconstruction. Contractor will be reimbursed for such examination and replacement in accordance with Article 18 - A.3., of these General Conditions of Contract if such work is found to meet requirements of Contract.

C. If Specifications, Architect / Engineer's, or Public Works Project Manager's instructions require any work to be specially tested or approved, Contractor shall give Architect / Engineer and Public Works Project Manager timely notice of its readiness for testing or inspection. Test all materials and equipment requiring testing in accordance with accepted or specified standards, as applicable. Architect / Engineer shall recommend laboratory or inspection agency and Department will select and pay for all initial laboratory inspection services. Should retesting be required, due to failure of initial testing, cost of such retesting shall be borne by Contractor.

D. Cost of any testing performed by manufacturers or Contractor for substantiating acceptability of proposed substitution of materials and equipment, or necessary conformance testing in conjunction with manufacturing processes or factory assemblage, shall be borne by Contractor or manufacturer responsible.

17. REPORTS, RECORDS AND DATA

A. Contractor shall submit to Architect / Engineer and Public Works Project Manager such schedule of quantities and costs, progress schedules, payrolls, reports, estimates, invoices, records and other data as either may request concerning work performed or to be performed under this Contract.

18. CHANGES IN THE WORK

A. Make no changes, except in cases of emergency, in the Work covered by approved Construction Documents without having prior written approval of Department. Charges or credits for the Work covered by approved change shall be determined by one of these methods:
   1. Unit bid prices previously approved.
   2. Agreed lump sum based on actual cost of:
      a) Labor, including foremen, and all fringe benefits that are associated with their wages.
      b) Materials entering permanently into the Work.
      c) Ownership or rental cost of construction tools and equipment during time of use on extra work.
      d) Power and consumable supplies for operation of power equipment.
      e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
      f) Social Security and old age and unemployment contributions.
      g) Add to cost under (2), fixed fee to be agreed upon, but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit and any other general expense.
      h) On that portion of the Work under (2) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit and any other general expense.
      i) Department may require correct amount of costs with supporting vouchers; Contractor shall keep and present in such form as directed.
   3. Cost-plus work, with not-to-exceed dollar limit, based on actual cost of:
      a) Labor, including foremen, and all fringe benefits that are associated with their wages.
      b) Materials entering permanently into the Work.
      c) Ownership or rental cost of construction tools and equipment during time of use on extra work. Rental cost cannot exceed fifty percent (50%) replacement value of rented equipment.
      d) Power and consumable supplies for operation of power equipment.
      e) Workmen's Compensation Insurance, Contractor's Public Liability and Property Damage Insurance, and Comprehensive Automobile Liability Insurance.
      f) Social Security and old age and unemployment contributions.
      g) To cost under (3), there shall be added fixed fee to be agreed upon but not to exceed fifteen percent (15%) of actual cost of work performed with their own labor force. Fee shall be compensation to cover cost of supervision, overhead, bond, profit, and any other general expense.
      h) On that portion of the Work under (3) done under subcontract, Contractor may include not over seven and one-half percent (7½%) for supervision, overhead, bond, profit, and any other general expense.
      i) Contractor shall keep and present, in such form as directed, correct amount of cost together with such supporting vouchers as may be required by Department.

B. If Contractor claims that by any instructions given by Architect / Engineer, Department, by drawings or otherwise, regarding performance of the Work or furnishing of material under Contract, involves extra cost, Contractor shall give Department written notice of cost thereof within two (2) weeks after receipt of such instructions and in any event before proceeding to execute work, unless delay in executing work would endanger life or property.

C. No claim for extra work or cost shall be allowed unless it was done in pursuance of written Change Order from Architect / Engineer and approved by Department, as previously mentioned, and claim presented with payment request submitted after changed or extra work is completed.

D. Negotiation of cost for change in the Work shall not be cause for Contractor to delay prosecution of the Work if Contractor has been authorized in writing by Public Works Project Manager to proceed.

19. EXTRAS

A. Without invalidating Contract, Department may order extra work or make changes by altering, adding to or deducting from the Work, contract sum being adjusted in accordance with Article 18 herein.

20. TIME FOR COMPLETION

A. Contractor agrees that the Work shall be prosecuted regularly and diligently and complete the Work as stated in Construction Documents.

21. CORRECTION OF WORK

A. All work, all materials whether incorporated in the Work or not, and all processes of manufacture shall at all times and places be subject to inspection of Architect / Engineer and Public Works Project Manager who shall be judge of quality and suitability of the Work, materials, and processes of manufacture for purposes for which they are used. Should they fail to meet Architect / Engineer's and Public Works Project Manager's approval they shall be reconstructed, made good, replaced or corrected, by Contractor at Contractor's expense. Immediately remove all rejected material from site.

B. If Contractor defaults or neglects to carry out the Work in accordance with Construction Documents or fails to perform any provision of Contract, Department may, after ten (10) days' written notice to Contractor and without prejudice to any other remedy County may have, make good such deficiencies. In such case, appropriate Change Order shall be issued deducting from Contractor's payments then or thereafter, cost of correcting such deficiencies, including cost of Architect / Engineer's additional services made necessary by such default, neglect or failure.

22. SUBSURFACE CONDITIONS FOUND DIFFERENT

A. If Contractor encounters subsurface or latent conditions at site materially differing from those shown on Drawings or indicated in Specifications, Contractor shall immediately give notice to Architect / Engineer and Public Works Project Manager of such conditions before they are disturbed. Architect / Engineer will thereupon promptly investigate conditions, and if Architect / Engineer finds that they materially differ from those shown on Drawings or indicated in Specifications, Architect / Engineer will at once make such changes as necessary,

any increase or decrease of cost resulting from such changes to be adjusted in manner provided in above Article 18 entitled “Changes in the Work”.

23. RIGHT OF DEPARTMENT TO TERMINATE CONTRACT

A. In event that any provisions of this Contract are violated by Contractor or by any subcontractors, County may serve written notice upon Contractor and Surety of its intention to terminate Contract, such notice to contain reasons for such intention to terminate Contract, and unless within ten (10) days after serving of such notice upon Contractor, such violation or delay shall cease and satisfactory arrangement or correction be made, Contract shall, upon expiration of said ten (10) days, cease and terminate.

B. In event of any such termination, County shall immediately serve notice thereof upon Surety and Contractor, and Surety shall have right to take over and perform Contract subject to County’s approval; provided, however, that if Surety does not commence performance thereof within ten (10) days from date of mailing to such Surety of notice of termination, County may take over the Work and prosecute same to completion by contract, or by force account, at expense of Contractor; Contractor and Surety shall be liable to County for any excess cost occasioned County thereby, and in such event County may take possession of and utilize in completing the Work, such materials and equipment as may be on the Work site and therefore necessary.

24. CONSTRUCTION SCHEDULE AND PERIODIC ESTIMATES

A. Contractor shall be responsible for Construction Schedule and coordination. Immediately after execution and delivery of Contract and before making first payment, Contractor shall notify all subcontractors to furnish all required information to develop Construction Schedule. Contractor and all subcontractors associated with the Work shall furnish following information from each Division of Specifications:
   1. List of construction activities;
   2. Start, finish and time required for completion of each activity;
   3. Sequential relationships between activities;
   4. Identify all long lead-time items, key events, meetings or activities such as required submittals, fabrication and delivery, procurement of materials, installation and testing;
   5. Weekly definition of extent of work and areas of activity for each trade or Subcontract; and
   6. Other information as determined by Public Works Project Manager.

B. In addition to above requested items, Contractor shall request delivery dates for all County-furnished equipment, materials or labor. This shall include any work handled by Department under separate contracts such as asbestos abatement, air and water balancing, etc. Indicate on Construction Schedule these associated delivery and installation dates.

C. Progress Reporting:
   1. Contractor shall update and publish Construction Schedule on monthly basis. Revisions to Schedule shall be by Contractor and made in same detail as original Schedule and accompanied by explanation of reasons for revision; and shall be subject to approval by Department.
   2. Failure of Contractor to keep Schedule in updated format shall result in County hiring firm specializing in construction schedule development and deducting those costs associated with updating process from payments due Contractor.
   3. Contractor shall submit show actual percentage of each activity completed, estimated future progress, and anticipated completion time.

D. Responsibility for timely completion requires:
   1. Contractor and subcontractors understand that performance of each is interdependent upon performance of others.
   2. Whenever it becomes apparent from current schedule, that phasing or progress completion dates will not be met, Contractor must take some or all following actions at no additional cost to County:
      a) Increase construction labor in such quantities and crafts as will eliminate backlog of work.
      b) Increase number of working hours per shift, shifts per working day, working days per week, amount of construction equipment, or any combination of foregoing to eliminate backlog of work.
      c) Reschedule work (yet remain in conformance with Drawings and Specifications).
   3. Prior to proceeding with any of above actions, Contractor shall notify Public Works Project Manager.

E. Maintain current Construction Schedule at all times. Revise Construction Schedule in same detail as original and accompany with explanation of reasons for revision. Schedule shall be subject to approval by Architect / Engineer and Public Works Project Manager.

25. PAYMENTS TO CONTRACTOR

A. Contractor shall provide:
   1. Detailed estimate giving complete breakdown of contract price by Specification Division; and
   2. Periodic itemized estimates of work done for purpose of making partial payments thereon.

B. Submit these estimates for approval first to Architect / Engineer, then to Public Works Project Manager. Costs employed in making up any of these schedules are for determining basis of partial payments and not considered as fixing basis for additions to or deductions from Contract price.

C. County will make partial payments to Contractor for value, proportionate to amount of Contract, of all labor and material incorporated in the Work during preceding calendar month upon receipt of Application and Certificate for Payment form from Architect / Engineer and approval of Department.

D. Contractor shall submit for approval first to Architect / Engineer, and then to Public Works Project Manager all Application and Certificate for Payment forms. If requested, Application and Certificate for Payment shall be supported by such additional evidence as may be required, showing Contractor's right to payment claimed.

E. Application and Certificate for Payment for preparatory work and materials delivered and suitably stored at site to be incorporated into the Work at some future period, will be given due consideration. Requesting payment for materials stored off site, may be rejected, however, if deemed essential for reasons of job progress, protection, or other sufficient cause, requests will be considered, conditional upon submission by Contractor of bills of sale, photographs and such other procedures as will adequately protect County's interest such as storage in bonded warehouse with adequate coverage. If there is any error in payment, Contractor is obligated to notify Department immediately, but no longer than ten (10) days from receipt of payment.

F. Payments by County will be due within forty-five (45) days after receipt by Department of Application and Certificate for Payment.

G. County will retain five percent (5%) of each Application and Certificate for Payment until final completion and acceptance of all the Work covered by Contract. However, any time after fifty percent (50%) of the Work has been furnished and installed at site, County will make remaining payments in full if Architect / Engineer and Public Works Project Manager find that progress of the Work corresponds with Construction Schedule. If Architect / Engineer and Public Works Project Manager find that progress of the Work does not correspond with Construction Schedule, County may retain up to ten percent (10%) of each Application and Certificate for Payment for the Work completed.

H. All material and work covered by partial payments made shall become sole property of County, but this provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made, or restoration of any damaged work, or as waiver of right of County to require fulfillment of all of terms of Contract.

I. County will make final payment within sixty (60) days after final completion of the Work, and will constitute acceptance thereof. Submit Equal Benefits Compliance Payment Certification with final pay request. Payment may be denied if Certification is not included.

J. County may make payment in full, including retained percentages and less authorized deductions, upon completion and acceptance of each Division where price is stated separately in Contract.

K. Every contractor engaged in performance of any contract for Department of Public Works, Highway & Transportation shall submit to this Department, as requested and with final application for payment for work under said contract, affidavit(s) as required to prove that all debts and claims against this Work are paid in full or otherwise satisfied, and give final evidence of release of all liens against the Work and County. If Wisconsin Prevailing Wage Rate Determination is required for this Work, use "Prime Contractor Affidavit of Compliance with Prevailing Wage Rate Determination" and "Agent or Subcontractor Affidavit of Compliance with Prevailing Wage Rate Determination" (if applicable). If Wisconsin Prevailing Wage Rate Determination is not required for this Work, use "Dane County, Wisconsin Contractor Wage Affidavit". Forms of such affidavits are included in Supplementary Conditions.

26. WITHHOLDING OF PAYMENTS

A. County, after having served written notice on said Contractor, may either pay directly any unpaid bills of which Department has written notice, or withhold from Contractor's unpaid compensation sum of money deemed reasonably sufficient to pay any and all such lawful claims until satisfactory evidence is furnished that all liabilities have been fully discharged; whereupon, payment to Contractor shall be resumed in accordance with terms of this Contract, but in no event shall these provisions be construed to impose any obligations upon County to either Contractor or Contractor's Surety.

B. In paying any unpaid bills of Contractor, County shall be deemed agent of Contractor, and any payment so made by County, shall be considered as payment made under Contract by County to Contractor and County shall not be liable to Contractor for any such payment made in good faith.

C. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from all claims growing out of lawful demands of subcontractors, laborers, workers, mechanics, material men, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in performance of this Contract.

D. At Department's request, Contractor shall furnish satisfactory evidence that all obligations of nature designated above have been paid, discharged or waived.

27. ACCEPTANCE OF FINAL PAYMENT AS RELEASE

A. Making of final payment shall constitute waiver of all claims by County except those arising from:
   1. Unsettled lien;
   2. Faulty or defective work appearing after substantial completion;
   3. Failure of the Work to comply with requirements of Construction Documents; or
   4. Terms of any special guarantees required by Construction Documents.

B. Acceptance of final payment shall constitute waiver of all claims by Contractor.

28. PAYMENTS BY CONTRACTOR

A. Contractor shall pay following not later than fifth (5^{th}) day following each payment received from County:
   1. All transportation and utility services rendered;
   2. All materials, tools, and other expendable equipment that have been delivered at site of the Work to extent of ninety percent (90%) of cost thereof, and balance of cost thereof when said balance is paid to Contractor; and
   3. Each subcontractor, respective amount allowed Contractor because of work performed by subcontractor to extent of subcontractor's interest therein.

29. CONTRACT SECURITY

A. Contractor shall furnish Performance and Payment Bonds in amount at least equal to one hundred percent (100%) of Contract price as security for faithful performance of this Contract and payment of all persons performing labor on project under this Contract and furnishing materials in connection with this Contract.

B. Sample Performance and Payment Bonds that Contractor will be required to execute is bound into these Construction Documents. Before construction Contract is consummated, completed Performance and Payment Bonds must be approved by Department.

30. ASSIGNMENTS

A. Contractor shall not assign whole or any part of this Contract or any moneys due or to become due hereunder without written consent of Department. In case Contractor assigns all or any part of any moneys due or to become due under this Contract, instrument of assignment shall contain clause substantially to effect that it is agreed that right of assignee in and to any moneys due or to become due to Contractor shall be subject to prior claims of all persons, firms and corporations for services rendered or materials supplied for performance of the Work called for in this Contract.

31. MUTUAL RESPONSIBILITY OF CONTRACTORS

A. If, through acts of neglect on part of Contractor or any subcontractor shall suffer loss or damage on the Work, Contractor agrees to settle with such subcontractor by agreement or arbitration if such other subcontractor will so settle. If such subcontractor shall assert any claim against County on account of any damage alleged to have been sustained, Department shall notify Contractor, who shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives against any such claim.

32. SEPARATE CONTRACTS

A. Department may award other contracts for the Work and all Contractors shall fully cooperate with each other and carefully adjust their work to that provided under other contracts as may be directed by Department. No Contractor shall commit or permit any act that will interfere with performance of the Work by any other Contractor.

B. Contractor shall coordinate the Work with those of other Contractors. Cooperation will be required in arrangement for storage of materials and in detailed execution of the Work. Contractor, including subcontractors, shall keep informed of progress and detail work of others and shall notify Architect / Engineer or Department immediately of lack of progress or defective workmanship on part of others. Failure of Contractor to keep informed of the Work progressing on site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by Contractor of status of the Work as being satisfactory for proper coordination with Contractor's own work.

33. SUBCONTRACTS

A. Contractor may use services of specialty subcontractors on those parts of the Work that, under normal contracting practices, are performed by specialty subcontractors.

B. Contractor shall not award any work to any subcontractor without prior approval of Department. Qualifications of subcontractors shall be same as qualifications of Contractor. Request for subcontractor approval shall be submitted to Department fifteen (15) days before start of subcontractor's work. If subcontractors are changed or added, Contractor shall notify Department in writing.

C. Contractor shall be as fully responsible to County for acts and omissions of subcontractors, and of persons either directly or indirectly employed by them, as Contractor is for acts and omissions of persons directly employed by Contractor.

D. Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the Work to bind subcontractors to Contractor by terms of General Conditions of Contract and other Construction Documents insofar as applicable to work of subcontractors and to give Contractor same power as regards terminating any subcontract that Department may exercise over Contractor under any provision of Construction Documents.

E. Nothing contained in this Contract shall create any contractual relation between any subcontractor and County.

F. Contractor shall insert in all subcontracts, Articles 26, 33, 43 and 45, respectively entitled: "Withholding of Payments", "Subcontracts", "Affirmative Action Provision and Minority / Women / Disadvantaged Business Enterprises", and "Minimum Wages", and shall further require all subcontractors to incorporate physically these same Articles in all subcontracts.

34. PUBLIC WORKS PROJECT MANAGER'S AUTHORITY

A. Public Works Project Manager shall:
   1. Administer and ensure compliance with Construction Documents;
   2. Provide responsible on-site observations of construction and have authority to request work and to stop work whenever necessary to insure proper enforcement of Construction Documents;
   3. Convene and chair project meetings and foreman's coordination meetings when necessary to coordinate resolution of conflicts between Contractors, Architects, Engineers, Consultants, and Department; and
   4. Check and inspect material, equipment and installation procedures of all trades for proper workmanship and for compliance with Drawings, Specifications and Shop Drawings, permit no material on project site that is not satisfactory and reject work not in compliance with Construction Documents.

35. ARCHITECT / ENGINEER'S AUTHORITY

A. Architect / Engineer is retained by, and is responsible to Department acting for County.

B. Architect / Engineer shall determine amount, quality, acceptability, and fitness of several kinds of work and materials that are provided under this Contract and shall decide all questions that may arise in relation to said work and construction thereof.

C. Architect / Engineer shall decide meaning and intent of any portion of Specifications and of any Drawings where they may be found obscure or be in dispute.

D. Architect / Engineer shall provide responsible observation of construction. Architect / Engineer has authority to stop the Work whenever such stoppage may be necessary to insure proper execution of Construction Documents.

E. Architect / Engineer shall be interpreter of conditions of Construction Documents and judge of its performance.

F. Within reasonable time, Architect / Engineer shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.

G. Architect / Engineer's decisions are subject to review by Public Works Project Manager.

36. STATED ALLOWANCES

A. Stated allowances enumerated in Instructions to Bidders shall cover net cost of materials or equipment, and all applicable taxes. Contractor's cost of delivery and unloading at site, handling costs on site, labor, installation costs, overhead, profit and any other incidental costs shall be included in Contractor's bid, but not as part of cash allowance.

B. Department will solicit at least two (2) bids on materials or equipment for which allowance is stated and select on basis of lowest qualified responsible bid. Contractor will then be

instructed to purchase "Allowed Materials". If actual price for purchasing "Allowed Materials", including taxes, is more or less than "Cash Allowance", Contract price shall be adjusted accordingly. Adjustment in Contract price shall not contain any cost items excluded from cash allowance.

37. ESTIMATES OF QUANTITIES

A. Whenever estimated quantities of work to be done and materials to be furnished under this Contract are shown in any of Construction Documents, they are given for use in comparing bids and right is especially reserved to increase or diminish them as they may be deemed reasonably necessary or desirable by Department to complete the Work included in this Contract, and cost for such increase or diminution shall be adjusted in manner provided for in General Conditions of Contract Article 18 entitled "Changes in the Work".

38. LANDS AND RIGHTS-OF-WAY

A. Prior to start of construction, County shall furnish all land and rights-of-way necessary for carrying out and completion of the Work to be performed under this Contract.

39. GENERAL GUARANTEE

A. Neither final certificate of payment nor any provision in Construction Documents nor partial or entire occupancy of premises by County shall constitute acceptance of work not done in accordance with Construction Documents or relieve Contractor of liability in respect to any expressed warranties or responsibility for faulty materials or workmanship.
   1. In no event shall making of any payment required by Contract constitute or be construed as waiver by County of any breach of covenants of Contract or waiver of any default of Contractor and making of any such payment by County while any such default or breach shall exist shall in no way impair or prejudice right of County with respect to recovery of damages or other remedy as result of such breach or default.

B. Contractor shall remedy and make good all defective workmanship and materials and pay for any damage to other work resulting there from, which appear within period of one (1) year from date of substantial completion, providing such defects are not clearly due to abuse or misuse by County. Department will give notice of observed defects with reasonable promptness.

C. Guarantee on work executed after certified date of substantial completion will begin on date when such work is inspected and approved by Architect / Engineer and Public Works Project Manager.

D. Where guarantees or warrantees are required in sections of Specifications for periods in excess of one (1) year, such longer terms shall apply; however, Contractor's Performance and Payment Bonds shall not apply to any guarantee or warranty period in excess of one (1) year.

40. CONFLICTING CONDITIONS

A. Any provision in any of Construction Documents which may be in conflict or inconsistent with any Articles in these General Conditions of Contract or Supplementary Conditions shall be void to extent of such conflict or inconsistency.

B. In case of ambiguity or conflict between Drawings and Specifications, Specifications shall govern.

C. Printed dimensions shall be followed in preference to measurements by scale. Large-scale drawings take precedence over small-scale drawings. Dimensions on Drawings and details are subject to field measurements of adjacent work.

41. NOTICE AND SERVICE THEREOF

A. Any notice to Contractor from Department relative to any part of this Contract shall be in writing and considered delivered and service thereof completed, when said notice is posted, by certified or registered mail, to Contractor at Contractor's last given address, or delivered in person to said Contractor, or Contractor's authorized representative on the Work.

42. PROTECTION OF LIVES AND HEALTH

A. In order to protect lives and health of Contractor's employees under Contract, Contractor shall comply with all pertinent provisions of Wisconsin Administrative Code, Rules of Department of Commerce, relating to Safety and Health.

B. Contractor alone shall be responsible for safety, efficiency and adequacy of Contractor's tools, equipment and methods, and for any damage that may result from their failure or their improper construction, maintenance or operation.

43. AFFIRMATIVE ACTION PROVISION AND MINORITY / WOMEN / DISADVANTAGED BUSINESS ENTERPRISES

A. Affirmative Action Provisions.
   1. During term of their Contract, Contractor agrees not to discriminate on basis of race, religion, color, sex, handicap, age, sexual preference, marital status, physical appearance, or national origin against any person, whether recipient of services (actual or potential), employee, or applicant for employment. Such equal opportunity shall include but not be limited to following: employment, upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation or level of service(s). Contractor agrees to post in conspicuous places, these affirmative action standards so as to be visible to all employees, service recipients and applicants for this paragraph. Listing of prohibited bases for discrimination shall no be construed to amend in any fashion state or federal law setting forth additional bases and exceptions shall be permitted only to extent allowable in state or federal law.
   2. Contractor is subject to this Article only if Contractor has ten (10) or more employees and receives $10,000.00 or more in annual aggregate contracts with County. Contractor shall file and Affirmative Action Plan with Dane County Contract Compliance Officer in accord with Chapter 19 of Dane County Code of Ordinances. Such plan must be filed within fifteen (15) days of effective date of this Contract and failure to do so by said date shall constitute ground for immediate termination of Contract by County. Contractor shall also, during term of this Contract, provide copies of all announcements of employment opportunities to County's Contract Compliance Office, and shall report annually number of persons, by race, sex and handicap status, who apply for employment, and, similarly classified, number hired and number rejected.
   3. Contact Dane County Contract Compliance Officer at Dane County Contract Compliance Office, 210 Martin Luther King, Jr. Blvd., Room 421, Madison, WI 53703, 608/266-4114.

4. In all solicitations for employment placed on Contractor's behalf during term of this Contract, Contractor shall include statement to affect Contractor is "Equal Opportunity Employer". Contractor agrees to furnish all information and reports required by County's Contract Compliance Officer as same relate to affirmative action and nondiscrimination, which may include any books, records, or accounts deemed appropriate to determine compliance with Chapter 19, Dane County Code of Ordinances, and provision of this Contract.

B. Minority / Women / Disadvantaged / Emerging Small Business Enterprises.
   1. Chapter 19.508 of Dane County Code of Ordinances is official policy of Dane County regarding utilization of, to fullest extent of, Minority Business Enterprises (MBEs), Women Business Enterprises (WBEs) Disadvantage Business Enterprises (DBEs) and Emerging Small Business Enterprises (ESBEs).
   2. Contractor may utilize MBEs / WBEs / DBEs / ESBEs as subcontractors or suppliers. List of subcontractors will be required of low bidder as stated in this Contract. List shall indicate which are MBEs / WBEs / DBEs / ESBEs and percentage of subcontract awarded, shown as percentage of total dollar amount of bid.

44. COMPLIANCE WITH FAIR LABOR STANDARDS

A. During term of this Contract, Contractor shall report to County Contract Compliance Officer, within ten (10) days, any allegations to, or findings by National Labor Relations Board (NLRB) or Wisconsin Employment Relations Commission (WERC) that Contractor has violated statute or regulation regarding labor standards or relations. If investigation by Contract Compliance Officer results in final determination that matter adversely affects Contractor's responsibilities under this Contract, and which recommends termination, suspension or cancellation of this Contract, County may take such action.

B. Contractor may appeal any adverse finding by Contract Compliance Officer as set forth in Dane County Ordinance 25.015(11)(c) through (e).

C. Contractor shall post this statement in prominent place visible to employees: "As condition of receiving and maintaining contract with Dane County, this employer shall comply with federal, state and all other applicable laws prohibiting retaliation or union organizing."

45. DOMESTIC PARTNERSHIP BENEFITS

A. Contractor agrees to provide same economic benefits to all of its employees with domestic partners as it does to employees with spouses, or cash equivalent if such benefit cannot reasonably be provided. Contractor agrees to make available for County inspection Contractor's payroll records relating to employees providing services on or under this Contract or subcontract. If any payroll records of Contractor contain any false, misleading or fraudulent information, or if Contractor fails to comply with provisions of Chapter 25.016, Dane County Ordinances, contract compliance officer may withhold payments on Contract; terminate, cancel or suspend Contract in whole or in part; or, after due process hearing, deny Contractor right to participate in bidding on future County contracts for period of one year after first violation is found and for period of three years after second or subsequent violation is found.

46. USE AND OCCUPANCY PRIOR TO ACCEPTANCE

A. Contractor agrees to use and occupancy of portion or unit of the Work before formal acceptance by Department, provided Department:
   1. Secures written consent of Contractor; except when in opinion of Public Works Project Manager, Contractor is chargeable with unwarranted delay in final cleanup of punch list items or other Contract requirements.
   2. Secures endorsement from insurance carrier and consent of Surety permitting occupancy of building or use of the Work during remaining period of construction, or, secures consent of Surety.
   3. Assumes all costs and maintenance of heat, electricity and water.
   4. Accepts all work completed within that portion or unit of the Work to be occupied, at time of occupancy.

47. MINIMUM WAGES

A. Contractor shall post, at appropriate conspicuous point on site of project, schedule showing all determined minimum wage rates for various classes of laborers and mechanics to be engaged in the Work under this Contract and all deductions, if any, required by law to be made from unpaid wages actually earned by laborers and mechanics so engaged.

B. Supplementary Conditions section in Construction Documents lists wage determinations required by State Law.

C. If, after award of Contract, it becomes necessary to employ any person in trade or occupation not classified in wage determinations, such person shall be paid at not less than such rate as shall be determined by Wisconsin Department of Workforce Development. Such approved minimum rate shall be retroactive to time of initial employment of such person in such trade or occupation. Contractor shall notify Department of Contractor's intention to employ persons in trades or occupations not so classified in sufficient time for Department to obtain approved rates for such trades or occupations.

D. Specified wage rates are minimum rates only, and Department will not consider any claims for additional compensation made by Contractor because of payment by Contractor of any wage rate in excess of applicable rate contained in this Contract. Contractor shall adjust any disputes in regard to payment of wages in excess of those specified in this Contract.

E. Submit required affidavit(s) to Department of Public Works, Highway & Transportation, as requested and with final application for payment for work under said contract. Affidavit(s) shall clearly indicate name, trade or occupation, and paid wages of every laborer, worker or mechanic employed by Contractor and all subcontractors during billing period including accurate record of number of hours worked by each employee and actual wages paid as stipulated in Wisconsin Statue 66.0903. If Wisconsin Prevailing Wage Rate Determination is required for this Work, use "Prime Contractor Affidavit of Compliance with Prevailing Wage Rate Determination" and "Agent or Subcontractor Affidavit of Compliance with Prevailing Wage Rate Determination" (if applicable). If Wisconsin Prevailing Wage Rate Determination is not required for this Work, use "Dane County, Wisconsin Contractor Wage Affidavit". Forms of such affidavits are included in Supplementary Conditions.

48. CLAIMS

A. No claim may be made until Department's Assistant Public Works Director has reviewed Architect / Engineer's decision as provided for in Article 35 of General Conditions of Contract. If any claim remains unresolved after such review by Department's Assistant Public Works Director the claim may be filed under Wisconsin Statute 893.80. Work shall progress during period of any dispute or claim. Unless specifically agreed between parties, venue will be in Dane County, Wisconsin.

49. ANTITRUST AGREEMENT

A. Contractor and County recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by County. Therefore, Contractor hereby assigns to County any and all claims for such overcharges as to goods and materials purchased in connection with this Contract, except as to overcharges which result from antitrust violations commencing after price is established under this Contract and any change order thereto.

50. INSURANCE

A. Contractor Carried Insurance:
   1. Contractor shall not commence work under this Contract until Contractor has obtained all insurance required under this Article and has provided evidence of such insurance to Risk Manager, 425 City-County Building, 210 Martin Luther King Jr. Blvd., Madison, WI 53703. Contractor shall not allow any subcontractor to commence work until insurance required of subcontractor has been so obtained and approved. Company providing insurance must be licensed to do business in Wisconsin.
   2. Worker's Compensation Insurance:
      a) Contractor shall procure and shall maintain during life of this Contract, Worker's Compensation Insurance as required by statute for all of Contractor's employees engaged in work at site of project under this Contract and, in case of any such work sublet, Contractor shall require subcontractor similarly to provide Worker's Compensation Insurance for all of latter's employees to be engaged in such work unless such employees are covered by protection afforded by Contractor's Worker's Compensation Insurance.
      b) If any claim of employees engaged in hazardous work on project under this Contract is not protected under Worker's Compensation Statute, Contractor shall provide and shall cause each subcontractor to provide adequate Employer's Liability Insurance for protection of such of Contractor's employees as are not otherwise protected.
   3. Contractor's Public Liability and Property Damage Insurance:
      a) Contractor shall procure and maintain during life of this Contract, Contractor's Public Liability Insurance and Contractor's Property Damage Insurance in amount not less than $1,000,000 bodily injury, including accidental death, to any one person, and subject to same limit for each person, in amount not less than $1,000,000 on account of one accident, and Contractor's Property Damage Insurance in amount not less then $1,000,000 or combined single limit of at least $1,000,000 with excess coverage over and above general liability in amount not less than $5,000,000. Contractor shall add "Dane County" as additional insured for each project.
      b) Contractor's Public Liability and Property Damage Insurance shall include Products, Completed Operation, and Contractual Liability under Insurance Contract. "Contractor shall in all instances save, defend, indemnify and hold harmless County and Architect / Engineer against all claims, demands, liabilities, damages or any other costs which may accrue in prosecution of the Work and that Contractor will save, defend, indemnify and hold harmless County and Architect / Engineer from all

damages caused by or as result of Contractor's operations" and each shall be listed as additional insured on Contractor's and sub-contractors' insurance policies.

c) Obligations of Contractor under Article 50.A.2.b) shall not extend to liability of Architect / Engineer, agents or employees thereof, arising out of:
   1) Preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or
   2) Giving of or failure to give directions or instructions by Architect / Engineer, agents or employees thereof provided such giving or failure to give is primary cause of injury or damage.

d) Contractor shall procure and shall maintain during life of this Contract, Comprehensive Automobile Liability Insurance covering owned, non-owned and hired automobiles for limits of not less than $1,000,000 each accident single limit, bodily injury and property damage combined with excess coverage over and above general liability in amount not less than $5,000,000.

e) Contractor shall either:
   1) Require each subcontractor to procure and to maintain during life of subcontract, subcontractor's Public Liability Property Damage Insurance, and Comprehensive Automobile Liability Insurance of type and in same amount specified in preceding paragraphs; or
   2) Insure activities of subcontractors in Contractor's own policy.

4. Scope of Insurance and Special Hazards: Insurance required under Article 50.A.2 & 50.A.3. hereof shall provide adequate protection for Contractor and subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operation be by insured or by anyone directly or indirectly employed by insured and also against any of special hazards which may be encountered in performance of this Contract as enumerated in Supplementary Conditions.
5. Proof of Carriage of Insurance: Contractor shall furnish Risk Manager with certificates showing type, amount, class of operations covered, effective dates, dates of expiration of policies and "Dane County" listed as additional insured. Such certificates shall also contain (substantially) following statement: "Insurance covered by this certificate will not be canceled or materially altered, except after ten (10) days written notice has been received by Risk Manager."

B. Builder's Risk:
   1. County shall provide Builder's Risk policy. Terms of this policy will be made available by County's Risk Manager, upon Contractor's request. By executing this Contract, Contractor warrants it is familiar with terms of said policy.

C. Indemnification / Hold Harmless:
   1. Contractor shall indemnify, hold harmless and defend Dane County, its boards, commissions, agencies, officers, employees and representatives from and against all claims, damages, losses and expenses including attorneys' fees arising out of or resulting from performance of the Work, provided that any such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself) including loss of use resulting therefrom, and is caused in whole or in part by any act or omission of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, regardless of whether or not it is caused in part by part indemnified hereunder.
   2. In any and all claims against Dane County, its boards, commissions, agencies, officers, employees and representatives or by any employee of Contractor, any subcontractor, anyone directly or indirectly employed by any of them or anyone for whose acts any of them may be liable, indemnification obligation under this Contract shall not be limited in any way by any limitation on amount or type of damages, compensation or benefits

payable by or for Contractor or any subcontractor under worker's compensation acts, disability benefits or other employee benefit acts.

3. Obligations of Contractor under this Contract shall not extend to liability of Architect / Engineer, its agents or employees arising out of:
   a) Preparation or approval of maps, drawings, opinion, reports, surveys, change orders, designs or specifications; or
   b) Giving of or failure to give directions or instruction by Architect / Engineer, its agents or employees provided such giving or failure to give is primary cause of injury or damage.
4. Dane County shall not be liable to Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

51. WISCONSIN LAW CONTROLLING

A. It is expressly understood and agreed to by parties hereto that in event of any disagreement or controversy between parties, Wisconsin law shall be controlling.

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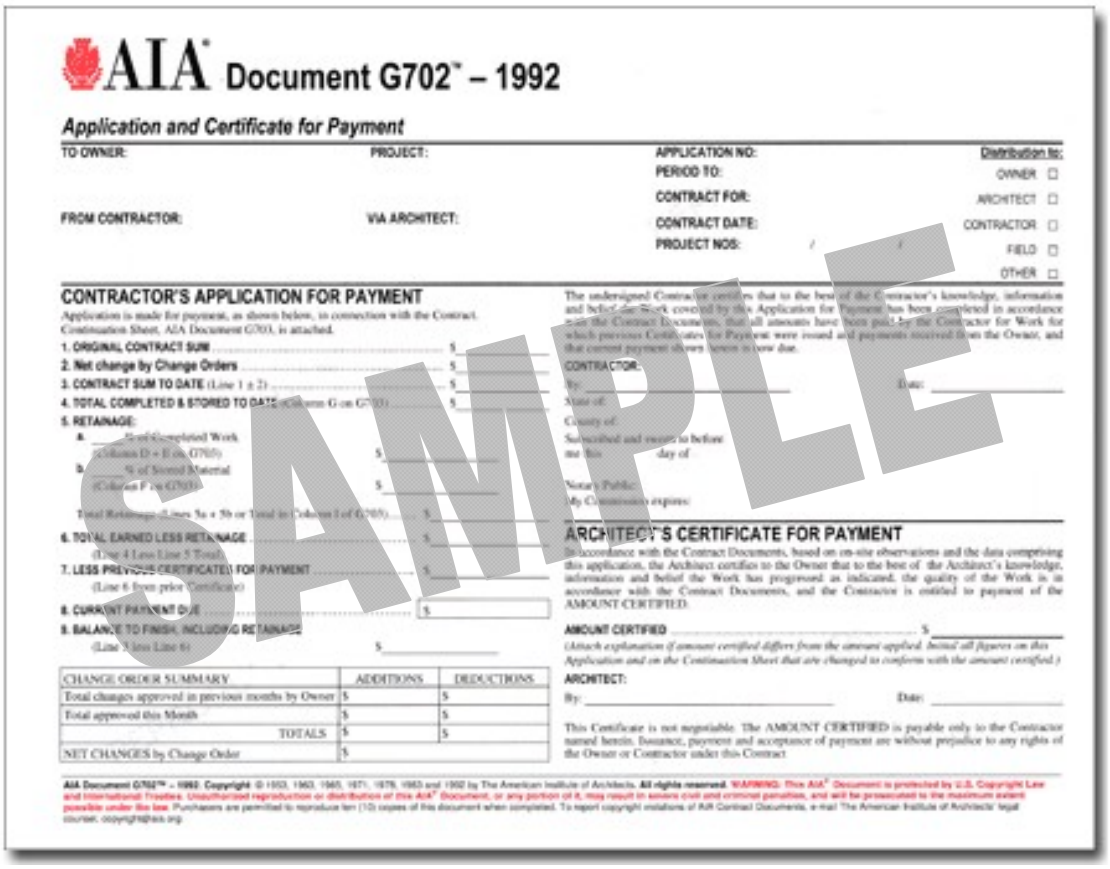
SUPPLEMENTARY CONDITIONS

1. APPLICATION & CERTIFICATE FOR PAYMENT

A. Every contractor engaged in performance of any contract for Department of Public Works, Highway & Transportation shall submit partial and final Application & Certificate for Payment for work under said contract. Form shall provide similar information as shown on AIA G702™ and G703™ forms (samples shown below). Forms shall be submitted to Architect / Public Works Project Manager for approval.



AIA Document G702™ – 1992

Application and Certificate for Payment

TO OWNER: PROJECT: APPLICATION NO: Distribution to:
PERIOD TO: OWNER ☐
CONTRACT FOR: ARCHITECT ☐
FROM CONTRACTOR: VIA ARCHITECT: CONTRACT DATE: CONTRACTOR ☐
PROJECT NOS: / / FIELD ☐
OTHER ☐

CONTRACTOR'S APPLICATION FOR PAYMENT

Application is made for payment, as shown below, in connection with the Contract.
Continuation Sheet, AIA Document G703, is attached.

1. ORIGINAL CONTRACT SUM ..... $
2. Net change by Change Orders ..... $
3. CONTRACT SUM TO DATE (Line 1 ± 2) ..... $
4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) ..... $
5. RETAINAGE:
   a. ____ % of Completed Work (Column D + E on G703) $
   b. ____ % of Stored Material (Column F on G703) $
   Total Retainage (Lines 5a + 5b or Total in Column I of G703) ..... $
6. TOTAL EARNED LESS RETAINAGE ..... $
   (Line 4 Less Line 5 Total)
7. LESS PREVIOUS CERTIFICATES FOR PAYMENT ..... $
   (Line 6 from prior Certificate)
8. CURRENT PAYMENT DUE ..... $
9. BALANCE TO FINISH, INCLUDING RETAINAGE
   (Line 3 less Line 6) $

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	$	$
Total approved this Month	$	$
TOTALS	$	$
NET CHANGES by Change Order	$	

The undersigned Contractor certifies that to the best of the Contractor's knowledge, information and belief the Work covered by this Application for Payment has been completed in accordance with the Contract Documents, that all amounts have been paid by the Contractor for Work for which previous Certificates for Payment were issued and payments received from the Owner, and that current payment shown herein is now due.

CONTRACTOR:
By: Date:
State of:
County of:
Subscribed and sworn to before me this day of
Notary Public:
My Commission expires:

ARCHITECT'S CERTIFICATE FOR PAYMENT

In accordance with the Contract Documents, based on on-site observations and the data comprising this application, the Architect certifies to the Owner that to the best of the Architect's knowledge, information and belief the Work has progressed as indicated, the quality of the Work is in accordance with the Contract Documents, and the Contractor is entitled to payment of the AMOUNT CERTIFIED.

AMOUNT CERTIFIED ..... $
(Attach explanation if amount certified differs from the amount applied. Initial all figures on this Application and on the Continuation Sheet that are changed to conform with the amount certified.)

ARCHITECT:
By: Date:

This Certificate is not negotiable. The AMOUNT CERTIFIED is payable only to the Contractor named herein. Issuance, payment and acceptance of payment are without prejudice to any rights of the Owner or Contractor under this Contract.

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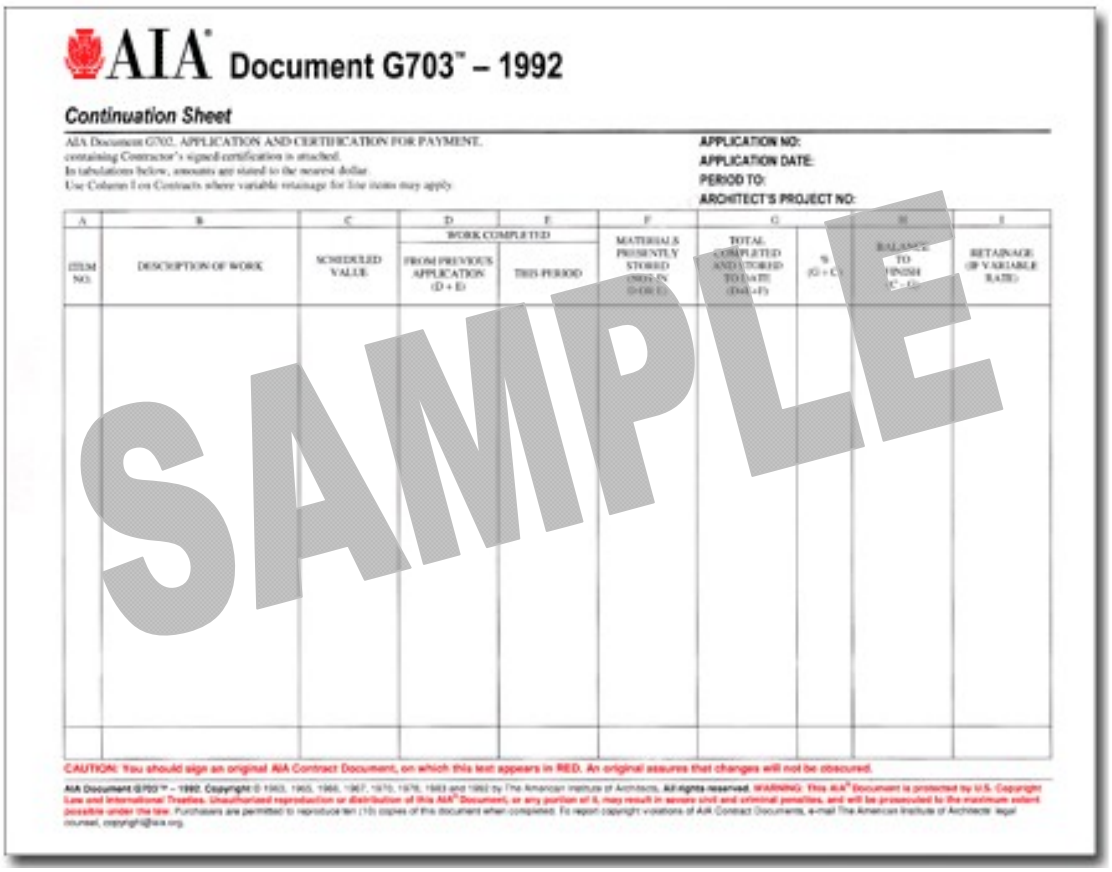
SAMPLE



AIA Document G703™ – 1992

Continuation Sheet

AIA Document G702, APPLICATION AND CERTIFICATION FOR PAYMENT, containing Contractor's signed certification is attached.
In tabulations below, amounts are stated to the nearest dollar.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:
APPLICATION DATE:
PERIOD TO:
ARCHITECT'S PROJECT NO:

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED: FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED: THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D+E+F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)

SAMPLE

CAUTION: You should sign an original AIA Contract Document, on which this text appears in RED. An original assures that changes will not be obscured.

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2. PREVAILING WAGE RATE DETERMINATION

A. These supplements shall modify, delete, and / or add to General Conditions of Contract. Where any article, paragraph, or subparagraph in General Conditions of Contract is supplemented by one of these paragraphs, provisions of such article, paragraph, or subparagraph shall remain in effect and supplementary provisions shall be considered as added thereto. Where any article, paragraph, or subparagraph in General Conditions of Contract is amended, voided, or superseded by any of these paragraphs, provisions of such article, paragraph, or subparagraph not so amended, voided, or superseded shall remain in effect.
   1. General Conditions of Contract Article 47, "Minimum Wages", paragraph B. Following Prevailing Wage Rate Determination No. 201501957 is added to General Conditions of Contract.

B. These State of Wisconsin forms, hereinafter set forth in this section, shall be filled out and submitted to Department of Public Works, Highway & Transportation:
   1. Disclosure of Ownership (ERD-7777)
   2. Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-5724)
   3. List of Agents and Subcontractors (Page 2 - ERD-5724)
   4. Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination (ERD-10584)
   5. List of Agents and Subcontractors (Page 2 - ERD-10584)
   6. Request To Employ Subjourneyperson (ERD-10880)

PREVAILING WAGE RATE DETERMINATION
Issued by the State of Wisconsin
Department of Workforce Development
Pursuant to s. 66.0903, Wis. Stats.
Issued On: 6/16/2015

DETERMINATION NUMBER: 201501957

EXPIRATION DATE: Prime Contracts MUST Be Awarded or Negotiated On Or Before 12/31/2015. If NOT, You MUST Reapply.

PROJECT NAME: NORTHPORT NURSES DORM DECONSTRUCTION

PROJECT NO: 315035

PROJECT LOCATION: MADISON CITY, DANE COUNTY, WI

CONTRACTING AGENCY: DANE COUNTY PUBLIC WORKS

CLASSIFICATION:	Contractors are responsible for correctly classifying their workers. Either call the Department of Workforce Development (DWD) with trade or classification questions or consult DWD's Dictionary of Occupational Classifications & Work Descriptions on the DWD website at: dwd.wisconsin.gov/er/prevailing_wage_rate/Dictionary/dictionary_main.htm.
OVERTIME:	Time and one-half must be paid for all hours worked: - over 10 hours per day on prevailing wage projects - over 40 hours per calendar week - Saturday and Sunday - on all of the following holidays: January 1; the last Monday in May; July 4; the 1st Monday in September; the 4th Thursday in November; December 25; - The day before if January 1, July 4 or December 25 falls on a Saturday; - The day following if January 1, July 4 or December 25 falls on a Sunday. Apply the time and one-half overtime calculation to whichever is higher between the Hourly Basic Rate listed on this project determination or the employee's regular hourly rate of pay. Add any applicable Premium or DOT Premium to the Hourly Basic Rate before calculating overtime. A DOT Premium (discussed below) may supersede this time and one-half requirement.
FUTURE INCREASE:	When a specific trade or occupation requires a future increase, you MUST add the full hourly increase to the "TOTAL" on the effective date(s) indicated for the specific trade or occupation.
PREMIUM PAY:	If indicated for a specific trade or occupation, the full amount of such pay MUST be added to the "HOURLY BASIC RATE OF PAY" indicated for such trade or occupation, whevenever such pay is applicable.
DOT PREMIUM:	This premium only applies to highway and bridge projects owned by the Wisconsin Department of Transportation and to the project type heading "Airport Pavement or State Highway Construction." DO NOT apply the premium calculation under any other project type on this determination.
APPRENTICES:	Pay apprentices a percentage of the applicable journeyperson's hourly basic rate of pay and hourly fringe benefit contributions specified in this determination. Obtain the appropriate percentage from each apprentice's contract or indenture.
SUBJOURNEY:	Subjourney wage rates may be available for some of the trades or occupations indicated below with the exception of laborers, truck drivers and heavy equipment operators. Any employer interested in using a subjourney classification on this project MUST complete Form ERD-10880 and request the applicable wage rate from the Department of Workforce Development PRIOR to using the subjourney worker on this project.

This document **MUST BE POSTED** by the **CONTRACTING AGENCY** in at least one conspicuous and easily accessible place **on the site of the project** . A local governmental unit may post this document at the place normally used to post public notices if there is no common site on the project. This document **MUST** remain posted during the entire time any worker is employed on the project and **MUST** be physically incorporated into the specifications and all contracts and subcontracts. If you have any questions, please write to the Equal Rights Division, Labor Standards Bureau, P.O. Box 8928, Madison, Wisconsin 53708 or call (608) 266-6861.

The following statutory provisions apply to local governmental unit projects of public works and are set forth below pursuant to the requirements of s. 66.0903(8), Stats.

s. 66.0903 (1) (f) & s. 103.49 (1) (c) "PREVAILING HOURS OF LABOR" for any trade or occupation in any area means 10 hours per day and 40 hours per week and may not include any hours worked on a Saturday or Sunday or on any of the following holidays:

1. January 1.
2. The last Monday in May.
3. July 4.
4. The first Monday in September.
5. The 4th Thursday in November.
6. December 25.
7. The day before if January 1, July 4 or December 25 falls on a Saturday.
8. The day following if January 1, July 4 or December 25 falls on a Sunday.

s. 66.0903 (10) RECORDS; INSPECTION; ENFORCEMENT.
(a) Each contractor, subcontractor, or contractor's or subcontractor's agent performing work on a project of public works that is subject to this section shall keep full and accurate records clearly indicating the name and trade or occupation of every person performing the work described in sub. (4) and an accurate record of the number of hours worked by each of those persons and the actual wages paid for the hours worked.

s. 66.0903 (11) LIABILITY AND PENALTIES.
(a) 1. Any contractor, subcontractor, or contractor's or subcontractor's agent who fails to pay the prevailing wage rate determined by the department under sub. (3) or who pays less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor is liable to any affected employee in the amount of his or her unpaid wages or his or her unpaid overtime compensation and in an additional amount as liquidated damages as provided under subd. 2., 3., whichever is applicable.
2. If the department determines upon inspection under sub. (10) (b) or (c) that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the department shall order the contractor to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages within a period specified by the department in the order.
3. In addition to or in lieu of recovering the liability specified in subd. 1. as provided in subd. 2., any employee for and in behalf of that employee and other employees similarly situated may commence an action to recover that liability in any court of competent jurisdiction. If the court finds that a contractor, subcontractor, or contractor's or subcontractor's agent has failed to pay the prevailing wage rate determined by the department under sub. (3) or has paid less than 1.5 times the hourly basic rate of pay for all hours worked in excess of the prevailing hours of labor, the court shall order the contractor, subcontractor, or agent to pay to any affected employee the amount of his or her unpaid wages or his or her unpaid overtime compensation and an additional amount equal to 100 percent of the amount of those unpaid wages or that unpaid overtime compensation as liquidated damages.
5. No employee may be a party plaintiff to an action under subd. 3. unless the employee consents in writing to become a party and the consent is filed in the court in which the action is brought. Notwithstanding s. 814.04 (1), the court shall, in addition to any judgment awarded to the plaintiff, allow reasonable attorney fees and costs to be paid by the defendant.

BUILDING OR HEAVY CONSTRUCTION

Includes sheltered enclosures with walk-in access for the purpose of housing persons, employees, machinery, equipment or supplies and non-sheltered work such as canals, dams, dikes, reservoirs, storage tanks, etc. A sheltered enclosure need not be "habitable" in order to be considered a building. The installation of machinery and/or equipment, both above and below grade level, does not change a project's character as a building. On-site grading, utility work and landscaping are included within this definition. Residential buildings of four (4) stories or less, agricultural buildings, parking lots and driveways are NOT included within this definition.

SKILLED TRADES

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
101	Acoustic Ceiling Tile Installer Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016.	32.72	16.00	48.72
102	Boilermaker Future Increase(s): Add $1.50/hr. on 01/01/2016	33.35	28.24	61.59
103	Bricklayer, Blocklayer or Stonemason Future Increase(s): Add $1.40 on 06/01/2015; Add $1.45 on 06/06/2016 Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.82	18.66	51.48
104	Cabinet Installer Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016.	32.72	16.00	48.72
105	Carpenter Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.72	16.00	48.72
106	Carpet Layer or Soft Floor Coverer Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016.	32.72	16.00	48.72
107	Cement Finisher	31.98	12.04	44.02
108	Drywall Taper or Finisher	26.05	18.23	44.28
109	Electrician Future Increase(s): Add $1.20/hr on 6/1/15; Add $1.25/hr on 6/1/16. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	34.82	19.67	54.49
110	Elevator Constructor	43.84	27.09	70.93

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
111	Fence Erector	18.00	6.09	24.09
112	Fire Sprinkler Fitter	36.79	18.81	55.60
113	Glazier Future Increase(s): Add $.75/hr eff. 06/01/2015; Add $.90/hr eff. 06/01/2016	37.07	14.42	51.49
114	Heat or Frost Insulator	33.43	25.81	59.24
115	Insulator (Batt or Blown) Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016.	32.72	16.00	48.72
116	Ironworker	31.50	20.01	51.51
117	Lather	31.40	15.90	47.30
118	Line Constructor (Electrical)	39.50	17.73	57.23
119	Marble Finisher	16.25	2.32	18.57
120	Marble Mason	32.09	18.04	50.13
121	Metal Building Erector	19.05	8.08	27.13
122	Millwright Future Increase(s): Add $1.47/hr on 6/1/2015; Add $1.47/hr on 6/1/2016.	34.44	16.07	50.51
123	Overhead Door Installer	27.46	1.98	29.44
124	Painter	25.75	16.60	42.35
125	Pavement Marking Operator	30.10	17.34	47.44
126	Piledriver Future Increase(s): Add $1.50/hr on 6/1/2015; Add $1.60/hr on 6/1/2016. Premium Increase(s): Add $.65/hr for Piledriver Loftsman; Add $.75/hr for Sheet Piling Loftsman. DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	30.11	26.51	56.62
127	Pipeline Fuser or Welder (Gas or Utility)	30.83	20.89	51.72
129	Plasterer Future Increase(s): Add $1.56 on 06/01/2015; Add $1.61 on 06/01/2016; Add$1.66 on 06/01/2017	32.65	19.36	52.01
130	Plumber Future Increase(s): Add $1.80 on 6/1/15	37.57	17.47	55.04

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
132	Refrigeration Mechanic Future Increase(s): Add $1.80 on 6/1/15	44.20	18.26	62.46
133	Roofer or Waterproofer	29.40	11.31	40.71
134	Sheet Metal Worker	34.45	22.54	56.99
135	Steamfitter Future Increase(s): Add $1.80/hr on 6/1/15.	44.20	18.26	62.46
137	Teledata Technician or Installer Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	22.50	12.74	35.24
138	Temperature Control Installer	42.95	15.04	57.99
139	Terrazzo Finisher	16.25	2.32	18.57
140	Terrazzo Mechanic	31.18	17.35	48.53
141	Tile Finisher	23.85	17.18	41.03
142	Tile Setter	29.81	17.18	46.99
143	Tuckpointer, Caulker or Cleaner	23.60	7.10	30.70
144	Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30
146	Well Driller or Pump Installer	25.32	15.65	40.97
147	Siding Installer	36.17	19.44	55.61
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	30.16	15.11	45.27
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	26.76	58.36
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	14.49	42.14
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.83	15.01	42.84
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.90	9.83	31.73

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle	32.89	18.96	51.85
203	Three or More Axle	18.00	21.99	39.99

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	18.00	21.99	39.99

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Future Increase(s): Add $1.35/hr eff. 06/01/2015; Add $1.25/hr eff. 06/06/2016 Premium Increase(s): Add $1.00/hr for certified welder; Add $.25/hr for mason tender	24.97	15.12	40.09
302	Asbestos Abatement Worker	18.00	9.58	27.58
303	Landscaper	18.75	10.26	29.01
310	Gas or Utility Pipeline Laborer (Other Than Sewer and Water)	21.55	14.14	35.69
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased) Premium Increase(s): DOT PREMIUMS: Pay two times the hourly basic rate on New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	18.82	14.16	32.98
314	Railroad Track Laborer	14.50	5.29	19.79
315	Final Construction Clean-Up Worker Future Increase(s): Add $1.35/hr eff. 06/01/2015; Add $1.25/hr eff. 06/06/2016	24.97	15.12	40.09

HEAVY EQUIPMENT OPERATORS
SITE PREPARATION, UTILITY OR LANDSCAPING WORK ONLY

Fringe Benefits Must Be Paid On All Hours Worked

CODE	TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
501	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Milling Machine; Boring Machine (Directional, Horizontal or Vertical); Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Backhoe (Track Type) Having a Mfgr's Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Crane, Shovel, Dragline, Clamshells; Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Grader or Motor Patrol; Master Mechanic; Mechanic or Welder; Robotic Tool Carrier (With or Without Attachments); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Tractor (Scraper, Dozer, Pusher, Loader); Trencher (Wheel Type or Chain Type Having Over 8 Inch Bucket). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47
502	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Environmental Burner; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Jeep Digger; Screed (Milling Machine); Skid Rig; Straddle Carrier or Travel Lift; Stump Chipper; Trencher (Wheel Type or Chain Type Having 8 Inch Bucket & Under). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47
503	Air Compressor (&/or 400 CFM or Over); Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Forklift; Generator (&/or 150 KW or Over); Greaser; High Pressure Utility Locating Machine (Daylighting Machine); Mulcher; Oiler; Post Hole Digger or Driver; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	31.62	19.78	51.40
504	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
505	Work Performed on the Great Lakes Including Crane or Backhoe Operator; Assistant Hydraulic Dredge Engineer; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder; 70 Ton & Over Tug Operator. Premium Increase(s): Add $.50/hr for Friction Crane, Lattice Boom or Crane Certification (CCO).	41.65	21.71	63.36

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
506	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	35.72	17.85	53.57
507	Work Performed on the Great Lakes Including Deck Equipment Operator, Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	35.46	20.40	55.86

HEAVY EQUIPMENT OPERATORS
EXCLUDING SITE PREPARATION, UTILITY, PAVING LANDSCAPING WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
508	Boring Machine (Directional); Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016. Premium Increase(s): Add $.50/hr for >200 Ton; Add $1/hr at 300 Ton; Add $1.50/hr at 400 Ton; Add $2/hr at 500 Ton & Over.	36.67	19.78	56.45
509	Backhoe (Track Type) Having a Mfgr's Rated Capacity of 130,000 Lbs. or Over; Boring Machine (Horizontal or Vertical); Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With A Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Pile Driver; Versi Lifts, Tri-Lifts & Gantrys (20,000 Lbs. & Over). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016. Premium Increase(s): Add $.25/hr for all >45 Ton lifting capacity cranes.	35.42	19.78	55.20
510	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Dredge (NOT Performing Work on the Great Lakes); Forklift (Machinery Moving or Steel Erection, 25 Ft & Over); Gradall (Cruz-Aire Type); Hydro-Blaster (10,000 PSI or Over); Milling Machine; Skid Rig; Traveling Crane (Bridge Type). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	34.22	19.78	54.00

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
511	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Bulldozer or Endloader (Over 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Environmental Burner; Gantrys (Under 20,000 Lbs.); Grader or Motor Patrol; High Pressure Utility Locating Machine (Daylighting Machine); Manhoist; Material or Stack Hoist; Mechanic or Welder; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tining or Curing Machine; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47
512	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Grout Pump; Hoist (Tugger, Automatic); Industrial Locomotives; Jeep Digger; Lift Slab Machine; Mulcher; Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames. Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	31.62	19.78	51.40
513	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Boatmen (NOT Performing Work on the Great Lakes); Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Elevator; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Forklift; Generator (&/or 150 KW or Over); Greaser; Heaters (Mechanical); Loading Machine (Conveyor); Oiler; Post Hole Digger or Driver; Prestress Machine; Pump (3 Inch or Over) or Well Points; Refrigeration Plant or Freeze Machine; Robotic Tool Carrier (With or Without Attachments); Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	30.99	19.78	50.77
514	Gas or Utility Pipeline, Except Sewer & Water (Primary Equipment). Future Increase(s): Add $1/hr on 6/1/2015; Add $1/hr on 5/30/2016.	36.34	22.14	58.48
515	Gas or Utility Pipeline, Except Sewer & Water (Secondary Equipment). Future Increase(s): Add $1.65/hr on 6/1/2015.	33.12	19.35	52.47
516	Fiber Optic Cable Equipment	28.89	17.95	46.84

SEWER, WATER OR TUNNEL CONSTRUCTION

Includes those projects that primarily involve public sewer or water distribution, transmission or collection systems and related tunnel work (excluding buildings).

SKILLED TRADES

CODE	TRADE OR OCCUPATION Fringe Benefits Must Be Paid On All Hours Worked	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	32.09	18.04	50.13
105	Carpenter Future Increase(s): Add $1.50/hr on 6/1/2015; Add $1.65/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	34.13	20.61	54.74
107	Cement Finisher Future Increase(s): Add $1.87 on 6/1/15; Add $1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	35.18	16.78	51.96
109	Electrician Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year’s Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	33.93	22.77	56.70
111	Fence Erector	18.00	6.09	24.09
116	Ironworker	31.50	20.01	51.51
118	Line Constructor (Electrical)	39.50	17.73	57.23
125	Pavement Marking Operator	30.10	17.34	47.44
126	Piledriver	29.56	25.71	55.27
130	Plumber	21.50	0.00	21.50
135	Steamfitter	42.95	17.81	60.76
137	Teledata Technician or Installer	22.25	12.24	34.49
143	Tuckpointer, Caulker or Cleaner	23.60	7.10	30.70
144	Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
146	Well Driller or Pump Installer	25.32	15.65	40.97
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.55	15.57	51.12
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	15.19	46.79
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	13.28	38.96
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	25.18	18.31	43.49
203	Three or More Axle	19.50	4.97	24.47
204	Articulated, Euclid, Dumptor, Off Road Material Hauler	32.89	18.96	51.85
205	Pavement Marking Vehicle	20.85	11.02	31.87
207	Truck Mechanic	19.50	4.97	24.47

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer Future Increase(s): Add $1.35/hr eff. 06/01/2015; Add $1.25/hr eff. 06/06/2016 Premium Increase(s): Add $.20 for blaster, bracer, manhole builder, caulker, bottomman and power tool; Add $.55 for pipelayer; Add $1.00 for tunnel work 0-15 lbs. compressed air; Add $2.00 for over 15-30 lbs. compressed air; Add $3.00 for over 30 lbs. compressed air.	26.34	15.13	41.47
303	Landscaper	39.43	0.00	39.43

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
304	Flagperson or Traffic Control Person	31.95	0.00	31.95
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.33	13.65	31.98
314	Railroad Track Laborer	14.50	5.29	19.79

HEAVY EQUIPMENT OPERATORS
SEWER, WATER OR TUNNEL WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
521	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Master Mechanic; Pile Driver. Future Increase(s): Add $1.55/hr on 6/1/2015. Premium Increase(s): Add $.25/hr for operating tower crane.	37.24	20.10	57.34
522	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump (Over 46 Meter), Concrete Conveyor (Rotec or Bidwell Type); Concrete Spreader & Distributor; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Dredge (NOT Performing Work on the Great Lakes); Milling Machine; Skid Rig; Telehandler; Traveling Crane (Bridge Type). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	34.22	19.78	54.00
523	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Boring Machine (Horizontal or Vertical); Bulldozer or Endloader (Over 40 hp); Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Concrete Pump (46 Meter & Under), Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Manhoist; Material or Stack Hoist; Mechanic or Welder; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yd or More Capacity; Screed (Milling Machine); Sideboom; Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Tractor or Truck Mounted Hydraulic Crane (10 Tons or Under); Trencher (Wheel Type or Chain Type Having Over 8-Inch Bucket). Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
524	Backfiller; Broom or Sweeper; Bulldozer or Endloader (Under 40 hp); Compactor (Self-Propelled 85 Ft Total Drum Width & Over, or Tractor Mounted, Towed & Light Equipment); Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Finishing Machine (Road Type); Environmental Burner; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Hoist (Tugger, Automatic); Grout Pump; Jeep Digger; Lift Slab Machine; Mulcher; Power Subgrader; Pump (3 Inch or Over) or Well Points; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Screw or Gypsum Pumps; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Stump Chipper; Tining or Curing Machine; Trencher (Wheel Type or Chain Type Having 8-Inch Bucket & Under); Winches & A-Frames.	30.82	18.96	49.78
525	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Compactor (Self-Propelled 84 Ft Total Drum Width & Under, or Tractor Mounted, Towed & Light Equipment); Crusher, Screening or Wash Plant; Farm or Industrial Type Tractor; Fireman (Asphalt Plant NOT Performing Work on the Great Lakes); Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Loading Machine (Conveyor); Post Hole Digger or Driver; Refrigeration Plant or Freeze Machine; Rock, Stone Breaker; Skid Steer Loader (With or Without Attachments); Vibratory Hammer or Extractor, Power Pack.	30.69	18.46	49.15
526	Boiler (Temporary Heat); Forklift; Greaser; Oiler.	30.19	18.96	49.15
527	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
528	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	41.65	21.71	63.36
529	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or More); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	35.72	17.85	53.57
530	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under), Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	35.46	20.40	55.86

LOCAL STREET OR MISCELLANEOUS PAVING CONSTRUCTION

Includes roads, streets, alleys, trails, bridges, paths, racetracks, parking lots and driveways (except residential or agricultural), public sidewalks or other similar projects (excluding projects awarded by the Wisconsin Department of Transportation).

SKILLED TRADES

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
103	Bricklayer, Blocklayer or Stonemason	32.09	18.04	50.13
105	Carpenter Future Increase(s): Add $1.42/hr on 6/1/2015; Add $1.42/hr on 6/1/2016. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	32.72	16.00	48.72
107	Cement Finisher Future Increase(s): Add $1.87 on 6/1/15; Add $1.75 on 6/1/16. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.40/hr when the Wisconsin Department of Transportation or responsible governing agency requires that work be performed at night under artificial illumination with traffic control and the work is completed after sunset and before sunrise.	35.18	16.78	51.96
109	Electrician	35.72	19.17	54.89
111	Fence Erector	18.00	6.09	24.09
116	Ironworker	31.50	20.01	51.51
118	Line Constructor (Electrical)	39.50	17.73	57.23
124	Painter	25.75	16.60	42.35
125	Pavement Marking Operator	30.10	17.34	47.44
126	Piledriver	29.56	25.71	55.27
133	Roofer or Waterproofer	29.40	11.31	40.71
137	Teledata Technician or Installer	22.25	12.24	34.49
143	Tuckpointer, Caulker or Cleaner	23.60	7.10	30.70
144	Underwater Diver (Except on Great Lakes)	35.40	15.90	51.30
150	Heavy Equipment Operator - ELECTRICAL LINE CONSTRUCTION ONLY	35.55	15.57	51.12

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
151	Light Equipment Operator -ELECTRICAL LINE CONSTRUCTION ONLY	31.60	15.19	46.79
152	Heavy Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	27.65	13.44	41.09
153	Light Truck Driver - ELECTRICAL LINE CONSTRUCTION ONLY	25.68	13.28	38.96
154	Groundman - ELECTRICAL LINE CONSTRUCTION ONLY	21.75	12.97	34.72

TRUCK DRIVERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
201	Single Axle or Two Axle Future Increase(s): Add $1.15/hr on 6/1/2015. Premium Increase(s): DOT PREMIUM: Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day.	25.18	18.31	43.49
203	Three or More Axle	16.00	0.00	16.00
204	Articulated, Euclid, Dumptor, Off Road Material Hauler Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47
205	Pavement Marking Vehicle	20.85	11.02	31.87
206	Shadow or Pilot Vehicle	24.37	17.77	42.14
207	Truck Mechanic	16.00	0.00	16.00

LABORERS

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
301	General Laborer	29.32	12.44	41.76
303	Landscaper Future Increase(s): Add $1.05/hr eff. 06/01/2015; Add $1.00/hr eff. 06/01/2016; Add $1.00/hr eff. 06/01/2017 Premium Increase(s):	30.13	15.14	45.27

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
	DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.25/hr for work on projects involving temporary traffic control setup, for lane and shoulder closures, when work under artificial illumination conditions is necessary as required by the project provisions (including prep time prior to and/or cleanup after such time period).			
304	Flagperson or Traffic Control Person	19.06	14.29	33.35
311	Fiber Optic Laborer (Outside, Other Than Concrete Encased)	18.33	13.65	31.98
314	Railroad Track Laborer	14.50	5.29	19.79

HEAVY EQUIPMENT OPERATORS
CONCRETE PAVEMENT OR BRIDGE WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
541	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self-Erecting Tower Crane With a Lifting Capacity Of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm.	37.72	21.15	58.87

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
542	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity of 4,000 Lbs. & Under; Crane, Tower Crane Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm.	37.22	21.15	58.37
543	Air Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Automatic Subgrader (Concrete); Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Boring Machine (Directional, Horizontal or Vertical); Bridge (Bidwell) Paver; Bulldozer or Endloader; Concrete Batch Plant, Batch Hopper; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Bump Cutter, Grinder, Planing or Grooving Machine; Concrete Conveyor System; Concrete Laser/Screed; Concrete Paver (Slipform); Concrete Pump, Concrete Conveyor (Rotec or Bidwell Type); Concrete Slipform Placer Curb & Gutter Machine; Concrete Spreader & Distributor; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Grout Pump; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Straddle Carrier or Travel Lift; Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames.	35.72	17.85	53.57

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
544	Backfiller; Belting, Burlap, Texturing Machine; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (WIth or Without Attachments); Self Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler; Tining or Curing Machine. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm.	36.46	21.15	57.61
545	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Concrete Proportioning Plant; Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack.	35.17	20.40	55.57
546	Fiber Optic Cable Equipment.	28.89	17.95	46.84
547	Work Performed on the Great Lakes Including Diver; Wet Tender or Hydraulic Dredge Engineer.	41.65	21.71	63.36
548	Work Performed on the Great Lakes Including 70 Ton & Over Tug Operator; Assistant Hydraulic Dredge Engineer; Crane or Backhoe Operator; Hydraulic Dredge Leverman or Diver's Tender; Mechanic or Welder.	41.65	21.71	63.36
549	Work Performed on the Great Lakes Including Deck Equipment Operator or Machineryman (Maintains Cranes Over 50 Tons or Backhoes 115,000 Lbs. or more); Tug, Launch or Loader, Dozer or Like Equipment When Operated on a Barge, Breakwater Wall, Slip, Dock or Scow, Deck Machinery.	35.72	17.85	53.57
550	Work Performed on the Great Lakes Including Deck Equipment Operator; Machineryman or Fireman (Operates 4 Units or More or Maintains Cranes 50 Tons or Under or Backhoes 115,000 Lbs. or Under); Deck Hand, Deck Engineer or Assistant Tug Operator; Off Road Trucks - Great Lakes ONLY.	35.46	20.40	55.86

HEAVY EQUIPMENT OPERATORS
ASPHALT PAVEMENT OR OTHER WORK

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
551	Crane, Tower Crane, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of Over 100 Tons, Self Erecting Tower Crane With a Lifting Capacity of Over 4,000 Lbs., Crane With Boom Dollies; Crane, Tower Crane, Pedestal Tower or Derrick, With Boom, Leads and/or Jib Lengths Measuring 176 Ft or Over; Master Mechanic.	36.72	20.40	57.12
552	Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of 130,000 Lbs. or Over; Caisson Rig; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With or Without Attachments, With a Lifting Capacity of 100 Tons or Under, Self-Erecting Tower Crane With a Lifting Capacity Of 4,000 Lbs. & Under; Crane, Tower Crane, Portable Tower, Pedestal Tower or Derrick, With Boom, Leads &/or Jib Lengths Measuring 175 Ft or Under; Dredge (NOT Performing Work on the Great Lakes); Licensed Boat Pilot (NOT Performing Work on the Great Lakes); Pile Driver. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm.	37.22	21.15	58.37
553	Air, Track, Rotary or Percussion Drilling Machine &/or Hammers, Blaster; Asphalt Heater, Planer & Scarifier; Asphalt Milling Machine; Asphalt Screed; Backhoe (Track Type) Having a Mfgr.'s Rated Capacity of Under 130,000 Lbs., Backhoe (Mini, 15,000 Lbs. & Under); Bituminous (Asphalt) Plant & Paver, Screed; Boring Machine (Directional, Horizontal or Vertical); Bulldozer or Endloader; Concrete Breaker (Large, Auto, Vibratory/Sonic, Manual or Remote); Concrete Conveyor System; Concrete Laser/Screed; Concrete Slipform Placer Curb & Gutter Machine; Crane (Carry Deck, Mini) or Truck Mounted Hydraulic Crane (10 Tons or Under); Crane With a Lifting Capacity of 25 Tons or Under; Forestry Equipment, Timbco, Tree Shear, Tub Grinder, Processor; Gradall (Cruz-Aire Type); Grader or Motor Patrol; Hydro-Blaster (10,000 PSI or Over); Loading Machine (Conveyor); Manhoist; Material or Stack Hoist; Mechanic or Welder; Milling Machine; Post Hole Digger or Driver; Railroad Track Rail Leveling Machine, Tie Placer, Extractor, Tamper, Stone Leveler or Rehabilitation Equipment; Roller (Over 5 Ton); Scraper (Self Propelled or Tractor Drawn) 5 cu yds or More Capacity; Shoulder Widener; Sideboom; Skid Rig; Stabilizing or Concrete Mixer (Self-Propelled or 14S or Over); Tractor (Scraper, Dozer, Pusher, Loader); Tractor or Truck Mounted Hydraulic Backhoe; Trencher (Wheel Type or Chain Type); Tube Finisher; Tugger (NOT Performing Work on the Great Lakes); Winches & A-Frames. Future Increase(s): Add $1.60/hr on 6/2/2015; Add $1.60/hr on 6/3/2016.	33.69	19.78	53.47

CODE	Fringe Benefits Must Be Paid On All Hours Worked TRADE OR OCCUPATION	HOURLY BASIC RATE OF PAY $	HOURLY FRINGE BENEFITS $	TOTAL $
554	Backfiller; Broom or Sweeper; Compactor (Self-Propelled or Tractor Mounted, Towed & Light Equipment); Concrete Finishing Machine (Road Type); Environmental Burner; Farm or Industrial Type Tractor; Fireman (Asphalt Plant, Pile Driver & Derrick NOT Performing Work on the Great Lakes); Forklift; Greaser; Hoist (Tugger, Automatic); Jeep Digger; Joint Sawer (Multiple Blade); Launch (NOT Performing Work on the Great Lakes); Lift Slab Machine; Mechanical Float; Mulcher; Power Subgrader; Robotic Tool Carrier (With or Without Attachments); Roller (Rubber Tire, 5 Ton or Under); Self-Propelled Chip Spreader; Shouldering Machine; Skid Steer Loader (With or Without Attachments); Telehandler. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017.	36.17	20.80	56.97
555	Air Compressor (&/or 400 CFM or Over); Air, Electric or Hydraulic Jacking System; Augers (Vertical & Horizontal); Automatic Belt Conveyor & Surge Bin; Boiler (Temporary Heat); Crusher, Screening or Wash Plant; Generator (&/or 150 KW or Over); Heaters (Mechanical); High Pressure Utility Locating Machine (Daylighting Machine); Mudjack; Oiler; Prestress Machine; Pug Mill; Pump (3 Inch or Over) or Well Points; Rock, Stone Breaker; Screed (Milling Machine); Stump Chipper; Tank Car Heaters; Vibratory Hammer or Extractor, Power Pack. Future Increase(s): Add $1.25/hr on 6/1/2015; Add $1.30/hr on 6/1/2016; Add $1.25/hr on 6/1/2017. Premium Increase(s): DOT PREMIUMS: 1) Pay two times the hourly basic rate on Sunday, New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day & Christmas Day. 2) Add $1.50/hr night work premium. See DOT'S website for details about the applicability of this night work premium at: http://www.dot.wi.gov/business/civilrights/laborwages/pwc.htm.	36.17	21.15	57.32
556	Fiber Optic Cable Equipment.	27.89	17.20	45.09

********** END OF RATES **********

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

POST THE WHITE SHEET

As the public entity receiving this prevailing wage rate determination, YOU ARE REQUIRED by law to post the prevailing wage rate determination (i.e., white sheet) in at least one conspicuous and easily accessible place on the project site that is available to all construction workers. The white sheet must remain posted from the onset of the project until all construction labor on the project has been completed.
[*See,* Wis. Admin. Code §DWD 290.12(1)]

Posting the white sheet inside the general contractor's trailer does not meet this requirement. That placement is not available/accessible to all workers and is not a location over which you have control.

If you have questions about posting, please call (608)266-6861 and ask for prevailing wage intake.

Consolidated List of Debarred Contractors
Prepared and Issued By
State of Wisconsin - Department of Workforce Development

This list has been prepared in accordance with the provisions of §§66.0903(12) and 103.49(7), Wis. Stats., and Chapter DWD 294 of the Wisconsin Administrative Code. All contractors on this list were found to have committed a "debarable offense" related to certain labor standard provisions determined or established for a state or local public works project. No state agency, local governmental unit or owner or developer may knowingly solicit bids from, negotiate with or award any contracts to or approve or allow any subcontracts with a debarred contractor, including all divisions, affiliates or other organizational elements of such contractor that are engaged in construction business activities, until the debarment is terminated. The name of each debarred contractor must remain on this list for a period of three (3) years from the termination date indicated below. The contractor is, however, only "debarred" from the "effective date" through the "termination date" indicated for that contractor. Questions regarding this list should be addressed to Jim Chiolino, Equal Rights Division, P. O. Box 8928, Madison, WI 53708 or call (608) 266-3345. Deaf, hearing or speech-impaired callers may contact the department by calling its TDD number (608) 264-8752.

Name of Contractor	Address	Effective Date	Termination Date	Cause Code	Date of Violation(s)	Limitations/ Deviations
A-1 Duran Roofing & Insulation Services, Inc.	3700 N Fratney St Milwaukee, WI 53212 or 8095 NW 64th St Miami, FL 33166	11/1/14	10/31/17	1, 2 and 4	2011-2012	None
Abel, Mike	*See,* Abel Electric, Inc					
Abel Electric, Inc	3385 Belmar Rd Green Bay, WI 54313	9/1/12	8/31/15	1	2011	None
Arnie Christiansen Mason Contractors, LLC	2304 65th Dr Franksville, WI 53126	9/1/14	8/31/16	1, 2 and 4	2011	None
Atkins, Scott	*See,* Freedom Insulation, Inc					
Boecker, Roger	*See,* R-Way Pumping, Inc					
Brechtl, Mark G	*See,* Ecodec, Inc					
Cargill Heating and Air Conditioning Company, Inc	3049 Edgewater La La Crosse, WI 54603	3/1/14	2/28/17	1 and 2	2011	None
Castlerock Commercial Construction, Inc	PO Box 11699 Milwaukee, WI 53211-0699	2/1/12	1/31/15	1, 2 and 4	2009 & 2010	None

Name of Contractor	Address	Effective Date	Termination Date	Cause Code	Date of Violation(s)	Limitations/ Deviations
Christiansen, Andy	*See,* Arnie Christiansen Mason Contractors, LLC					
Christiansen, Arnold	*See,* Arnie Christiansen Mason Contractors, LLC					
Darnick, Gregory L	*See,* Darnick Trucking, LLC					
Darnick Trucking, LLC	W914 County Rd V Berlin, WI 54923	11/1/14	10/31/15	1, 2 and 4	2012 & 2013	None
Dem/Ex Group, Inc	805 S Adams St Manito, IL 61546	12/1/11	11/30/14	1 and 2	2010	None
Duran, Bernardo	*See,* A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ecodec, Inc	5106 Wintergreen Dr Madison, WI 53704	10/1/14	9/30/17	1	2011 & 2012	None
Fisher, Ed &/or Fisher, Rhonda	*See,* Dem/Ex Group, Inc					
Freedom Insulation, Inc	117925 219th Ave Chippewa Falls, WI 54729	9/1/11	8/31/14	1	2008-2010	None
Galstad, Michael E (aka Michael Earl Galstad)	*See,* Cargill Heating and Air Conditioning Company, Inc					
Gjolaj, Ded	*See,* Horizon Bros Painting Corp					
Horizon Bros Painting Corp	1053 Kendra La Howell, MI 48843	10/1/14	9/30/16	4	2012	None
JT Roofing, Inc	350 Tower Dr Saukville, WI 53080	6/1/12	5/31/15	1, 2 and 4	2007 & 2008	None

Name of Contractor	Address	Effective Date	Termination Date	Cause Code	Date of Violation(s)	Limitations/ Deviations
Jinkins, Richard	*See,* Castlerock Commercial Construction, Inc					
Mid-W Enterprises, Inc	1730 22nd Avenue Kenosha, WI 53140	6/1/15	5/31/17	1, 2 and 4	2013	None
Midwest Construction Co., Inc.	*See,* Mid-W Enterprises, Inc					
Oden, Cassie	*See,* A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Ofstie, Darin	*See,* Precision Excavating and Grading, LLC					
Peret, Robert	*See,* A-1 Duran Roofing & Insulation Services and RRS2 Inc					
Precision Excavating and Grading, LLC or Precision Excavating Enterprises, LLC	2104 Pierce Saint Croix Rd Baldwin, WI 54002	5/1/11	4/30/14	1, 2 and 4	2006-2008	None
R-Way Pumping, Inc	3023 Lake Maria Rd Freeport, MN 56331	3/1/12	2/28/15	1, 2 and 4	2008	None
RRS2 Inc	133 N Jackson St, #427 Milwaukee, WI 53202 or 1313 N Franklin Pl, #805 Milwaukee, WI 53202	11/1/14	10/31/17	1, 2 and 4	2011-2012	None
Thull, Gerald T	*See,* JT Roofing, Inc					
Ventura, Robert	*See,* Mid-W Enterprises, Inc					

Cause Code: 1 = Failure to Pay Straight Time 2 = Failure to Pay Overtime 3 = Kickback 4 = Payroll Records.

Department of Workforce Development
Equal Rights Division
P.O. Box 8928
Madison, WI 53708-8928
Telephone: (608) 266-6860
Fax: (608) 267-4592
TTY: (608) 264-8752

STATE OF WISCONSIN
DWD
Department of Workforce Development

Scott Walker, Governor
Reginald J. Newson, Secretary

PREVAILING WAGE – Contractors

Any public works project that has a total estimated project cost that equals or exceeds prevailing wage project thresholds requires a prevailing wage rate determination issued by the Department of Workforce Development (DWD). Public works include erecting, constructing, remodeling, repairing, demolishing, alterations, painting and decorating projects for a local governmental unit or state agency. State law excludes minor service or maintenance work, warranty work, or work under a supply-and-installation contract. There is a statutory definition for most of these exclusions. The prevailing wage laws that apply to local governmental units and their contractors are §§66.0903 and 103.503, Wis. Stats. The prevailing wage laws that apply to state agencies and their contractors are §§103.49 and 103.503, Wis. Stats. The applicable administrative rules for all prevailing wage projects are DWD 290 and DWD 294, Wis. Adm. Code. These laws include provisions that apply to all contractors and subcontractors working on prevailing wage projects.

Any contractor or subcontractor working on a local governmental unit or state agency's public works project that equals or exceeds current prevailing wage project thresholds must do all of the following:

- Receive and review the project's prevailing wage rate determination (i.e., white sheet).
- Tell subcontractors the project is subject to state prevailing wage law and include the prevailing wage rate determination in the construction contract, or if there is no written contract, provide a copy of the project determination to each subcontractor.
- Hire subcontractors who do *not* appear on the "Consolidated List of Debarred Contractors."
- Have a written substance abuse testing program in place that fulfills the requirements of §103.503, Wis. Stats., before commencing work on the project.

- Notify subcontractors that if DWD finds that a contractor or subcontractor violated the prevailing wage law, DWD will assess liquidated damages of 100% of the wages owed to employees.

- Apply to DWD for subjourney wage rates prior to employing these individuals on the project.

- Receive and retain a completed Affidavit of Compliance from each subcontractor brought on to the project before providing final payment to those subcontractors.

- Submit a completed Affidavit of Compliance to the contractor who brought the subcontractor on to the project before receiving final payment for the project.

- Maintain payroll records for 3 years that comply with §§66.0903(10)(a) or 103.49(5)(a), Stats. and DWD 274.06.

- Respond to requests from DWD or the project owner to provide payroll records and/or respond to prevailing wage complaints filed by employees or third parties.

For more information, visit the prevailing wage website: http://dwd.wisconsin.gov/er/prevailing_wage_rate/default.htm. For further assistance, call the Equal Rights Division at 608-266-6861 and ask for prevailing wage.

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Disclosure of Ownership

The statutory authority for the use of this form is prescribed in Sections 66.0903(12)(d), 66.0904(10)(d) and 103.49(7)(d), Wisconsin Statutes.
The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1) (m), Wisconsin Statutes].

(1) On the date a contractor submits a bid to or completes negotiations with a state agency, local governmental unit, or developer, investor or owner on a project subject to Section 66.0903, 66.0904 or 103.49, Wisconsin Statutes, the contractor shall disclose to such state agency, local governmental unit, or developer, investor or owner, the name of any "other construction business," which the contractor, or a shareholder, officer or partner of the contractor, owns or has owned within the preceding three (3) years.

(2) The term "other construction business" means any business engaged in the erection, construction, remodeling, repairing, demolition, altering or painting and decorating of buildings, structures or facilities. It also means any business engaged in supplying mineral aggregate, or hauling excavated material or spoil as provided by Sections 66.0903(3), 66.0904(2), 103.49(2) and 103.50(2), Wisconsin Statutes.

(3) This form must ONLY be filed, with the state agency project owner, local governmental unit project owner, or developer, investor or owner of a publicly funded private construction project that will be awarding the contract, if **both (A) and (B) are met.**

(A) The contractor, or a shareholder, officer or partner of the contractor:
- (1) Owns at least a 25% interest in the "other construction business," indicated below, on the date the contractor submits a bid or completes negotiations; or
- (2) Has owned at least a 25% interest in the "other construction business" at any time within the preceding three (3) years.

(B) The Wisconsin Department of Workforce Development (DWD) has determined that the "other construction business" has failed to pay the prevailing wage rate or time and one-half the required hourly basic rate of pay, for hours worked in excess of the prevailing hours of labor, to any employee at any time within the preceding three (3) years.

Other Construction Business

Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code
Business Name			
Street Address or P O Box	City	State	Zip Code

I hereby state under penalty of perjury that the information, contained in this document, is true and accurate according to my knowledge and belief.

Print the Name of Authorized Officer	
Authorized Officer Signature	Date Signed
Corporation, Partnership or Sole Proprietorship Name	

Street Address or P O Box	City	State	Zip Code

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Prime Contractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(c), 66.0904(7)(c) and 103.49(4r)(c) Wisconsin Statutes.
The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Agency** indicated below.

State Of))SS County Of)	Project Name	
	DWD Determination Number	Project Number (if applicable)
	Date Determination Issued	Date of Contract
	Awarding Agency	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below and have recently completed all of the work required under the terms and conditions of a contract with the above-named awarding agency and make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(c), 66.0904(7)(c) or 103.49(4r)(c), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding agency.
- **I have** fully complied with all the wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding agency indicated above.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address	City	State	Zip Code	Telephone Number
Print Name of Authorized Officer			Date Signed	
Signature of Authorized Officer				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
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Telephone Number			Telephone Number		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number			Telephone Number		

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division

Agent or Subcontractor Affidavit of Compliance With Prevailing Wage Rate Determination

Authorization for this form is provided under Sections 66.0903(9)(b), 66.0904(7)(b) and 103.49(4r)(9b), Wisconsin Statutes. The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes [Privacy Law, Section 15.04(1)(m), Wisconsin Statutes].

This form must **ONLY** be filed with the **Awarding Contractor** indicated below.

State Of _____))SS County Of _____)	Project Name	
	DWD Determination Number	Project Number (if applicable)
	Date Determination Issued	Date of Subcontract
	Awarding Contractor	
	Date Work Completed	

After being duly sworn, the person whose name and signature appears below hereby states under penalty of perjury that

- **I am** the duly authorized officer of the corporation, partnership, sole proprietorship or business indicated below. We have recently completed all of the work required under the terms and conditions of a subcontract with the above-named awarding contractor. We make this affidavit in accordance with the requirements set forth in Section 66.0903(9)(b), 66.0904(7)(b) or 103.49(4r)(b), Wisconsin Statutes and Chapter DWD 290 of the Wisconsin Administrative Code in order to obtain FINAL PAYMENT from such awarding contractor.
- **I have** fully complied with the entire wage and hour requirements applicable to this project, including all of the requirements set forth in the prevailing wage rate determination indicated above which was issued for such project by the Department of Workforce Development on the date indicated above.
- **I have** received the required affidavit of compliance from each of my agents and subcontractors that performed work on this project and have listed each of their names and addresses on page 2 of this affidavit.
- **I have** full and accurate records that clearly indicate the name and trade or occupation of every worker(s) that I employed on this project, including an accurate record of the hours worked and actual wages paid to such worker(s).
- **I will** retain the records and affidavit(s) described above and make them available for inspection for a period of at least three (3) years from the completion date indicated above at the address indicated below and shall not remove such records or affidavit(s) without prior notification to the awarding contractor.

Name of Corporation, Partnership, Sole Proprietorship, Business, State Agency or Local Governmental Unit				
Street Address or PO Box	City	State	Zip Code	Telephone Number ( )
Print Name of Authorized Officer			Date Signed	
Authorized Officer Signature				

List of Agents and Subcontractors

Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		
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Telephone Number ( )			Telephone Number ( )		
Name			Name		
Street Address			Street Address		
City	State	Zip Code	City	State	Zip Code
Telephone Number ( )			Telephone Number ( )		

If you have any questions call (608) 266-6861

State of Wisconsin
Department of Workforce Development
Equal Rights Division
Labor Standards Bureau

Request to Employ Subjourneyperson

The use of this form is mandatory. The penalty for failing to complete this form is prescribed in Section 103.005(12), Wisconsin Statutes.
Personal information you provide may be used for secondary purposes (Privacy Law, s. 15.04(1)(m), Wisconsin Statutes].
The employer indicated below requests that the Department of Workforce Development (DWD) determine the prevailing wage rate(s) and related qualifications to enable such employer to use a subjourneyperson(s) on the following prevailing wage project, in accordance with the provisions of Section DWD 290.025, Wisconsin Administrative Code.

1. Name of Project Appearing on the Project Determination			
County	City, Village or Town		
DWD Project Determination Number	Project Number (if applicable)		
2. Job Classification(s) for which you request a subjourney rate (i.e., carpenter, electrician, plumber, etc.)			
a.	b.		
c.	d.		
3. Employer Name (Print)	Requester Name (Print)		
Address	City	State	Zip Code
Telephone Number ( )	Requester Title		
Email address (if you prefer to receive your response via email)	Fax Number (if you prefer to receive your response via fax) ( )		

READ CAREFULLY: I understand that this request is ONLY applicable to the project and job classification(s) listed above and that subjourney employees primarily work under the direction of and assist a skilled trade employee by frequently using the tools of a skilled trade and will NOT regularly perform the duties of a general laborer, heavy equipment operator or truck driver. If the subjourney employee regularly performs the work of a different trade or occupation, he/she will be compensated for such work at the applicable journeyperson prevailing wage rate. I agree to compensate subjourney employees in strict accordance with the directions received from the DWD.

Requester Signature	Date Signed

MAIL the completed request to:
EQUAL RIGHTS DIVISION, LABOR STANDARDS BUREAU
PO BOX 8928, MADISON WI 53708
OR
FAX the completed request to: (608) 267-4592 / **DO NOT e-mail your request.**
Call (608) 266-6861 for assistance in completing this form.

ERD-10880 (R. 6/2013)

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SECTION 01 00 00

BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION SUMMARY

A. Section Includes:
1. Section Summary
2. Summary of the Work
3. Contractor Use of Premises
4. Applications for Payment
5. Alternates
6. Informational Bids
7. Unit Prices
8. Coordination
9. Cutting and Patching
10. Conferences
11. Progress Meetings
12. Submittal Procedures
13. Proposed Products List
14. Shop Drawings
15. Product Data
16. Samples
17. Manufacturers' Instructions
18. Manufacturers' Certificates
19. Quality Assurance / Quality Control of Installation
20. References
21. Temporary Facilities and Controls
22. Cold Weather Protection
23. Enclosure
24. Protection of Installed Work
25. Parking
26. Progress Cleaning
27. Products
28. Transportation, Handling, Storage and Protection
29. Project Identification Sign
30. Equals and Substitutions
31. Starting Systems
32. Demonstration and Instructions
33. Contract Closeout Procedures
34. Final Cleaning
35. Adjusting
36. Operation and Maintenance Data
37. Spare Parts and Maintenance Materials
38. As-Built Drawings and Specifications

1.2 SUMMARY OF THE WORK

A. Project Description: Perform the Work as specified and detailed in Construction Documents package. Contractor to provide construction services for the deconstruction of the Former Nurses

Dormitory on the Lakeview Campus. Significant architectural features of the building will be retained to create a historic interpretive site. The project will include Stormwater Management features, site improvements and protection of historic cultural features.

B. Work by Owner: Refer to Instructions to Bidders, Article 19.
   1. Refer to General Conditions Article 16 for scope of testing of materials by Owner.

C. Permits: Prior to commencement of the Work, Contractor to secure any and all necessary permits for completion of the Work and facility occupancy. The demolition permit must be obtained prior to September 2015.

D. Examination of Plans, Specification and Site: If in the opinion of the Contractor there are omissions or errors in the plans or specifications, the Contractor shall request clarification per the Instructions to Bidders, Article 3, Interpretation. In lieu of written clarification by addendum, resolve all conflicts in favor of the greater quantity or better quality.

E. Phasing Plan: Prior to commencing construction, Contractor shall submit a schedule to accommodate the below phasing plan including shop drawing submittal review and material procurement.
   1. Obtain permit by September 2015.
   2. Complete building deconstruction and rough grading by October 1, 2015.
   3. Substantial completion and landscaping complete by Spring 2016.

1.3 CONTRACTOR USE OF PREMISES

A. Limit use of premises to allow work by Contractors or Subcontractors, work by Owner, and access by Owner. Protect portions of building during construction to create a watertight wall.

B. Construction activities with significant noise or temporary disruption of services will be required to be coordinated and scheduled with Owner.

C. Contractor should arrange with Owner to use existing water and electrical service.

1.4 APPLICATIONS FOR PAYMENT

A. Submit two (2) copies of each application on AIA G702™ and G703™ forms or approved contractors invoice form.

B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.

C. Payment Period: Monthly.

1.5 ALTERNATES

A. Alternates quoted on Bid Form shall be reviewed and accepted or rejected at the Owner's option.

B. Coordinate related work and modify surrounding work as required.

C. Schedule of Alternates:
   1. Not applicable.

1.6 INFORMATIONAL BIDS

A. Refer to Instructions to Bidders Article 16.

B. Schedule of Informational Bids:
1. Not applicable.

1.7 UNIT PRICES

A. Refer to Instructions to Bidders Article 17.

1.8 COORDINATION

A. Coordinate scheduling, submittals, and work of various sections of Specifications to assure efficient and orderly sequence of installation of interdependent construction elements.

B. Verify utility requirement characteristics of operating equipment are compatible with building utilities.

C. Coordinate space requirements and installation of mechanical and electrical work that are indicated diagrammatically on Drawings.

D. Coordinate work by Owner.

1.9 CUTTING AND PATCHING

A. Employ a skilled and experienced installer to perform cutting and patching new work; restore work with new Products.

B. Submit written request in advance of cutting or altering structural or building enclosure elements.

C. Fit work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

D. Refinish surfaces to match adjacent finishes.

1.10 CONFERENCES

A. Dane County Department Public Works, Highway & Transportation will schedule a preconstruction conference after Award of Contract for all affected parties.

B. When required in individual Specification section, convene a pre-installation conference at project site prior to commencing work of the section.

1.11 PROGRESS MEETINGS

A. Owner shall schedule and administer meetings throughout progress of the Work at minimum of two (2) per month.

B. Owner shall preside at meetings, record minutes, and distribute copies within two (2) days to those affected by decisions made.

1.12 SUBMITTAL PROCEDURES

A. Submittal form to identify Project, Contractor, Subcontractor or supplier; and pertinent Construction Documents references.

B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with requirements of the Work and Construction Documents.

C. Identify variations from Construction Documents and Product or system limitations that may be detrimental to successful performance of completing the Work.

D. Revise and resubmit submittals as required; identify all changes made since previous submittal.

1.13 PROPOSED PRODUCTS LIST

A. Within fifteen (15) days after date of Award of Contract, submit complete list of major Products proposed for use, with name of manufacturer, trade name, and model number of each Product.

1.14 SHOP DRAWINGS

A. Contractor shall electronically submit Shop Drawings for each submission, until receiving final approval. When copies for distribution are requested, submit the number of copies that Contractor requires, plus two (5) copies that shall be retained by Public Works Project Manager and the Architect/Engineer. Refer to General Conditions Article 4.

1.15 PRODUCT DATA

A. Contractor shall electronically submit Product Data for each submission, until receiving final approval. When copies for distribution are requested, submit the number of copies that Contractor requires, plus two (5) copies that shall be retained by Public Works Project Manager and the Architect/Engineer. Refer to General Conditions Article 4.

B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturer's standard data to provide information unique to this Project.

1.16 SAMPLES

A. Submit samples to illustrate functional and aesthetic characteristics of the Product.

B. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for AE's selection. Refer to General Conditions Article 4.

1.17 MANUFACTURERS' INSTRUCTIONS

A. When specified in individual Specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.

1.18 MANUFACTURERS' CERTIFICATES

A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project Engineer for review, in quantities specified for Product Data.

B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

1.19 QUALITY ASSURANCE / QUALITY CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce work of specified quality.

B. Comply fully with manufacturers' instructions.

C. Comply with specified standards as minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

1.20 REFERENCES

A. Conform to reference standard by date of issue current as of date for receiving bids.

B. Should specified reference standard conflict with Construction Documents, request clarification from Public Works Project Engineer before proceeding.

1.21 TEMPORARY FACILITES AND CONTROLS

A. Contractor shall provide and maintain a temporary watertight office where directed by the Public Works Project Manager. The office shall be equipped with a table suitable for examination of plans. Provide and maintain artificial light, a minimum of 40 foot-candles and two duplex outlets where directed. Exterior office shall be of neat appearance as deemed by the Public Works Project Manager. Provide fire extinguishers and heating, cooling and ventilation. Provide a table and chairs to accommodate construction progress meeting attendees. If other offices are provided, locate as agreed to by the Contractor and approved by the Public Works Project Manager.

B. Contractor shall provide and maintain sanitary temporary toilets, located where directed by Public Works Project Manager, in sufficient number required for the force employed. The toilets shall comply with International Building Code Chapter 29 on Plumbing Systems. Toilets shall be self-contained chemical type.

C. Temporary Water Service: connect to existing water source.

D. Temporary Electricity: Provide and pay for power service required from utility source as needed for construction operation.

Provide distribution equipment, wiring, and outlets to provide single phase branch circuits for power and lighting.

1. Provide two 20 ampere weatherproof duplex outlets on a single phase circuit for power tools for every 1000 sq. ft. of active work area.
2. Provide 20 ampere, single phase branch circuits for lighting.

E. Temporary Lighting for Construction Purposes: Provide and maintain HID lighting for construction operations to a minimum level of 0.25 watt/sq. ft.

Provide and maintain 0.1 watt/sq. ft. lighting to exterior staging and storage areas after dark for security purposes. Obtain approval of all lighting prior to installation from Owner.

Provide and maintain 0.25 watt/sq. ft. HID lighting to interior work areas after dark for security purposes. Obtain approval of all lighting prior to installation from Owner.

Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps for specified lighting levels.

Maintain lighting and provide routine repairs.

Permanent building lighting may be utilized during construction with written permission of Division 26. Such usage shall not shorten guarantee period.

F. Removal of Utilities, Facilities and Controls: Remove temporary utilities, equipment, facilities, materials, prior to Substantial Completion inspection.

Remove underground installations to minimum depth of 2 feet.

Clean and repair damage caused by installation or use of temporary work.

G. Traffic Regulation: Post signage and provide traffic, cones, drums, flares, lights and trained flag persons as approved by authority having jurisdiction.

Consult with Dane County Public Works Project Manager and authority having jurisdiction to establish public thoroughfares to be used for haul routes and site access. Remove equipment at substantial completion and restore site.

H. The Lead Contractor shall provide a neat appearing protective fence, constructed of 8'-0" high chain link fencing. Provide gates, properly constructed and braced, complete with hinges, hasps, and padlocks in number and location required for proper control, delivery and distribution of material and equipment and so they can be secured after hours. Gate posts shall be adequately back tied and anchored to insure a rigid installation. All protective fencing shall be maintained in an upright, orderly fashion throughout the construction schedule. In areas where existing trees are to be protected, the area inside the protective fencing shall not be used for any purpose related to construction activities, such as material storage, vehicle parking, portable toilets, or other disruptive activities that would result in damage of any kind to the site inside the fence. During demolition, tarps may be added to the interior of the fencing to reduce the spread of dust and to assist with safety and security.

I. Water Control: Grade site to drain. Maintain excavations free of water. Provide, operate and maintain pumping equipment. Protect the site from puddling or running water.

J. Dust Control: Execute Work by methods to minimize razing dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

K. Pollution Control: Provide methods, means and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with pollution and environmental control requirements of authorities having jurisdiction.

L. Pest and Rodent Control: Provide methods, means and facilities to prevent pests, insects and rodents from entering facility or damaging the Work.

1.22 COLD WEATHER PROTECTION

A. All heating and protective covering, required to protect the work from injury due to freezing and moisture during the construction period and prior to enclosure of the building, shall be classed as COLD WEATHER PROTECTION. Such protection shall be provided and paid for by the Contractor.

B. Provide and pay for heating devices and heat as need to maintain specified conditions for construction operations. Heat required to protect materials from injury due to freezing during the construction period prior to enclosure, shall be provided by means of portable heating units intended for this purpose. All heating units must be approved types. Proper ventilation must be provided. The use of temporary units whose product of combustion will damage fresh concrete, mortar or other building materials, will not be allowed. Use of coke of oil salamanders is prohibited. Heating units and the area surrounding the units shall be kept in a clean and safe condition.

1.23 ENCLOSURE

A. Provide temporary partitions as required to separate work areas from Owner occupied areas, to prevent distribution of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment. Temporary partitions shall consist of minimum 3/8" plywood panels fastened to wood framework and plastic sheeting. Provide enclosure at tunnel during deconstruction.

B. Before the building, or portion thereof, can be considered enclosed, the Contractor shall have advanced the construction of the building to conform with the following requirements.

C. The exterior walls should be erected to full thickness and height shall extend to the top of the horizontal level which encloses the space intended to receive heat. If erection of full thick walls is not feasible, erection of back-up wall only will be accepted if approved weatherproofing of back up materials is provided to avoid damage to back-up materials. The entire overhead enclosure shall be made weatherproof.

D. Provide approved translucent material for temporary enclosure of window openings if they have not been glazed. Plain or reinforced polyethylene film or other suitable translucent material will be acceptable, provided it is installed in or on a well-fitting rigid wood frame and kept in good repair. This means of temporary enclosure shall be used for other minor openings in walls.

E. Construct temporary walls as required to protect contents and to separate interior enclosed sections from the interior open section of the building during construction. Temporary wall enclosure shall consist of plywood panels, at least 3/8" thick, fastened to wood framework, consisting of 2x4 studs spaced 24" o.c., securely spiked to wood plates, to and bottom. Temporary walls must provide protection from dirt, dust, and drafts. Make suitable provisions for passage of air to permit proper drying out of the building.

F. Provide exterior doors with hinges, self-closing device and locks. At the end of day's work, securely close temporary enclosures. Padlock exterior doors. Architect and Public Works Project Manager to approve method of securing exterior doors.

1.24 PROTECTION OF INSTALLED WORK

A. Protect installed work and provide special protection where specified in individual Specification sections.

1.25 PARKING

A. One (1) parking stall for the general contractor shall be available on site.

B. An additional three (3) parking stalls shall be coordinated for use on site.

C. Arrange for any additional parking to accommodate construction personnel.

1.26 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

1.27 PRODUCTS

A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.

B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by Construction Documents.

1.28 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

A. Transport, handle, store and protect Products in accordance with manufacturer's instructions.

1.29 PROJECT IDENTIFICATION SIGN

A. Provide and install a project sign, 32 sq ft, bottom of sign 6 feet above ground. Content: Project, Owner and logo, names and title of Architect and consultants, name of General Contractor and major Subcontractors, and rendering provided by Architect. Provide a submittal of project sign and installation methods for Architect approval. Remove sign and all supports upon project completion, restore area.

1.30 EQUALS AND SUBSTITUTIONS

A. Where definite material is specified, it is not intention to discriminate against "equal" product made by another manufacturer. Intention is to set definite standard of material quality. Material, equipment, or processes offered for use as an ‘Equal’ or ‘Substitution’ may be proposed by the Contractor in writing. Contractor shall submit said materials specifications for Architect/Engineer and Project Manager approval at least ten (10) days prior to Bid Opening.

B. Products and materials that are not specified, but have been approved for use by the Architect/Engineer and Project Manager shall be identified in addenda to all bidding contractors.

C. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.

D. Electronically submit requests for Substitution for consideration. Limit each request to one (1) proposed Substitution. Provide three (3) copies of samples as required for Substitution consideration.

1.31 STARTING SYSTEMS

A. Provide written notification prior to start-up of each equipment item or system.

B. Ensure that each piece of equipment or system is ready for operation.

C. Execute start-up under supervision of responsible persons in accordance with manufacturers' instructions.

D. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.32 DEMONSTRATION AND INSTRUCTIONS

A. Demonstrate operation and maintenance of Products to Owner's personnel prior to date of final inspection.

B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.

1.33 CONTRACT CLOSEOUT PROCEDURES

A. Submit written certification that Construction Documents have been reviewed, the Work has been inspected, and the Work is complete in accordance with Construction Documents and ready for Architect/Engineer and Public Works Project Manger inspection. Submit a list of any items that are not complete for Architect review prior to scheduling substantial and final completion site visits.

B. Submit final Application for Payment identifying total adjusted Contract Sum / Price, previous payments, and amount remaining due.

1.34 FINAL CLEANING

A. Execute final cleaning prior to final inspection.

B. Clean interior and exterior surfaces exposed to view.

C. Remove waste and surplus materials, rubbish, and construction facilities from site.

1.35 ADJUSTING

A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.36 OPERATION AND MAINTENANCE DATA

A. Assemble a complete set of operation and maintenance data and warranties for all products and mechanical and electrical equipment supplied and installed in project. Submit (2) printed copies organized in 3 ring binders by specification section and electronically in PDF format with bookmarks by specification section. Identify with project name and ‘Operation and Maintenance Manual’.

1.37 SPARE PARTS AND MAINTENANCE MATERIALS

A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.

B. Deliver to the Work site and place in location as directed.

1.38 AS-BUILT DRAWINGS AND SPECIFICATIONS

A. Contractor-produced Drawings and Specifications shall remain property of Contractor whether Project for which they are made is executed or not. Contractor shall furnish Public Works Project Engineer with original tracings of drawings and prints of specifications in reproducible format, one set of Drawings and Specifications and one set of as-builts drawings in AutoCAD 2010 (or lower) format on CD.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 35 91

HISTORIC TREATMENT PROCEDURES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 govern work under this Section.

1.02 SUMMARY

A. Section includes general protection and treatment procedures historic removal and dismantling.

1.03 RELATED SECTIONS:

A. Section 01 74 19, Construction Waste Management and Disposal.

B. Section 02 41 13, Building Demolition.

C. Division 04 Section "Maintenance of Unit Masonry" for specific requirements for cleaning repairing and replacing stone masonry.

D. Division 04 Section "Stone Masonry" for specific requirements for replacement stone.

E. Division 09 Section "Portland Cement Plastering".

F. Division 09 Section "Painting" for specific requirements for stripping and repainting of finishes.

1.04 DEFINITIONS

A. Consolidate: To strengthen loose or deteriorated materials in place.

B. Dismantle: To disassemble and detach items by hand from existing construction to the limits indicated, using small hand tools and small one-hand power tools, so as to protect nearby historic surfaces; and legally dispose of dismantled items off-site, unless indicated to be salvaged or reinstalled.

C. Existing to Remain: Existing items that are not to be removed or dismantled.

D. Historic: Spaces, areas, rooms, surfaces, materials, finishes, and overall appearance which is important to the successful rehabilitation as determined by the A/E. Designated historic spaces, areas, rooms and surfaces are indicated on Drawings and generally described below.

1. Restoration Zones (Primary): Areas of greatest architectural importance, integrity, and visibility; to be preserved and restored to the original, design and finish as shown on Drawings:
   a. Veranda and existing walls to remain

2. Renovation Zones (Secondary): Areas of significant architectural importance, integrity, and visibility; to be preserved and restored consistent with the remaining historic fabric and to the extent shown on Drawings:
   a. East façade installation of salvaged material

3. Alteration Zones (Tertiary): Areas of slight architectural importance, integrity, and visibility; to leave any remaining original fabric untouched insofar as is consistent with accommodating modern uses for the building as shown on Drawings:

a. Boiler House and Tunnel

E. Match: To blend with adjacent construction and manifest no apparent difference in material type, species, cut, form, detail, color, grain, texture, or finish; as approved by the Architect.

F. Reconstruct: To remove existing item, replicate damaged or missing components, and reinstall in original position.

G. Refinish: To remove existing finishes to base material and apply new finish to match original, or as otherwise indicated.

H. Reinstall: To protect removed or dismantled item, repair and clean it as indicated for reuse, and reinstall it in original position, or where indicated.

I. Remove: Specifically for historic spaces, areas, rooms, and surfaces, the term means to detach an item from existing construction to the limits indicated, using hand tools and hand-operated power equipment, and legally dispose of it off-site, unless indicated to be salvaged or reinstalled.

J. Repair: To correct damage and defects, retaining existing materials, features, and finishes while employing as little new material as possible. Includes patching, piecing-in, splicing, consolidating, or otherwise reinforcing or upgrading materials.

K. Replace: To remove, duplicate, and reinstall entire item with new material. The original item is the pattern for creating duplicates unless otherwise indicated.

L. Replicate: To reproduce in exact detail, materials, and finish, unless otherwise indicated.

M. Reproduce: To fabricate a new item, accurate in detail to the original, and in either the same or a similar material as the original, unless otherwise indicated.

N. Restore: To consolidate, replicate, reproduce, repair, and refinish as required to achieve the indicated results.

O. Retain: To keep existing items that are not to be removed or dismantled.

P. Reversible: New construction work, treatments, or processes that can be removed or undone in the future without damaging historic materials, unless otherwise indicated.

Q. Salvage: To protect removed or dismantled items ready for reuse or deliver them to Owner, as indicated.

R. Stabilize: To provide structural reinforcement of unsafe or deteriorated items while maintaining the essential form as it exists at present; also, to reestablish a weather-resistant enclosure.

S. Strip: To remove existing finish down to base material, unless otherwise indicated.

1.05 MATERIALS OWNERSHIP

A. Historic items, relics, and similar objects including, but not limited to, cornerstones and their contents, commemorative plaques and tablets, antiques, and other items of interest or value to Owner that may be encountered during removal and dismantling work remain Owner's property. Carefully dismantle and salvage each item or object.

B. Coordinate with Owner Construction Representative, who will establish special procedures for dismantling and salvage.

1.06 SUBMITTALS

A. Construction Schedule for Historic Treatments: Indicate for the entire Project the following for each activity to be performed in historic spaces, areas, and rooms, and on historic surfaces:
   1. Detailed sequence of historic treatment work, with starting and ending dates, coordinated with other known work in progress.

B. Qualification Data: For historic removal and dismantling specialist.

C. Preconstruction Documentation: Show preexisting conditions of adjoining construction and site improvements, including finish surfaces, that might be misconstrued as damage caused by historic treatment operations.

D. Fire-Prevention Plan: Submit before work begins.

E. Inventory of Salvaged Items: After removal or dismantling work is complete, submit a list of items that have been salvaged.

1.07 QUALITY ASSURANCE

A. Historic Treatment Specialist Qualifications: An experienced firm regularly engaged in historic treatments similar in nature, materials, design, and extent to this work as specified in each section, and that has completed a minimum of three recent projects with a record of successful in-service performance that demonstrate the firm's qualifications to perform this work.
   1. Field Supervisor Qualifications: Supervisors experienced in historic treatment work similar in nature, material, design, and extent to that indicated for this Project. Supervisors shall be on Project site during times that historic treatment work is in progress.
   2. Worker Qualification: Persons who are experienced in historic treatment work of types they will be performing.

B. Historic Removal and Dismantling Specialist Qualifications: A qualified historic treatment specialist.
   1. General selective demolition experience is not sufficient experience for historic removal and dismantling work.

C. Fire-Prevention Plan: Prepare a written plan for preventing fires during the Work, including placement of fire extinguishers, fire blankets, rag buckets, and other fire-prevention devices during each phase or process. Coordinate plan with Owner's fire-protection equipment and requirements. Include each fire watch's training, duties, and authority to enforce fire safety.

D. Mockups: Prepare mockups of specific historic treatment procedures specified in this Section to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Typical Removal Work: Remove typical wall area as shown on Drawings.
   2. Typical Dismantling Work: Dismantle arch and surround as shown on Drawings.
   3. Typical Removal Work: Remove one whole brick masonry and stone unit.
   4. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless A/E specifically approves such deviations in writing.

E. Regulatory Requirements: Comply with governing EPA notification regulations before beginning removal and dismantling work. Comply with hauling and disposal regulations of authorities having jurisdiction.

F. Standards: Comply with ANSI/ASSE A10.6.

G. Historic Treatment Preconstruction Conference: Conduct conference at Project site.
1. General: Review methods and procedures related to historic treatment including, but not limited to, the following:
a. Review manufacturer's written instructions for precautions and effects of historic treatment procedures on materials, components, and vegetation.
b. Review and finalize historic treatment construction schedule; verify availability of materials, equipment, and facilities needed to make progress and avoid delays.
c. Review qualifications of personnel assigned to the work and assign duties.
d. Review material application, work sequencing, tolerances, and required clearances.
e. Review areas where existing construction is to remain and requires protection.
2. Removal and Dismantling:
a. Inspect and discuss condition of construction to be removed or dismantled.
b. Review requirements of other work that relies on substrates exposed by removal and dismantling work.

1.08 STORAGE AND PROTECTION OF HISTORIC MATERIALS

A. Salvaged Historic Materials:
1. Clean only loose debris from salvaged historic items unless more extensive cleaning is indicated.
2. Pack or crate items after cleaning; cushion against damage during handling. Label contents of containers.
3. Store items in a secure area until reinstallation or delivery to Owner.
4. Transport items indicated to be delivered to Owner to the Owner's designated storage area on site.
5. Protect items from damage during transport and storage.

B. Historic Materials for Reinstallation:
1. Repair and clean historic items as indicated and to functional condition for reuse.
2. Pack or crate items after cleaning and repairing; cushion against damage during handling. Label contents of containers.
3. Protect items from damage during transport and storage.
4. Reinstall items in locations indicated. Comply with installation requirements for new materials and equipment unless otherwise indicated. Provide connections, supports, and miscellaneous materials to make item functional for use indicated.

C. Existing Historic Materials to Remain: Protect construction indicated to remain against damage and soiling from construction work. Where permitted by A/E, with prior approval, items may be dismantled and taken to a suitable, protected storage location during construction work and reinstalled in their original locations after historic treatment and construction work in the vicinity is complete.

D. Storage and Protection: When taken from their existing locations, catalog and store historic items within a weathertight enclosure where they are protected from wetting by rain, snow, condensation, or ground water, and from freezing temperatures.
1. Identify each item with a nonpermanent mark to document its original location. Indicate original locations on plans elevations, sections, or photographs by annotating the identifying marks.
2. Secure stored materials to protect from theft.

1.09 PROJECT CONDITIONS

A. General Size Limitation in Historic Spaces: Materials, products, and equipment used for performing the Work and for transporting debris, materials, and products shall be of sizes that

clear surfaces within historic spaces, areas, rooms, and openings, including temporary protection, by 4 inches or more.

B. Conditions existing at time of inspection for bidding purpose will be maintained by Owner as far as practical.
   1. Before removal and dismantling, Owner will remove the following items:
      a. Furniture.
      b. Loose equipment.

C. Notify A/E of discrepancies between existing conditions and Drawings before proceeding with removal and dismantling work.

D. Hazardous Materials: Hazardous materials are present in construction affected by removal and dismantling work. A report on the presence of hazardous materials is on file for review and use. Examine report to become aware of locations where hazardous materials are present.
   1. Hazardous material remediation will be completed under separate contract.
   2. Do not disturb hazardous materials or items suspected of containing hazardous materials except under procedures specified elsewhere in the Contract Documents.
   3. If unanticipated asbestos is suspected, stop work in the area of potential hazard, shut off fans and other air handlers ventilating the area, and rope off area until the questionable material is identified. Re-assign workers to continue work in unaffected areas. Resume work in the area of concern after safe working conditions are verified.

E. Storage or sale of removed or dismantled items on-site is not permitted unless otherwise indicated.

PART 2 - PRODUCTS - (Not Used)

PART 3 - EXECUTION

3.01 HISTORIC REMOVAL AND DISMANTLING EQUIPMENT

A. Removal Equipment: Use only hand-held tools except as follows or unless otherwise approved by the A/E on a case-by-case basis:
   1. Light jackhammers are allowed subject to A/E's approval.
   2. Large air hammers are not permitted.

B. Dismantling Equipment: Use manual, hand-held tools, except as follows or otherwise approved by the A/E on a case-by-case basis:
   1. Pry bars over 18 inches long and hammers weighing over 2 lb are not permitted for dismantling work.

3.02 EXAMINATION

A. Preparation for Removal and Dismantling: Examine construction to be removed or dismantled to determine best methods to safely and effectively perform removal and dismantling work. Examine adjacent work to determine what protective measures will be necessary. Make explorations, probes, and inquiries as necessary to determine condition of construction to be removed or dismantled and location of utilities and services to remain that may be hidden by construction that is to be removed or dismantled.
   1. Verify that affected utilities have been disconnected and capped.
   2. Inventory and record the condition of items to be removed and dismantled for reinstallation or salvage.
   3. Before removal or dismantling of existing building elements that will be reproduced or duplicated in final Work, make permanent record of measurements, materials, and construction details required to make exact reproduction.

B. Survey of Existing Conditions: Record existing conditions of historic surfaces and elements to be dismantled and salvaged by use of preconstruction photographs.

3.03 PROTECTION, GENERAL

A. Ensure that supervisory personnel are on-site and on duty when historic treatment work begins and during its progress.

B. Temporary Protection of Historic Materials:
1. Protect existing historic materials with temporary protections and construction. Do not deface or remove existing materials.

C. Comply with each product manufacturer's written instructions for protections and precautions. Protect against adverse effects of products and procedures on people and adjacent materials, components, and vegetation.

D. Existing Drains: Prevent solids such as stone or mortar residue from entering the drainage system. Clean out drains and drain lines that become sluggish or blocked by sand or other materials resulting from historic treatment work.
1. Protect drains from pollutants. Block drains or filter out sediments, allowing only clean water to pass.

E. Existing Roofing: Prior to the start of work in an area, install roofing protection.

3.04 PROTECTION FROM FIRE

A. General: Follow fire-prevention plan and the following.
1. Comply with NFPA 241 requirements unless otherwise indicated.
2. Remove and keep area free of combustibles including, rubbish, paper, waste, and chemicals, except to the degree necessary for the immediate work.
a. If combustible material cannot be removed, provide fire blankets to cover such materials.
3. Prohibit smoking by all persons within the Project work and staging areas.

B. Heat-Generating Equipment and Combustible Materials: Comply with the following procedures while performing work with heat-generating equipment or highly combustible materials, including welding, torch-cutting, soldering, brazing, paint removal with heat, or other operations where open flames or implements utilizing high heat or combustible solvents and chemicals are anticipated.
1. Obtain Owner's approval for operations involving use of open-flame or welding or other high-heat equipment in existing building.
a. Notify DSF Construction Representative at least 24 hours before each occurrence, indicating location of such work.
2. As far as practical, restrict heat-generating equipment to shop areas or outside the building.
3. Do not perform work with heat-generating equipment in or near rooms or in areas where flammable liquids or explosive vapors are present or thought to be present. Use a combustible gas indicator test to ensure that the area is safe.
4. Use fireproof baffles to prevent flames, sparks, hot gasses, or other high-temperature material from reaching surrounding combustible material.
5. Prevent the spread of sparks and particles of hot metal through open windows, doors, holes, and cracks in floors, walls, ceilings, roofs, and other openings.
6. Fire Watch: Before working with heat-generating equipment or highly combustible materials, station personnel to serve as a fire watch at each location where such work is

performed. Fire watch personnel shall have the authority to enforce fire safety. Station fire watch according to NFPA 51B, NFPA 241, and as follows.

a. Train each fire watch in the proper operation of fire-control equipment and alarms.
b. Prohibit fire-watch personnel from other work that would be a distraction from fire-watch duties.
c. Cease work with heat-generating equipment whenever fire-watch personnel are not present.
d. Have fire watch perform final fire-safety inspection each day beginning no sooner than 30 minutes after conclusion of work at each area of the Project site to detect hidden or smoldering fires and to ensure that proper fire-prevention is maintained.
e. Maintain fire-watch personnel at the Project site until conclusion of daily work.

3.05 GENERAL HISTORIC TREATMENT

A. Ensure that supervisory personnel are present when historic treatment work begins and during its progress.

B. Halt the process of deterioration and stabilize conditions, unless otherwise indicated. Perform work as indicated on Drawings. Follow the procedures in subparagraphs below and procedures approved in historic treatment program.

1. Retain as much existing material as possible; repair and consolidate rather than replace.
2. Use additional material or structure to reinforce, strengthen, prop, tie, and support existing material or structure.
3. Use reversible processes wherever possible.
4. Use historically accurate repair and replacement materials and techniques unless otherwise indicated.
5. Record existing work before each procedure (preconstruction) and progress during the work with digital preconstruction documentation photographs.

C. Notify A/E and Owner Construction Representative of visible changes in the integrity of material or components whether due to environmental causes including biological attack, UV degradation, freezing, or thawing; or due to structural defects including cracks, movement, or distortion.

1. Do not proceed with the work in question until directed by Owner Construction Representative.

D. Where missing features are indicated to be repaired or replaced, provide features whose designs are based on accurate duplications rather than on conjectural designs, subject to the approval of A/E.

E. Where Work requires existing features to be removed or dismantled and reinstalled, perform these operations without damage to the material itself, to adjacent materials, or to the substrate.

F. Identify replacement materials and features in historic areas with permanent marks hidden in the completed work to distinguish them from original materials.

3.06 HISTORIC REMOVAL AND DISMANTLING

A. General: Have removal and dismantling work performed by a qualified historic removal and dismantling specialist. Ensure that historic removal and dismantling specialist's field supervisors are present when removal and dismantling work begins and during its progress.

B. Unacceptable Equipment: Keep equipment that is not permitted for historic removal or dismantling work away from the vicinity where such work is being performed.

C. Removing and Dismantling Items On or Near Historic Surfaces:
1. Use only dismantling tools and procedures within 12 inches of historic surface. Do not use pry bars. Protect historic surface from contact with or damage by tools.
2. Unfasten items to be removed, in the opposite order from which they were installed.
3. Support each item as it becomes loosened to prevent stress and damage to the historic surface.
4. Dismantle anchorages.

D. Masonry Walls:
1. Remove masonry carefully and erect temporary bracing and supports as needed to prevent unexpected collapse of materials being removed.
2. Dismantle top edge and sides before removing wall. Stop removal work and immediately inform the A/E and Owner Construction Representative if any structural elements above or adjacent to the work show signs of distress or dislocation during any phase of removal work.
3. Remove wall in easily managed pieces.
4. During removal, the Contractor is responsible for the stability of the partially remaining wall.

E. Loose Plaster: Identify loose, non-historic plaster and separate it from its substrate by tapping with a hammer and prying with a chisel or screwdriver. Do not use pry bars. Leave sound, firmly adhered plaster in place. Do not damage, remove, or dismantle historic plasterwork except where indicated or where it is an immediate hazard to personnel and as approved by the A/E.

F. Anchorages:
1. Remove anchorages associated with removed items.
2. Dismantle anchorages associated with dismantled items.
3. In non-historic surfaces, patch holes created by anchorage removal or dismantling in accordance with the requirements for new work.
4. In historic surfaces, patch or repair holes created by anchorage removal or dismantling in accordance with Section specific to the historic surface being patched.

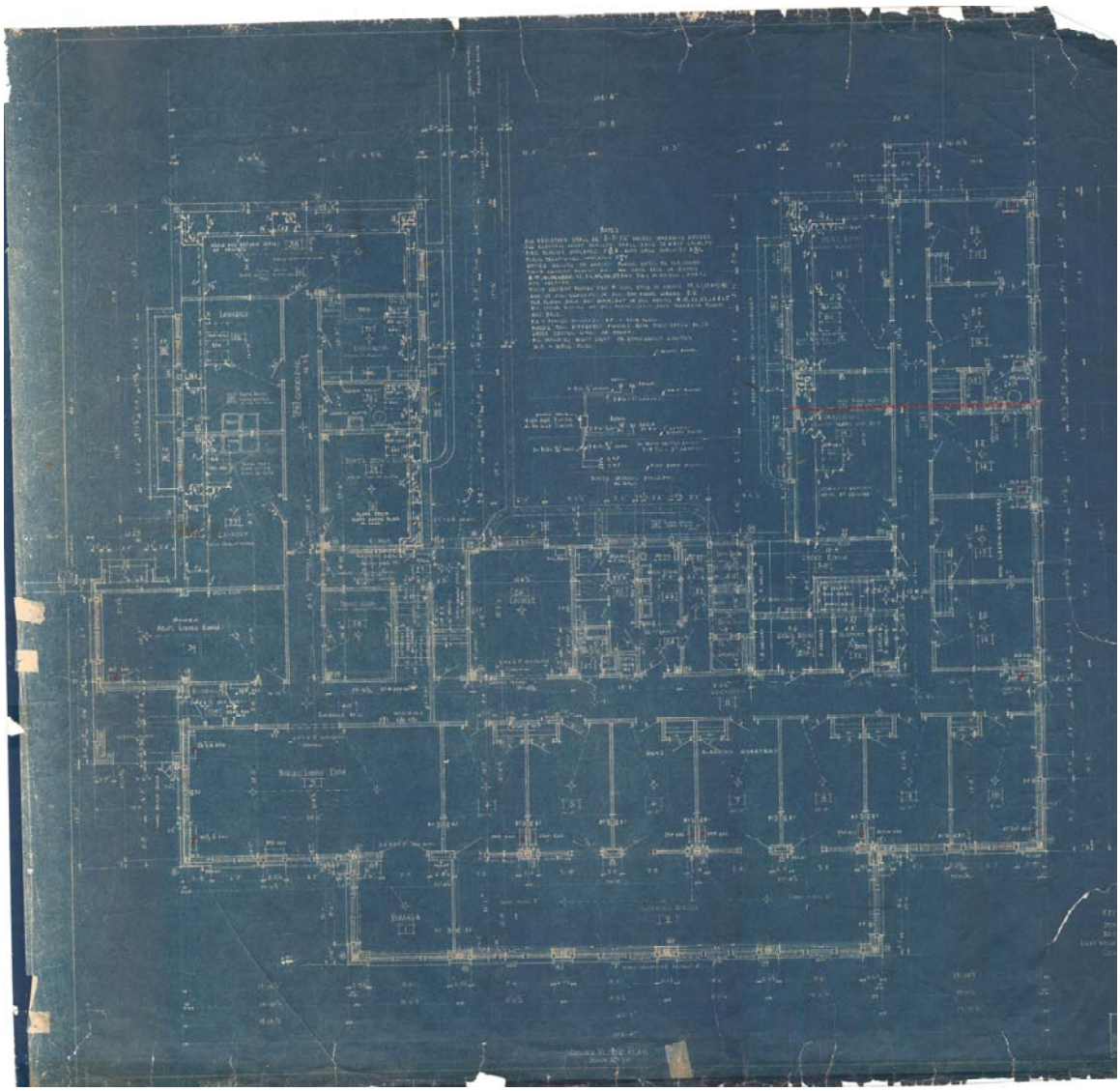
3.07 HISTORIC REMOVAL AND DISMANTLING SCHEDULE

A. Existing Items to Be Removed and Salvaged and returned to Owner:
1. One masonry arch and surround.
2. Face brick. Deliver to Owner on 4 pallets, 500 brick per pallet, loose debris cleaned, complete mortar removal by Owner.
3. 3 stone pilaster caps.
4. 4 sections of stone watertable, approximately 4 foot length.
5. 4 stone window sills, approximately 4 foot length.

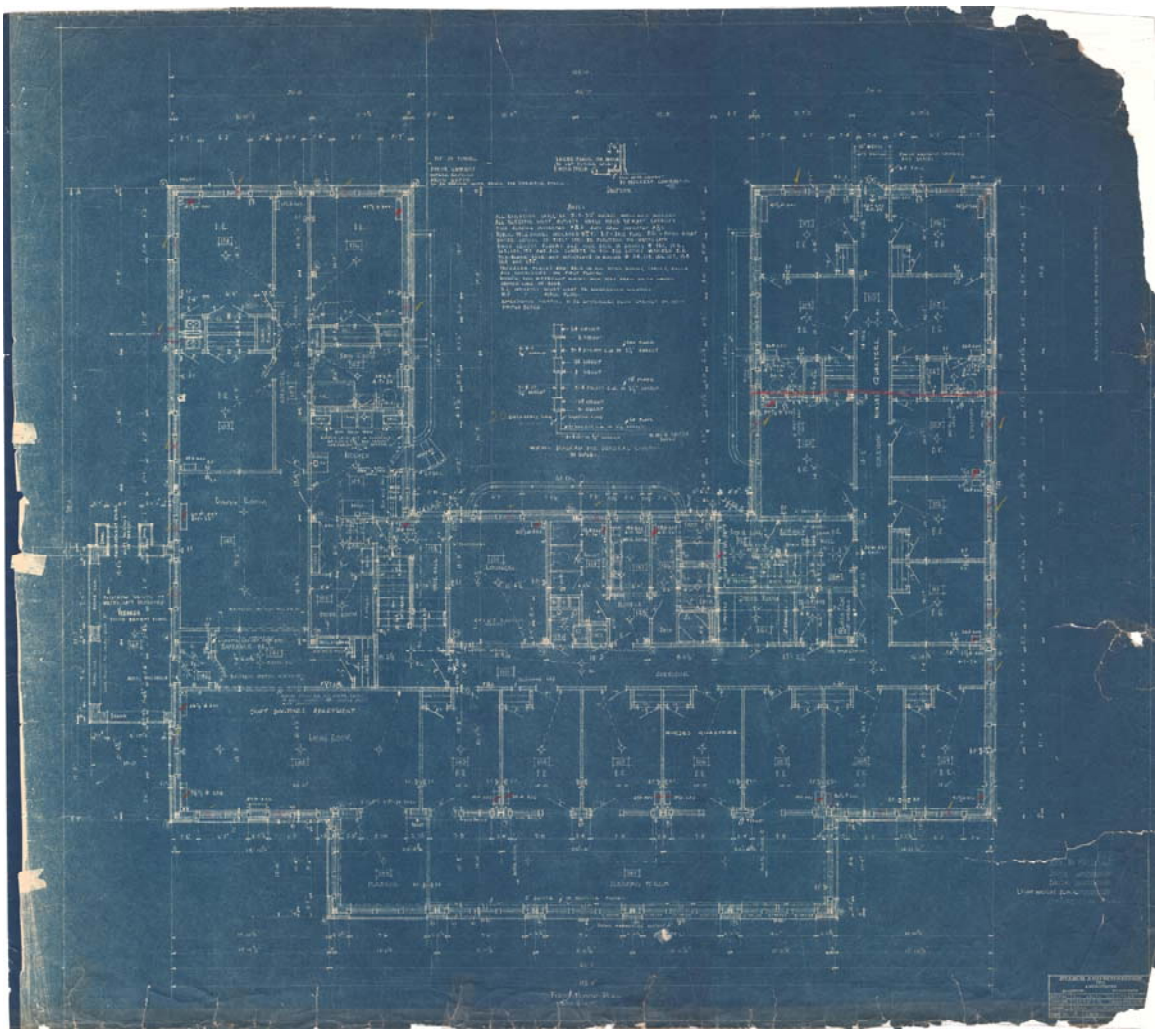
B. Existing Items to Be Removed and Reinstalled:
1. One masonry arch and surround.
2. Date stone.
3. Exterior door to be selected on site for reinstallation at new Veranda lower level opening.
4. For corner identification on site flush with grade at the former building corners, salvage sections of concrete slab and terrazzo floor. Stair treads are acceptable.
5. Face brick for reinstallation, see drawings.
   a. Whole bricks in sound condition without paint residue or stains.

3.08 EXISTING FLOOR PLANS, FORMER NURSE'S DORMITORY

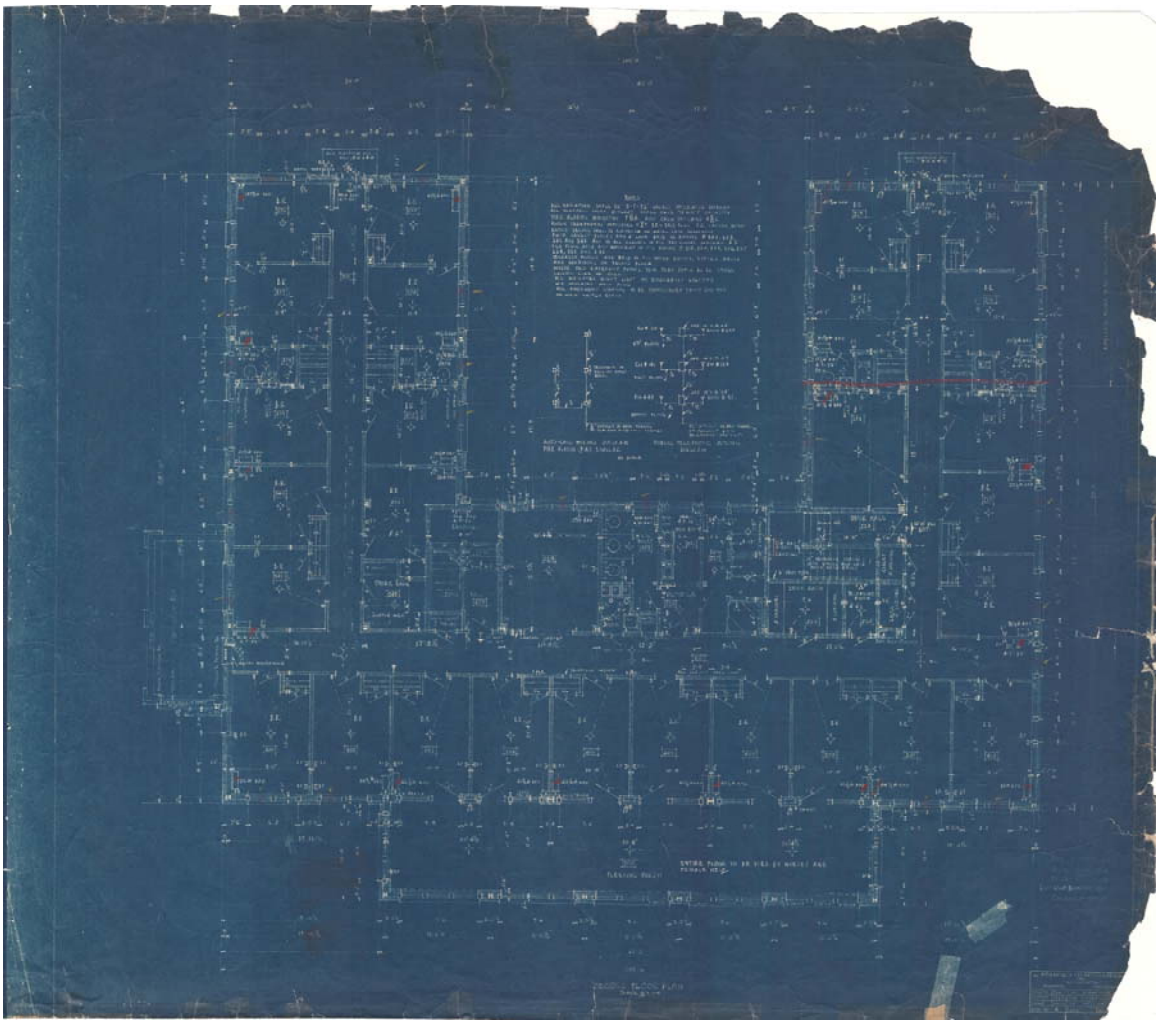
A. For Information Only.



Existing Ground Floor Plan – Not to Scale



Existing 1st Floor Plan – Not to Scale



Existing 2nd Floor Plan – Not to Scale

END OF SECTION 01 35 91

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SECTION 01 74 19

RECYCLING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Waste Management Goals
2. Waste Management Plan
3. Reuse
4. Recycling
5. Materials Sorting and Storage On Site
6. Lists of Recycling Facilities Processors and Haulers
7. Waste Management Plan Form

B. Related Sections:
1. Section 01 00 00 - Basic Requirements
2. Section 01 35 91 – Historic Treatment Procedures
3. Section 02 41 13 – Building Demolition

1.2 WASTE MANAGEMENT GOALS

A. Dane County requires that as many waste materials as possible produced as result of this project be salvaged, reused or recycled in order to minimize impact of construction waste on landfills and to minimize expenditure of energy and cost in fabricating new materials. Additional information may be found in The Dane County Green Building Policy, Resolution 299, 1999-2000.

B. Contractor shall develop, with assistance of Public Works Project Engineer and Architect / Engineer, Waste Management Plan (WMP) for this project. Outlined in RECYCLING section of this specification are examples of materials that can be recycled or reused as well as recommendations for waste sorting methods.

1.3 WASTE MANAGEMENT PLAN

A. Contractor shall complete WMP and include cost of recycling / reuse in Bid. WMP will be submitted to Public Works Project Engineer within fifteen (15) days of Notice to Proceed date. Copy of blank WMP form is in this Section. Submittal shall include cover letter and WMP form with:
1. Information on:
a. Types of waste materials produced as result of work performed on site;
b. Estimated quantities of waste produced;
c. Identification of materials with potential to be recycled or reused;
d. How materials will be recycled or reused;
e. On-site storage and separation requirements (on site containers);
f. Transportation methods; and
g. Destinations.

1.4 REUSE

A. Contractors and subcontractors are encouraged to reuse as many waste materials as possible. Salvage should be investigated for materials not reusable on site.

1.5 RECYCLING

A. These materials can be recycled in Dane County area:
   1. Wood.
   2. Wood Pallets.
   3. Fluorescent Lamps.
   4. Foam Insulation & Packaging (extruded and expanded).
   5. PVC Plastic (pipe, siding, etc.).
   6. Asphalt & Concrete.
   7. Bricks & Masonry
   8. Corrugated Cardboard.
   9. Metal.
   10. Carpet Padding.
   11. Gypsum Drywall.
   12. Shingles.
   13. Barrels & Drums.
   14. Solvents.

1.6 MATERIALS SORTING AND STORAGE ON SITE

A. Contractor shall provide separate containers for recyclable materials. Number of containers will be dependent upon project and site conditions.

B. Contractor shall provide on-site locations for subcontractors supplied recycling containers to help facilitate recycling.

1.7 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

A. Web site www.countyofdane.com/pwht/recycle/categories.aspx lists current information for Dane County Recycling Markets. Contractors can also contact Dane County's Special Projects & Recycling Manager at 608/266-4990, or local city, village, town recycling staff listed at site www.countyofdane.com/pwht/recycle/contacts.aspx. Statewide listings of recycling / reuse markets are available from UW Extension at www4.uwm.edu/shwec/wrmd/search.cfm

1.8 WASTE MANAGEMENT PLAN FORM

A. Contractor Information:
Name: _____
Address: _____
_____
Phone No.: _____ Recycling Coordinator: _____

MATERIAL	ESTIMATED QUANTITY	DISPOSAL METHOD (CHECK ONE)	RECYCLING / REUSE COMPANY OR DISPOSAL SITE
Salvaged & reused building materials	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Glass	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Wood	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Wood Pallets	_____ units	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Fluorescent Lamps	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Foam Insulation	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Asphalt & Concrete	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Bricks & Masonry	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
PVC Plastic	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Corrugated Cardboard	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Metals	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Carpet Padding	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Gypsum / Drywall	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____

Shingles	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Barrels & Drums	_____ units	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Solvents	_____ gallons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Other	_____	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Other	_____	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Other	_____	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Other	_____	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____
Other	_____	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name:_____

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 02 41 13
DEMOLITION

P A R T 1 - G E N E R A L

SCOPE

The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to provide for the demolition of site work and such features as required in these specifications and on the drawings. Included are the following topics:

INDEX

RELATED WORK

Related Documents: Applicable provisions of Division 1 shall govern all work under this section.

- Section 01 35 19 – Historic Treatment Procedures
- Section 01 74 19 – Construction Waste Management and Disposal
- Section 02 05 00 – Common Work Results for Existing Conditions
- Section 31 13 16 – Selective Tree and Shrub Protection and Trimming
- Section 31 25 00 – Erosion Control

SUBMITTALS

For utilities or other services requiring removal or abandonment in-place, submit materials documenting completion of such work.

Submit record drawings.

Submit copies of records documenting recycling or disposal of demolition materials from the site.

Identification of work to remain and to be protected. Identification of materials to be salvaged.

RECORD DRAWINGS

Maintain record drawings showing actual locations of utilities and other features encountered, and any deviations from the original design. Show actual limits of removal and demolition.

SAFETY

Verify that all gas and electrical utilities have been abandoned or disconnected and associated hazards mitigated, prior to beginning any demolition.

Contact Diggers Hotline at 1-800-242-8511 in accordance with statutory requirements. Request that non-member utilities and private utilities be located by the appropriate parties.

Take all necessary precautions while dismantling piping containing gas, gasoline, oil or other explosive or toxic fluids or gases. Purge lines and contain materials in accordance with all applicable regulations. Store such piping outdoors until fumes are removed.

Maintain a clean and orderly site. Remove debris at end of each workday.

Burning of debris is not permitted.

If hazardous materials are not anticipated, but encountered, terminate operations and contact the Owner Construction Representative immediately. Follow all applicable local, state and federal regulations pertaining to hazardous materials.

Contractor is solely responsible for worksite safety.

Perform all work in accordance with applicable OSHA, state and local safety standards.

PERMITS

Unless otherwise noted, Contractor shall be responsible for obtaining and paying for all permits necessary to complete demolition work.

If necessary, file and maintain Notification of Demolition and/or Renovation and Application for Permit Exemption (WDNR Form 4500-113) in accordance with the Wisconsin Administrative Code Chapter NR447.

DISCONNECTION OF SERVICES

Prior to starting removal and/or demolition operations be responsible and coordinate disconnection of all existing utilities, communication systems, alarm systems and other services.

Disconnect all services in manner which insures continued operation in facilities not scheduled for demolition.

Disconnect all services in manner which allows for future connection to that service.

Disconnect services to equipment at unions, flanges, valves, or fittings wherever possible.

PROVISIONS FOR FUTURE WORK

Refer to drawings.

REMOVAL/SALVAGING OF ITEMS

Carefully remove all items that are scheduled to be salvaged.

Secure salvaged items to allow for future movement; provide pallets, skids and other devices as necessary. Secure all loose parts.

Provide crates, padding, tarps and other measures necessary to protect salvaged items during storage. Store items in secure location, safe from vandalism, weather, dust and other adverse elements.

Where salvaged items are indicated to be turned over to Owner, deliver to location on property where designated by Owner.
Where indicated to be incorporated into new work, store the salvaged item in secure location until trade responsible for re-installation mobilizes his equipment and storage facilities to the site, or otherwise accepts responsibility for the salvaged item.

OWNER SALVAGED OR REMOVED MATERIALS
See Section 01 35 91.

P A R T 2 - M A T E R I A L S

EQUIPMENT
Use Contractor's normal equipment for demolition purposes and which meets all safety requirements imposed on such equipment.

P A R T 3- E X E C U T I 0 N

PROTECTION OF EXISTING WORK AND FACILITIES
Take all measures necessary to safeguard all existing work and facilities which are outside the limits of the work.

Confine work to the minimum area reasonably necessary to undertake the work as determined by the Owner Construction Representative. In no case shall construction activities extend beyond state property lines or construction easements.

Furnish and install shoring, fencing or other barriers as shown on the plans or as otherwise necessary to protect existing features. Obtain approval from Owner’s Construction Representative of identification of elements to be protected prior to proceeding with deconstruction.

Verify the locations of, and protect, any building elements, buildings, structures, utilities, paved surfaces, historic cultural features, signs, streetlights, utilities, landscaping and all other such facilities that are intended to remain or be salvaged as noted on drawings. Historic cultural features include the existing sidewalks to remain, the concrete channel and the stone retaining wall at the south side of the building.

Make such explorations and probes as necessary to ascertain any required protection measures that shall be used before proceeding with demolition.

Provide and maintain adequate catch platforms, warning lights, barricades, guards, weather protection, dust protection, fences, planking, bracing, shoring, piling, signs, and other items required for proper protection. Provide protection for workers, public, adjacent construction and occupants of existing building(s).

Report damage of any facilities or items scheduled for salvaging to the Owner Construction Representative.

Repair, replace or reconstruct any damaged facilities that are not scheduled for demolition.

Explosives shall not be used for demolition.

Keep streets, walks and all other adjacent paved areas clean and swept clear of dirt, mud and debris deposited as a result of this operation.

Protect surrounding area from dust. Control rodents, and other vermin associated with demolition operations. Provide temporary enclosure for interior rooms during demolition, including the Tunnel.

Do not interrupt utilities serving occupied facilities without permission from the A/E and authorities having jurisdiction. If necessary, provide temporary utilities.

Cease operations if public safety or remaining structures are endangered. Perform temporary corrective measures until operations can be continued properly.

If necessary, provide additional materials to protect existing building components that are to remain. Where necessary to prevent collapse of any construction, install temporary shores, struts or bracing. Do not commence demolition work until all temporary construction is complete.

Take precautions to guard against movement, settlement or collapse of any surrounding construction designated to remain and be liable for any such movement, settlement or collapse.

DEMOLITION

Remove all equipment, fixtures and other materials scheduled for salvage prior to beginning demolition operations.

Demolish and remove all portions of buildings and structures scheduled for demolition as shown on the plans.

Abandoned piping may remain in place in the tunnel, cap piping at ends within tunnel for cutting and patching of tunnel walls.

Abandon gas, electric and communication utilities in accordance with local utility company requirements, or applicable substantive requirements if considered private.

Carry out vehicle loading as necessary within the project boundaries or as defined or indicated on the drawings, but not in locations that block vehicular traffic on the streets or pedestrian traffic on adjacent public walks.

Dismantle each structure in an orderly manner to provide complete stability of the structure at all times. Provide bracing and shoring where necessary to avoid premature collapse of structure or damage to portions of the buiding to remain.

Conduct demolition operations and the removal of rubbish and debris in such a way that a minimum of nuisance dust is caused. Constantly sprinkle rubbish and debris with water if necessary to keep nuisance dust to a minimum.

Where necessary to prevent collapse of any construction, install temporary shores, underpinning, struts or bracing. Do not commence demolition work until all temporary construction is complete.

During the execution of the work, provide, operate, and maintain all pumping equipment, suction and discharge lines in a number of capacity as required to keep all cellars and pits free of water from any source whatsoever at all times.

Masonry and concrete shall be demolished in small sections. Use braces and shores as necessary to support the structure of the building or structure and protect it from damage. Where limits of demolition

are exposed in the finished work, cutting shall be made with saws, providing an absolutely straight line, plumb, true and square.

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 minimum.

BUILDING DEMOLITION

Remove all equipment, fixtures and other materials scheduled for salvage prior to beginning demolition operations.

Proceed with demolition in a systematic manner, from top of structure to ground. Complete demolition work above each floor or tier before disturbing supporting members on lower levels.

Neatly saw or cut joints at the limits of removal; whenever possible, locate cutes at existing joints. Refer to drawings for scope of existing building to remain and where removal of brick is required in lieu of sawcutting.

Cut existing plaster with power saws equipped with plaster cutting blades and dust collection system.

Patch or repair any damaged surfaces or structural members at the limits of removal.

Remove structural framing members and lower to ground by hoists, derricks or other suitable means. Refer to drawings for required evaluation of structural members adjacent to Veranda to remain.

Remove existing flooring in accordance with plans. Remove all sealant, fasteners and damaged or rotten blocking from existing construction to remain where demolition occurs. If hazardous materials are not anticipated, but encountered, terminate operations and contact the Owner Construction Representative immediately

Locate demolition equipment and remove structure so as to not impose excessive loads to supporting walls, floors or framing.

Break up and remove concrete slabs-on-grade, unless otherwise shown to remain.

Remove all structures, retaining walls, stairs, paved surfaces, vegetation, and any other items; noted on the drawings to be removed or demolished.

DEMOLITION BELOW GRADE

Demolish foundation walls and other below grade features in accordance with the plans. Unless otherwise noted, remove all below grade features to a point 4’ below adjoining existing grade, or proposed grade, whichever is lower. Basement and/or lowest level floors more than 4’ below existing grade need not be removed, but must be broken up to permit drainage.

DEMOLITION BACKFILL

Backfill and compact below grade areas and voids resulting from demolition of structures and other abandonment and demolition.

Backfilling shall not begin until demolition and abandonment has been approved and documented by the Owner Construction Representative.

Prior to placement of fill materials, ensure that areas to be filled are free of standing water, frost, frozen materials, trash and debris.

Backfill type, lift thickness and compaction requirements shall be in accordance with Section 31 20 00 – Earthwork.

DRAIN TILE

Carefully protect and/or replace drain tiles encountered during demolition which are necessary to maintain site drainage conditions. Immediately repair or replace any drain tiles not scheduled for demolition, but damaged. Report damage to the Owner Construction Representative.

Repairs to drain tile or replacement drain tile shall be comparable or better than the existing drain tile system.

Test drain lines with water to assure free flow before covering. Remove all obstructions which may be found, retest until satisfactory.

TRANSPORTATION AND DISPOSAL OF DEMOLITION WASTE

Transport and dispose all demolition waste in accordance with local, state, and federal guidelines.

Whenever possible, or otherwise required by the Contract Documents, recycle demolition waste.

Demolition waste shall be disposed of at a landfill or dumpsite designed and approved to accept the given waste.

Maintain records documenting recycling and disposal of demolition waste. Record description of material, date removed, quantity removed, method of transport and recycling/disposal destination.

Remove materials without disruption to Owner or facility operations.

CLEANING

All adjacent areas shall be broom cleaned and ready to receive new construction.

The Contractor shall restore all disturbed areas in accordance with the drawings and specifications. If plans and specifications do not address restoration of specific areas, these areas will be restored to pre-construction conditions as approved by the Owner Construction Representative.

END OF SECTION 02 41 13

SECTION 04 01 00

MAINTENANCE OF MASONRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 govern work under this Section.

1.02 WORK INCLUDED

A. Section includes maintenance of stone assemblies consisting of stone restoration and cleaning as follows:
   1. Unused anchor removal.
   2. Repairing brick and stone masonry, including replacing whole units with salvaged units.
   3. Painting steel uncovered during the work.
   4. Patching stone.
   5. Repointing joints.
   6. Preliminary cleaning, including removing plant growth.
   7. Cleaning exposed brick and stone masonry surfaces.

1.03 RELATED WORK

A. Section 01 35 91, Historic Treatment Procedures

B. Section 01 74 19, Recycling

C. Section 04 05 19, Masonry Accessories

D. Section 04 20 00, Unit Masonry

E. Section 04 43 00, Stone Masonry

F. Section 07 92 00, Joint Sealants

1.04 DEFINITIONS

A. Cleaning: Gentle removal of surface soil, stains and foreign material. Use gentlest and least abrasive methods and materials possible to achieve results indicated. Masonry shall not be cleaned to look like new. Leaving existing, deeply embedded staining, soil, etc. is permissible where further cleaning will overly soak, scour or abrade masonry.

B. Low-Pressure Spray: Not to exceed 800 psi; 4 to 6 gpm.

1.05 SUBMITTALS

A. Submit in accordance to the General Conditions of the contract.

B. Product Data: For each product indicated. Include recommendations for application and use. Include test reports and certifications substantiating that products comply with requirements.

C. Shop Drawings: For the following:
   1. Replacement stone units and their jointing, showing relation of existing to new units.
   2. Setting number of each new stone unit and its location on the structure in annotated plans and elevations.

3. Provisions for expansion joints or other sealant joints.
4. Provisions for flashing, lighting fixtures, conduits, and weep holes as required.
5. Replacement and repair anchors, including drilled-in pins. Include details of anchors within individual stone units, with locations of anchors and dimensions of holes and recesses in stone required for anchors, including direction and angle of holes for pins.

D. Samples for Initial Selection: For the following:

1. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/4 inch wide, set in aluminum or plastic channels.
   a. Have each set contain a close color range of at least five Samples of different mixes of colored sands and cements that produce a mortar matching the cleaned masonry when cured and dry.
   b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

2. Patching Compound: Submit sets of patching compound Samples in the form of patches in sample units of stone representative of the range of stone colors and textures on the building.
   a. Have each set contain a close color range of at least five Samples of different mixes of patching compound that matches the variations in existing stone when cured and dry.
   b. Tool patching compound to match adjacent stone profiles and patterns.

3. Sealant Materials: See Division 07 Section "Joint Sealants."
4. Include similar Samples of accessories involving color selection.

E. Samples for Verification: For the following:

1. Each type of sand used for pointing mortar; minimum 1/2 lb of each in plastic screw-top jars.
   a. For blended sands, provide Samples of each component and blend.
   b. Identify sources, both supplier and quarry, of each type of sand.

2. Each type, color, and texture of pointing mortar in the form of sample mortar strips, 6 inches long by 1/4 inch wide, set in aluminum or plastic channels.
   a. Include with each Sample a list of ingredients with proportions of each. Identify sources, both supplier and quarry, of each type of sand and brand names of cementitious materials and pigments if any.

3. Each type of stone patching compound in form of briquettes, at least 3 inches long by 1-1/2 inches wide. Document each Sample with manufacturer and stock number or other information necessary to order additional material.
4. Sealant Materials: See Division 07 Section "Joint Sealants."
5. Accessories: Each type of anchor, accessory, and miscellaneous support.

F. Qualification Data: For firms and persons specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and addresses of A/Es and owners, and other information specified.

G. Cleaning program indicating cleaning process, including protection of surrounding materials on building and Project site, and control of runoff during operations. Describe in detail the materials, methods, and equipment to be used.

1. If materials and methods other than those indicated are proposed for cleaning work, provide a written description, including evidence of successful use on other comparable projects, and a testing program to demonstrate their effectiveness for this Project.

1.06 QUALITY ASSURANCE

A. Restoration Specialist: Engage an experienced masonry restoration and cleaning firm that has completed work similar in material, design, and extent to that indicated for this Project and with a record of successful in-service performance.

1. At Contractor's option, the work may be divided between 2 specialist firms: One for cleaning work and one for repair work.

B. Source Limitations: Obtain each type of material for stone restoration (stone, cement, sand, etc.) from one source with resources to provide materials of consistent quality in appearance and physical properties.

C. Quality-Control Program: Prepare a written quality-control program for this Project to systematically demonstrate the ability of personnel to properly follow methods and use materials and tools without damaging masonry. Include provisions for supervising performance and preventing damage due to worker fatigue.

D. Restoration Program: Prepare a written, detailed description of materials, methods, equipment, and sequence of operations to be used for each phase of restoration work including protection of surrounding materials and Project site.
1. Include methods for keeping pointing mortar damp during curing period.
2. If materials and methods other than those indicated are proposed for any phase of restoration work, add to the Quality-Control Program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and worker's ability to use such materials and methods properly.

E. Cleaning Program: Prepare a written cleaning program that describes cleaning process in detail, including materials, methods, and equipment to be used, protection of surrounding materials, and control of runoff during operations.
1. If materials and methods other than those indicated are proposed for any phase of restoration work, add to the Quality-Control Program a written description of such materials and methods, including evidence of successful use on comparable projects, and demonstrations to show their effectiveness for this Project and worker's ability to use such materials and methods properly.

F. Cleaning and Repair Appearance Standard: Cleaned and repaired surfaces are to have a uniform appearance as viewed from 50 feet away by A/E. Perform additional paint and stain removal, general cleaning, and spot cleaning of small areas that are noticeably different, so that surface blends smoothly into surrounding areas.

G. Mockups: Prepare field samples for restoration methods and cleaning procedures to demonstrate aesthetic effects and qualities of materials and execution. Use materials and methods proposed for completed Work and prepare samples under same weather conditions to be expected during remainder of Work.

1. Cleaning: Prepare samples approximately 5 sq. ft. in area for each type of masonry and surface condition.
2. Paint, Stain, Tar and Mastic Removal: Prepare spot samples for each type of masonry and surface condition.

a. Test methods on samples of adjacent materials for possible adverse reactions, unless methods are known to have a deleterious effect.

3. Repointing: Prepare an areas approximately 36 inches high by 48 inches wide for each type of repointing required; one for demonstrating methods and quality of workmanship expected in removing mortar from joints and the other for demonstrating quality of materials and workmanship expected in pointing mortar joints.
4. Notify A/E 7 days in advance of the dates and times when samples will be prepared.
5. Obtain A/E's approval of mockups before starting the remainder of masonry restoration and cleaning.
6. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
7. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
8. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

H. Preinstallation Conference: Conduct conference at Project site.
1. Review methods and procedures related to stone restoration and cleaning including, but not limited to, the following:
a. Construction Schedule: Verify availability of materials, Restoration Specialist's personnel, equipment, and facilities needed to make progress and avoid delays.
b. Materials, material application, sequencing, tolerances, and required clearances.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver other materials to Project site in manufacturer's original and unopened containers, labeled with type and name of products and manufacturers.

B. Store cementitious materials off the ground, under cover, and in a dry location.

C. Store aggregates, covered and in a dry location, where grading and other required characteristics can be maintained and contamination avoided.

D. Comply with manufacturer's written instructions for minimum and maximum temperature requirements for storage.

1.08 PROJECT CONDITIONS

A. Do not repoint mortar joints or repair masonry unless air temperature is between and 40 and 80 deg F and will remain so for at least 48 hours after completion of Work.

B. Hot-Weather Requirements: Protect restoration work when temperature and humidity conditions produce excessive evaporation of water from mortar and patching materials. Provide artificial shade and wind breaks and use cooled materials as required. Do not apply mortar to substrates with temperatures of 90 deg F and above.

C. Clean masonry surfaces only when air temperature is 40 deg F and above and will remain so for at least 7 days after completion of cleaning.

D. For manufactured repair materials, perform work within the environmental limits set by each manufacturer.

E. 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.

F. Protect sills, ledges, and projections from mortar droppings.

1.09 SEQUENCING AND SCHEDULING

A. Perform masonry cleaning work in the following sequence:

1. Repair existing masonry, including replacing existing masonry with salvaged masonry materials.
2. Inspect for open mortar joints and repair before cleaning to prevent the intrusion of water and other cleaning materials into the wall.
3. Clean masonry surfaces. Remove paint, mastic, adhesives, etc. before general cleaning.
4. Rake out existing mortar from joints indicated to be repointed.
5. Point existing mortar joints of masonry indicated to be restored.

B. Perform hot-water masonry cleaning work during May through September only.

1.010 ENVIRONMENTAL REQUIREMENTS

A. Regional Materials (MR Credit 5.1&5.2): Provide materials or products that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of the project site.
1. Water: Minimum 100%
2. Mortar: Minimum 100%
3. Aggregate: Minimum 100%

PART 2 - PRODUCTS

2.01 MANUFACTURED REPAIR MATERIALS

A. Stone Patching Compound: Factory-mixed cementitious product that is custom manufactured for patching stone.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. Cathedral Stone Products, Inc.; Jahn Restoration Mortars.
   b. Conproco Corporation; Mimic.
   c. Edison Coatings, Inc.; Custom System 45.

2. Use formulation that is vapor- and water permeable (equal to or more than the stone), exhibits low shrinkage, has lower modulus of elasticity than the stone units being repaired, and develops high bond strength to all types of stone.
3. Use formulation having working qualities and retardation control to permit forming and sculpturing where necessary.
4. Formulate patching compound in colors, textures, and grain to match stone being patched. Provide not less than three colors to enable matching each piece of stone.
   a. Include custom color matching with existing stone.

2.02 MORTAR MATERIALS

A. Confirm all mortar materials are compatible with existing materials.
B. Portland Cement: ASTM C 150, Type II (white, non-staining).

1. Low-Alkali Cement: Provide cement containing not more than 0.60 percent total alkali when tested according to ASTM C 114.

C. Hydrated Lime: ASTM C 207, Type S.

D. Aggregate for Mortar: ASTM C 144, unless otherwise indicated.

1. Mortar Aggregate: Natural sand selected to produce mortar color indicated. For pointing mortar, provide sand with rounded edges.
2. Match color, size, texture, and gradation of existing mortar aggregate as closely as possible.

E. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Davis Colors; True Tone Mortar Colors.
   b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
   c. Solomon Colors, Inc.; SGS Mortar Colors.

F. Water: Potable.

2.03 MORTAR MIXES

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

1. Mixing Pointing Mortar: Thoroughly mix cementitious and aggregate materials together before adding any water. Add remaining water in small portions until reaching mortar of the desired consistency. Use mortar within 30 minutes of final mixing; do not retemper or use partially hardened material.
2. Do not use admixtures, including pigments, air-entraining agents, accelerators, retarders, water- repellent agents, antifreeze compounds, or other admixtures, unless otherwise indicated. Do not use calcium chloride.

B. Colored Mortar: Produce mortar of color required by using specified ingredients. Do not alter specified proportions without A/E's approval.
1. Mortar Pigments: Where mortar pigments are indicated, do not exceed a pigment- to cement ratio of 1:10 by weight.

C. Do not use admixtures in mortar unless otherwise indicated.

D. Mortar Proportions: Mix mortar materials in the following proportions:

1. Limit cementitious materials in mortar to Portland cement and lime.
2. Pointing Mortar for Masonry: 1 part Portland cement, 6 parts lime, and 12 parts natural-mortar aggregate.
3. Formulate mortar pigment blend as required to produce color indicated or, if not indicated, as selected from manufacturer's standard colors.
   a. Pigments shall not exceed 10 percent of portland cement/lime by weight.

2.04 CLEANING MATERIALS

A. Hot Water for Cleaning: Potable.
1. Temperature: 180-190 deg. F.

B. Job-Mixed Detergent Solution: Solution prepared by mixing 2 cups of tetrasodium polyphosphate, 1/2 cup of laundry detergent, and 20 quarts of hot water for every 5 gal. of solution required.
   1. No chemical cleaners are allowed.

C. Job-Mixed Mold, Mildew, and Algae Remover: Solution prepared by mixing 2 cups of tetrasodium polyphosphate, 5 quarts of 5 percent sodium hypochlorite (bleach), and 15 quarts of hot water for every 5 gal. of solution required.

2.05 ACCESSORY MATERIALS

A. Stone Anchors and Pins: Type and size indicated or, if not indicated, to match existing anchors in size and type. Fabricate anchors and pins from Type 304 stainless steel.

B. Lead Joint Caps: Soft lead strip with contoured cap.
   1. Manufacturer: WEATHERCAP, Inc., www.weathercap.net.
   2. Model: A or B as required for joint type.

C. Sealant Materials:
   1. Provide manufacturer's standard chemically curing, elastomeric sealant(s) of base polymer and characteristics indicated below that comply with applicable requirements in Division 07 Section "Joint Sealants."
      a. Multi-component, non-sag urethane sealant.

   2. Colors: Provide colors of exposed sealants to match colors of stonework adjoining installed sealant unless otherwise indicated.
      a. Sealant color selected by A/E from manufacturer’s full range.

D. Antirust Coating: Fast-curing, lead- and chromate-free, self-curing, universal modified-alkyd primer complying with MPI #79, Alkyd Anticorrosive Metal Primer or SSPC-Paint 20 or SSPC-Paint 29 zinc-rich coating.
   1. Use coating requiring no better than SSPC-SP 2, "Hand Tool Cleaning" or SSPC-SP 3, "Power Tool Cleaning" surface preparation according to manufacturer's literature or certified statement.
   2. Use coating with a VOC content of 420 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.01 PREPARATION

A. General: Protect building surfaces against damage from exposure to run off water.

B. Protect persons, motor vehicles, surrounding surfaces of building being restored, building site, plants, and surrounding buildings from injury resulting from masonry restoration work.

   1. Do not clean masonry during winds of sufficient force to spread cleaning methods to unprotected surfaces.
   2. Dispose of runoff from cleaning operations by legal means and in a manner that prevents soil erosion, undermining of paving and foundations, damage to landscaping, and water penetration into building interiors.
   3. Erect temporary protection covers over pedestrian walkways and at points of entrance and exit for persons and vehicles that must remain in operation during course of masonry restoration work.

C. Protect adjacent surfaces from contact with overspray by covering them polyethylene film and waterproof masking tape.

3.02 UNUSED ANCHOR REMOVAL

A. Remove stone anchors, brackets, wood nailers, and other extraneous items no longer in use unless identified as historically significant or indicated to remain.
   1. Remove items carefully to avoid spalling or cracking stone.
   2. Where directed, if an item cannot be removed without damaging surrounding stone, do the following:
      a. Cut or grind off item flush with masonry surface without damaging adjacent masonry.
      b. Core drill a recess approximately 3/4 inch beneath surface in surrounding stone as close around item as practical.
      c. Immediately paint exposed end of item with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended dry film thickness per coat. Keep paint off sides of recess.

B. Patch the hole with mortar where each item was removed unless directed to remove and replace the masonry unit.
      a. Use colored mortar mix that most closely matches masonry unit.

3.03 STONE REMOVAL AND REPLACEMENT

A. At locations indicated, remove stone that has deteriorated or is damaged beyond repair or is to be reused. Carefully demolish or remove entire units from joint to joint, without damaging surrounding stone, in a manner that permits replacement with full-size units.

B. Support and protect remaining stonework that surrounds removal area. Maintain flashing, reinforcement, lintels, and adjoining construction in an undamaged condition.

C. Notify Architect of unforeseen detrimental conditions including voids, cracks, bulges, and loose units in existing stone or unit masonry backup, rotted wood, rusted metal, and other deteriorated items.

D. Remove in an undamaged condition as many whole stone units as possible.
   1. Remove mortar, loose particles, and soil from stone by cleaning with hand chisels, brushes, and water.
   2. Remove sealants by cutting close to stone with utility knife and cleaning with solvents.
   3. Store stone for reuse. Store off ground, on skids, and protected from weather.
   4. Deliver cleaned stone not required for reuse to Owner unless otherwise indicated.

E. Clean stone surrounding removal areas by removing mortar, dust, and loose particles in preparation for replacement.

F. Replace removed damaged stone with other removed stone and salvaged stone in good quality, where possible, or with new stone matching existing stone, including size. Do not use broken units unless they can be cut to usable size.

G. Do not allow face bedding of stone. Before setting, inspect to verify that each stone has been cut so that, when it is set in final position, natural bedding planes are essentially horizontal. Reject and replace stone with vertical bedding planes except as required for arches, lintels, and copings.

H. Install replacement stone into bonding and coursing pattern of existing stone. If cutting is required, use a motor-driven saw designed to cut stone with clean, sharp, unchipped edges. Finish edges to blend with appearance of edges of existing stone.
   1. Maintain joint width for replacement stone to match existing joints.

I. Set replacement stone with completely filled bed, head, and collar joints. Butter vertical joints for full width before setting and set units in full bed of mortar unless otherwise indicated. Replace existing anchors with new anchors of size and type indicated.
   1. Rake out mortar used for laying stone before mortar sets and point new mortar joints in repaired area to comply with requirements for repointing existing stone, and at same time as repointing of surrounding area.
   2. When mortar is sufficiently hard to support units, remove shims and other devices interfering with pointing of joints.

3.04 PAINTING STEEL UNCOVERED DURING THE WORK

A. Inspect steel exposed during stone removal. Where Architect determines that it is structural, or for other reasons cannot be totally removed, prepare and paint it as follows:

   1. Remove paint, rust, and other contaminants according to SSPC-SP 2, "Hand Tool Cleaning" or SSPC-SP 3, "Power Tool Cleaning", as applicable to meet paint manufacturer's recommended preparation.
   2. Immediately paint exposed steel with two coats of antirust coating, following coating manufacturer's written instructions and without exceeding manufacturer's recommended rate of application (dry film thickness per coat).

B. If on inspection and rust removal, the cross section of a steel member is found to be reduced from rust by more than 1/16 inch, notify Architect before proceeding.

3.05 STONE PATCHING

A. Patch the following stone units unless another type of replacement or repair is indicated.

B. Remove and replace existing patches unless otherwise indicated or approved by Architect.

C. Remove deteriorated material and remove adjacent material that has begun to deteriorate.
   1. Carefully remove additional material so patch will not have feathered edges but will have square or slightly undercut edges on area to be patched and will be at least 1/4 inch thick, but not less than recommended by patching compound manufacturer.

D. Mask adjacent mortar joint or rake out for repointing if patch will extend to edge of stone unit.

E. Mix patching compound in individual batches to match each stone unit being patched. Combine one or more colors of patching compound, as needed, to produce exact match.

F. Brush-coat stone surfaces with slurry coat of patching compound according to manufacturer's written instructions.

G. Place patching compound in layers as recommended by patching compound manufacturer, but not less than 1/4 inch or more than 2 inches thick. Roughen surface of each layer to provide a key for next layer.
   1. Trowel, scrape, or carve surface of patch to match texture and surrounding surface plane or contour of the stone. Shape and finish surface before or after curing, as determined by testing, to best match existing stone.
   2. Build patch up 1/4 inch above surrounding stone and carve surface to match adjoining stone after patching compound has hardened.

H. Keep each layer damp for 72 hours or until patching compound has set.

I. Remove and replace patches with hairline cracks or that show separation from stone at edges, and those that do not match adjoining stone in color or texture.

3.06 CLEANING MASONRY, GENERAL

A. Proceed with cleaning in an orderly manner; work from top to bottom.

B. Protect existing windows, doors, vents and other wall openings from water penetration. Temporarily point or seal cracks and open or badly deteriorated joints to prevent water from entering walls. Divert water away from base of building with polyethelene sheeting or other means.

C. Use only those cleaning methods indicated for each masonry material and location.

1. Use natural-fiber brushes only.
2. No sand or grit blasting is permitted.
3. No acid washing or acid cleaners are permitted.

D. Perform each cleaning method indicated in a manner that results in uniform coverage of all surfaces, including corners, moldings, and interstices, and that produces an even effect without streaking or damaging masonry surfaces.

E. Water Application Methods: Where water application methods are indicated, comply with the following:

1. Water-Soak Application: Soak masonry surfaces by applying water continuously and uniformly to limited area for time indicated. Apply water at low pressures and low volumes in multiple fine sprays using perforated hoses or multiple spray nozzles. Erect a protective enclosure constructed of polyethylene sheeting to cover area being sprayed.
2. Spray Applications: Spray apply water to masonry surfaces to comply with requirements dictated for location, purpose, water temperature, pressure, volume, and equipment. Unless other- wise indicated, hold spray nozzle at least 24 inches from surface of masonry and apply water from side to side in overlapping bands to produce uniform coverage and an even effect.
3. Low pressure, clear water spray.

F. Chemical Cleaner Application Methods: Not allowed

3.07 CLEANING STONE MASONRY

A. Remove all existing sealant and backer rod from stone masonry joints where indicated to be replaced.

B. Plant Growth, Efflorescence, Paint, Stain, Tar and Mastic Removal: Only use water and a stiff nylon or fiber brush to spot-remove foreign material on exposed faces of existing stone masonry.

C. Coordinate removal of existing sealant and re-sealing of stone masonry joints to prevent water from penetrating the building envelope.

D. Cold-Water Soak:

1. Apply cold water by intermittent spraying to keep surface moist.

2. Use perforated hoses or other means that will apply a fine water mist to entire surface being cleaned.
3. Apply water in cycles with at least 30 minutes between cycles.
4. Continue spraying until surface encrustation has softened sufficiently to permit its removal by water wash, as indicated by cleaning tests. Continue spraying for 72 hours.
5. Remove soil and softened surface encrustation from stone with cold water applied by low-pressure spray.

E. Hot-Water Wash: Clean masonry with water applied as follows in areas indicated:

1. Low-pressure, hot-water spray and soaking.
2. Apply detergent and gently scrub stone to loosen heavy soil deposits or stains only.
   a. Scrub stone in direction of grain, tooling or long dimension of unit to avoid leaving scrub marks on stone.
3. Rinse with water to remove soil and detergent.
4. Apply rinse by low-pressure spray.
5. Repeat cleaning procedure above where required to produce the cleaning effect established by mockup.

F. Detergent Cleaning:
1. Wet stone with hot water applied by low-pressure spray.
2. Scrub stone with detergent solution using medium-soft brushes until soil is thoroughly dislodged and can be removed by rinsing. Use small brushes to remove soil from mortar joints and crevices. Dip brush in solution often to ensure that adequate fresh detergent is used and that stone surface remains wet.
3. Rinse with hot water applied by low-pressure spray to remove detergent solution and soil.
4. Repeat cleaning procedure above where required to produce cleaning effect established by mockup.

G. Mold, Mildew, and Algae Removal:
1. Same procedure as detergent cleaning using mold, mildew and algae removal solution.

3.08 REPOINTING MASONRY

A. Rake out joints as follows:

1. Rake out mortar from joints to depths equal to 2-1/2 times their widths, not 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. Cut out mortar at joint intersections and irregular joints or profiles by hand with chisel and resilient mallet.
   b. Cut out center of mortar bed joints using angle grinders with diamond-impregnated metal blades. Remove remaining mortar by hand with chisel and resilient mallet.
      1) Use power-operated grinders only based on submission by Contractor of a satisfactory quality-control program and demonstrated ability of operators to use tools without damaging masonry. Quality-control program shall include provisions for supervising performance and preventing damage due to worker fatigue.

B. Point joints as follows:

1. Rinse masonry-joint surfaces with water to remove dust and mortar particles. Time rinsing application so, at the time of pointing, excess water has evaporated or run off and joint surfaces are damp but free of standing water.
2. Apply the first layer of pointing mortar to areas where existing mortar was removed to depths greater than surrounding areas. Apply in layers not greater than 3/8 inch until a uniform depth is formed. Compact each layer thoroughly and allow it to become thumbprint hard before applying the next layer.
3. After joints have been filled to a uniform depth, place remaining pointing mortar in 3 layers with first and second layers each filling about two-fifths of joint depth; third layer, the remaining one- fifth. Fully compact each layer and allow to become thumbprint hard before applying next layer. Where existing masonry has rounded edges, slightly recess final layer from face. Take care not to spread mortar over edges onto exposed masonry surfaces or to featheredge mortar.
4. When mortar is thumbprint hard, tool joints to match original appearance of joints, unless otherwise indicated. Remove excess mortar from edge of joint by brushing.
5. Tool joints to form concave surface slightly recessed from face of masonry. Gradually blend tooling where new pointing abuts existing mortar of different appearance to eliminate a sharp break line between new and existing mortar.
6. Cure mortar by maintaining in a damp condition for at least 72 hours.
7. Where repointing work precedes cleaning of existing masonry, allow mortar to harden at least 30 days before beginning cleaning work.

3.09 LEAD JOINT CAP INSTALLATION

A. Install lead joint caps where indicated on Drawings in full bed of sealant with backer rod according to manufacturer's written instructions.

3.010 FINAL CLEANING

A. After mortar has fully hardened, thoroughly clean exposed masonry surfaces of excess mortar and foreign matter; use stiff-nylon or -fiber brushes and clean water, spray applied at a low pressure.

B. Do not use metal scrapers or brushes.

C. Do not use acidic or alkaline cleaners.

END OF SECTION 04 01 00

SECTION 04 05 19

MASONRY ACCESSORIES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Single Wythe Wall Reinforcing

B. Ties and Anchors

C. Lintel Reinforcing

1.03 RELATED WORK

A. Section 04 10 00, Mortar and Masonry Grout

B. Section 04 20 00, Unit Masonry

C. Section 04 72 00, Cast Stone Masonry

D. Section 05 50 00, Metal Fabrications (lintel & shelf angles)

1.04 SUBMITTALS

A. Submit in accord with the General Conditions of the Contract.
   1. Shop drawings showing profiles, joint treatment, gauge and finish of flashing.
   2. Manufacturer's Literature
      a. Manufacturer's product literature for each accessory specified.

1.05 SUSTAINABLE DESIGN REQUIREMENTS

A. Recycled content: Provide products manufactured from recycled content as specified.
   1. Steel: Minimum 50% post-consumer recycled content.

PART 2 - PRODUCTS

2.01 ACCESSORIES, GENERAL

A. Materials: Including, but not limited to the following, ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
   1. Provide hot-dipped galvanized accessories unless noted otherwise, ASTM A153 Class 2 (1.50 ounces per square foot)
      a. Prime following welded fabrication.

2.02 REINFORCEMENT

A. Reinforcing Steel:
   1. Reinforcing Bars:

a. Uncoated deformed steel, ASTM A615, Grade 60.

2.03 JOINT REINFORCEMENT

A. Masonry Joint Reinforcement, General: ASTM A 951/A 951M.
1. Prefabricated welded-wire units with deformed continuous side rods and plain cross rods, straight lengths of not less than 10'-0".
2. Steel Wire Size: 9 gauge side and cross rods.
3. Width: Approximately 2 inches less than nominal width of walls and partitions.
4. Mortar coverage: Minimum 5/8-inch on joint faces exposed to exterior and 1/2-inch elsewhere.
5. Provide hot-dipped galvanized reinforcing, ASTM A153, Class B2, unless noted otherwise.
6. Furnish prefabricated corners and tees.

B. Single Wythe Wall Reinforcing
1. Ladder type joint reinforcement, cross rods spaced not more than 16 inches on center.
a. Heckman Building Products
b. Dur-O-Wal, Ladur.
c. Hohmann & Barnard, No. 220.
d. Or approved equal.

2.04 TIES AND ANCHORS

A. Materials: Provide ties and anchors specified in this article that are made from materials that comply with the following unless otherwise indicated.
1. Hot-Dip Galvanized, Carbon-Steel Wire: ASTM A 82/A 82M; with ASTM A 153/A 153M, Class B-2 coating.
2. Steel Plates, Shapes, and Bars: ASTM A 36/A 36M.

B. Wire Ties, General: Unless otherwise indicated, size wire ties to extend at least halfway through veneer but with at least 5/8-inch cover on outside face. Outer ends of wires are bent 90 degrees and extend 2 inches parallel to face of veneer.

C. Individual Wire Ties: Rectangular units with closed ends and not less than 4 inches wide.
1. Z-shaped ties with ends bent 90 degrees to provide hooks not less than 2 inches long may be used for masonry constructed from solid units.
2. Where wythes [do not align] [are of different materials], use adjustable ties with pintle-and-eye connections having a maximum adjustment of 1-1/4 inches
3. Wire: Fabricate from 1/4-inch-diameter, hot-dip galvanized steel.

D. Veneer Anchors:
1. Hohmann & Barnard BL-5407, hot-dip galvanized
2. Or approved equal.

2.05 MISCELLANEOUS ANCHORS

A. Anchor Bolts:
1. Steel bolts with hex nuts and flat washers, ASTM A307, Grade A.
a. Hot-dip galvanized, Class C.
b. In sizes and configurations indicated.

B. Post-installed Anchors: Chemical or torque-controlled expansion anchors with capability to sustain, without failure, a load equal to 6 times the load imposed when installed in concrete, per ASTM E488 testing by qualified testing agency.
   1. Material: Stainless-steel components complying with ASTM F593 and ASTM F594, Alloy Group 1 or 2.
      a. Bolts and nuts ASTM F738 and ASTM F 836.
      b. Anchors: ASTM A666 or ASTM A 276 304 or 316.

   2. Acceptable manufactures subject to compliance with requirements:
      a. Dur-O-Wall, Inc.
      b. Heckman Building Products, Inc.
      c. Hohmann & Barnard
      d. Masonry Reinforcing Corporation of America
      e. National Wire Products Industries

C. Shelf Angle Anchors: Unit type masonry inserts in concrete: cast iron or malleable iron inserts of type and size indicated.

2.06 FLASHING

A. Metal Flashing: Provide metal flashing complying with SMACNA's "Architectural Sheet Metal Manual" and Division 07 Section "Sheet Metal Flashing and Trim" and as follows:
   1. Metallic Wall Flashing: Pre-finished Galvanized: ASTM A653, G-90; 20 gauge galvanized steel.
   2. Metal Counter/Cap Flashing: 24 gauge pre-finished galvanized steel.

B. Fabricate wall flashing to conform to <u>actual</u> dimensions of wall and as follows:
   1. Exposed portion of flashing, when installed, shall break surface of wall uniformly.
   2. Concealed portion of flashing shall have a minimum 4” vertical back dam; bend between back dam and horizontal shall be slightly greater than 90 degrees.
      a. End dams shall be a minimum of 2” in height.
   3. Exposed portion of flashing shall have a 1/2” hemmed drip outer edge, bent down 30 degrees.
   4. Provide prefabricated continuous pieces fabricated specifically for each corner; pieces shall be a minimum of 18” in length, in both directions from the corner.
   5. Notch and lap joints 3" between sections.
   6. Form all pieces in lengths of 8’-0” minimum, sections less than 3’ are unacceptable unless that section comprises the entire run.
   7. At counterflashing, form in 8-foot sections, lap end joints 3 inches. Do not seal joints; make continuous at angles; overlap base flashing minimum of 3 inches.
   8. Miter and seam inside and outside corners using rivets and polyurethane sealant. Outside corners shall be prefabricated with outside face of section broken at corner; seam at corner is unacceptable. Pieces shall be a minimum of 18” in length, in both directions from the corner.
   9. Sections shall be uniform, accurately fitted so as to line up straight and true and rigidly secured in place, without kinks or buckles. Joints at corners and angles shall be smooth, tight and neatly mitered and seamed.

2.07 MISCELLANEOUS

A. Termination Bars: 304 stainless steel.

B. Compression Seal: Flexible semi-closed urethane
   1. Brock White No. 4290 Shok Pak

2. Or approved equal.
3. Installed 1/2" thicker than joint thickness.

C. Bond Breaker Strips:
1. Asphalt-saturated organic roofing felt, ASTM D226, Type I, (No. 15 asphalt felt).

D. Isolation Sheet: 4 mil polyethylene; use to separate incompatible metals from direct contact.

E. Pipe Sleeves: Schedule 40, ASTM A53, 14 inches long.
1. Provide and install as indicated on Drawings.

F. Flashing fasteners to concrete to masonry: Zinc-alloy expansion shields with hardened steel pins.

G. Solder: ASTM B32; 50% pig lead - 50% block tin.

H. Masonry Cleaners
1. Do not use cleaning agents other than water without approval of A/E and unit manufacturer.
2. Job-Mixed Detergent Solution: Solution of 1/2-cup dry measure tetrasodium polyphosphate and 1/2-cup dry measure laundry detergent dissolved in 1 gallon of water.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Work of Other Trades: Prior to commencing work, carefully inspect, with installer present, and verify that work is complete to point where this installation may properly commence.

3.02 INSTALLATION OF ACCESSORIES IN MASONRY

A. See Section 04 20 00 for installation of accessories.

B. Concrete masonry walls shall be reinforced at every other bed joint with joint reinforcement.

C. Install wall flashing as follows:
1. Slope flashing to drain with masonry grout under horizontal portion of flashing.
2. Apply a continuous bead of sealant within the laps between sections.

D. Cleaning Reinforcing: Before placing, remove loose rust, ice, and other soiled materials from reinforcing.

END OF SECTION

SECTION 04 10 00

MORTAR AND MASONRY GROUT

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Mortar.

B. Masonry Grout.

1.03 RELATED WORK

A. Maintenance of Masonry: Section 04 01 00.

B. Masonry Accessories: Section 04 05 19.

C. Unit Masonry: Section 04 20 00.

D. Stone Masonry: Section 04 43 00.

1.04 SUBMITTALS

A. Submit in accord with the General Conditions of the Contract.

1. Test Reports: Submit information copies of all test reports in duplicate to the Architect/Engineer.
2. Refer to Section 04 20 00 - Unit Masonry for pre-installation conference requirements.
3. Pointing Mortar: Submit sets of mortar for pointing in the form of sample mortar strips, 6 inches long by 1/4 inch wide, set in aluminum or plastic channels.
   a. Have each set contain a close color range of at least five Samples of different mixes of colored sands and cements that produce a mortar matching A/E's sample when cured and dry.
   b. Submit with precise measurements on ingredients, proportions, gradations, and sources of colored sands from which each Sample was made.

B. Provide mock-ups as indicated on Drawings.
   1. All components of wall construction, wall openings, wall base, sills, flashing, etc. to be included in mock-up as indicated on drawings. Confirm compatibility with existing materials.

1.05 ENVIRONMENTAL REQUIREMENTS

B. Regional Materials (MR Credit 5.1&5.2): Provide materials or products that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of the project site.
   1. Mortar: Minimum 100%.
   2. Water: Minimum 100%.

PART 2 - PRODUCTS

2.01 MORTAR MATERIALS

A. Portland Cement: ASTM C150, Type 1 or II, except Type III may be used for cold-weather construction.

B. Hydrated Lime: ASTM C207, Type S.

C. Aggregate for Mortar: ASTM C144.
   1. For joints less than 1/4 inch thick, use aggregate graded with 100 percent passing the No. 16 sieve.

D. Water: Potable.

E. Antifreeze Compounds: Not allowed.

F. Masons Cement: Not allowed.

G. Chloride mixtures: Not allowed.

H. Air entrainment: Not allowed

I. Mortar Pigments: Natural and synthetic iron oxides and chromium oxides, compounded for use in mortar mixes and complying with ASTM C 979. Use only pigments with a record of satisfactory performance in masonry mortar.

   1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
      a. Davis Colors; True Tone Mortar Colors.
      b. Lanxess Corporation; Bayferrox Iron Oxide Pigments.
      c. Solomon Colors, Inc.; SGS Mortar Colors.

   2. Color: As selected by A/E from manufacturer's full range.

2.02 GROUT MATERIALS

A. Grout: ASTM C476, Slump 8-9 inches.

B. Aggregate for Grout: ASTM C 404.

2.03 MEASURING AND MIXING

A. Measure and mix in accordance with ASTM C270.

B. Mix mortar as required for immediate use only and discard any mixed for a period exceeding 2-1/2 hours.

C. Mortar Proportions by Volume.

Mortar Type	Parts by Volume (Port.Cem.)	Parts by Volume (Lime)	Aggregate measured in a damp, loose condition
S	1	over 1/4 to 1/2	Not less than 2-1/4 and not more than 3 time the sum of the volumes of the

Cement and lime used.

D. The specific proportions of the mortar materials shall be controlled and accurately maintained during the entire progress of the work.

E. Thoroughly mix cementitious materials and aggregates with the amount of water to produce satisfactory workability. All mortar shall be machine mixed.

F. Contractor's Option: Spec Mix, Inc. (licensed manufacturers only) using the same materials and proportions of material specified above.
   1. Licensed Manufacturers:
      a. Wisconsin: Twin City Concrete Products [800-642-3887]
      b. Quikrete Wisconsin [800-657-0789]
      c. Tews Company [414-447-8400]
   2. Material shall be delivered to jobsite in manufacturer's prepackaged bags indicating manufacturer's name, materials and proportions of materials.
   3. Use manufacturer's proprietary dispensing silo.

PART 3 - EXECUTION

3.01 APPLICATION

A. See Section 04 20 00 for application.

3.02 FIELD QUALITY CONTROL

A. Determine the water retentivity and compressive strength of mortar in accordance with the test procedures described in ASTM C780

B. Mix mortar for testing in the laboratory from representative samples of mortar materials and proportions to be used in the construction.

C. Make compressive strength tests on one set of samples before starting masonry work.

END OF SECTION 04 10 00

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SECTION 04 20 00

UNIT MASONRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Reinstallation of Salvaged Brick, Salvaged Stone, Cast Stone (Stone).

B. Concrete Masonry.

C. Masonry Cleaning.

1.03 RELATED WORK

A. Historic Treatment Procedures, Section 01 35 91.

B. Recycling: Section 01 74 19.

C. Maintenance of Masonry: Section 04 01 00.

D. Mortar and Masonry Grout: Section 04 10 00.

E. Masonry Accessories: Section 04 05 19.

F. Cast Stone Masonry: Section 04 72 00.

G. Joints Sealants: Section 07 92 00.

1.04 QUALITY ASSURANCE

A. Masonry Units: From one manufacturer for each kind of unit required.

B. Prior to commencement of work conduct a pre-installation conference with the Architect/Engineer and Owner Project Representative in accord with the General Conditions of the Contract. Obtain Architect/Engineer acceptance of work before continuing work.

C. Masonry Units: Salvaged Brick for Reinstallation

D. Production and construction of concrete masonry shall be in accordance with the building code requirements for concrete masonry structure, ACI (American Concrete Institute) 530.1, latest edition, and the NCMA technical guide.

E. Inspected Workmanship stress values were used in design. Appropriate inspection shall be required.

1.05 SUBMITTALS

A. Submit in accord with the General Conditions of the Contract.
   1. Sealant Materials: See Division 07 Section "Joint Sealants."

B. Provide mock-ups as indicated on Drawings.
   1. All components of wall construction, wall openings, wall base, sills, flashing, etc. to be included in mock-up as indicated on drawings.
   2. Mock-up to be stand-alone assembly separate from work at the building.
   3. Include shop drawings for mock-up unit masonry components and installation.

1.06 PROJECT CONDITIONS

A. During erection, cover top of walls with waterproof sheeting at end of each day's work. Cover partially completed structures when work is not in progress.

B. Extend cover a minimum of 24 inches down both sides and hold cover securely in place.

C. Do not apply uniform floor or roof loading for at least 12 hours after building masonry walls or columns.

D. Do not apply concentrated loads for at least 3 days after building masonry walls or columns.

E. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Immediately remove grout or mortar in contact with such masonry. Protect base of walls from rain-splashed mud and mortar splatter by means of coverings spread on ground and over wall surface.

F. Protect sills, ledges and projections from droppings of mortar.

G. Cold Weather Protection:
   1. Do not lay masonry units which are wet or frozen.
   2. Remove any ice or snow formed on masonry bed by carefully applying heat until top surface is dry to the touch.
   3. Remove all masonry determined to be damaged by freezing conditions.
   4. Perform the following construction procedures while masonry work is progressing. Temperature ranges indicated below apply to air temperatures existing at time of installation except for grout. For grout, temperature ranges apply to anticipated minimum night temperatures. In heating mortar and grout materials, maintain mixing temperatures selected within 10ºF.
   5. 40ºF to 20ºF: Mortar:
      a. Heat mixing water and sand to produce mortar temperatures between 40ºF and 120ºF; maintain temperature of mortar on boards above freezing.
   6. Grout:
      a. Heat grout materials to 90 F to produce in-place grout temperature of 70ºF at end of work day.
   7. 25ºF and Below: Mortar:
      a. Heat mixing water and sand to produce mortar temperatures between 40ºF and 120ºF. Maintain temperature of mortar on boards above freezing.
   8. Grout: Heat grout materials to 90ºF to produce in-place grout temperature of 70ºF at end of work day.
   9. Masonry Units: Heat masonry units so that they are above 20ºF at time of laying.
      a. Provide enclosure and auxiliary heat to maintain an air temperature of at least 40ºF for 24 hours after laying units.
      b. Protect completed masonry and masonry not being work on by maintaining air temperature above 40ºF on both sides of masonry for 72 hours after laying.

H. Hot Weather Protection:
   1. Protect masonry construction from direct exposure to wind and sun when erected in ambient air temperatures of 95ºF with relative humidity less than 50%.
   2. Masonry walls shall be adequately braced to resist wind forces until permanent design supports are in place and functional. The contractor shall design bracing.

PART 2 - PRODUCTS

2.01 GENERAL

2.02 CONCRETE MASONRY UNITS (CMU)

A. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" (15-5/8" x 7-5/8" actual), unless otherwise indicated or require by existing conditions.

B. Special Shapes: Provide where required for lintels, corners, jambs, sash, control joints, headers, bonding and other special conditions.

C. Standard: ASTM C90, Type II, normal weight.

D. Unit Compressive Strength: Provide units with minimum average net-area compressive strength of 2000 psi.

E. Admixtures: As approved by A/E. Calcium chloride or admixtures containing calcium chloride shall not be permitted.

2.03 FACE BRICK

A. Face Brick – Salvaged brick, cleaned for reinstallation.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Build walls, partitions to full thickness shown, except single wythe walls to actual thickness, using units of nominal sizes shown or specified.

B. Provide flush joints on all masonry concealed or which will receive an applied finish.

C. Fill all collar joints solid with mortar, except cavity walls.

D. Lay all units true to dimensions, plumb and square, and bond and proper anchored with vertical joints aligned plumb and true.

E. No sight exposed broken, chipped or cracked units allowed. Chips and cracks allowed under ASTM C90 will be allowed at areas not sight exposed.

F. Build-in grounds, nailing boards, anchors, lintels, flashing, accessories and similar items as required.

G. Form chases, slots and similar voids, and patch masonry work as required for all trades. Break out of face shells after installation not allowed. Provide minimum of 8 inches solid masonry between chase and adjacent chases, recesses or openings.

H. Bond or tie with steel ties all intersections of walls, columns and partitions, Incorporate control joint filler and column wrap where detailed.

I. Take care to wipe masonry work with rough cloth or brush as work progresses to prevent unsightly and unnecessary mortar stains. Do not wait until mortar reaches final set before cleaning.

J. In laying masonry avoid over-plumbing and pounding of the corners and jambs to fit stretcher units after being set in position. Where an adjustment must be made after the mortar has started to set, remove mortar and replace with fresh mortar.

K. Cut masonry units with power equipment designed for the purpose.

L. As necessary, set one course on floor slab as an outline to define various room areas as an aid for roughing-in of pipes, conduits and similar items.

M. Build all conduits, switch boxes, receptacle boxes, access panels, similar items within partitions and masonry where required.

N. Set all bucks, blocking, and anchors as required.

O. No cells or unfinished ends exposed.

P. Do not allow scaffolding or other objects to bump or rub against masonry.

Q. Provide minimum of 8 inches solid masonry at all door jambs and at each end of masonry wall panels and at openings.

R. Bond all intersecting masonry walls together. Where interior exposed masonry walls intersect exterior walls at right angles, install control joint filler and leave joint free of mortar for sealing.

S. Keep concrete masonry units dry at all times prior to delivery to job site, well off the ground and well covered at the job site and keep exposed walls dry by covering entire walls at the end of each day or shut down period with waterproof material.

T. Rake out mortar joints where required for application of sealant.

U. Place horizontal joint reinforcement continuous every 16 inches vertically, except that such reinforcement shall not be continued through control joints. Lap ends and corners a minimum of 6 inches.
   1. Use prefabricated "L" and "T" units at corners and intersecting walls.

V. Construct continuous control joints in the manner and at locations indicated on Project Drawings. Keep control joints in true vertical line and delay sealing as long as work permits in order to allow for maximum action to take place at these joints. Insert rubber control joint material where detailed.

W. Fill all joints between masonry and structure above solid with mortar except where compressible filler is detailed. Delay grouting or sealing until dead load deflection of structure above has taken place.

X. In multi-wythe walls, provide reinforcement as specified in Section 04 05 19. Space 16 inches on center vertically.
   1. Ties engage eyes or slots in reinforcement and extend at least halfway through facing wythe but with at least 5/8-inch cover on outside face.
   2. Space veneer anchors and ties a minimum of 16 inches horizontal and vertical.

Y. When resuming work after stopping, clean exposed surfaces of set masonry, wet lightly (if specified to be wetted) and remove all loose units and mortar before commencing with new work.

Z. Completely fill jambs and head of hollow metal door frames in masonry walls with grout as specified in 04 10 00.

AA. Install all angles, lintels, and miscellaneous steel support pieces as shown on drawings.
1. Mason to provide all stainless steel bolts and anchors.

3.02 LAYING BRICK

A. Lay in running bond unless otherwise noted.

B. Double tool all exposed joints to a slightly concave, densely compacted joint using 5/8 inch round clean tool when mortar becomes thumb hard.

C. Wet brick having absorption rates (ASTM C67) greater than 0.025 oz. per sq. in. per minute so that rate of absorption when laid does not exceed this rate. Use method of wetting so each unit is nearly saturated but surface dry when laid.

D. Lay in full beds of mortar, completely filling all bed and head joints. Do not slush head joints.

E. Provide solid brick units in all locations where any portion of normal bed base of brick is exposed.

F. Provide open head joints in vertical joints of bottom course in exterior wythe of face brick 16 inches o.c. for air space cavity drainage and in vertical joints of top course in exterior wythe of face brick at 32 inches on center for cavity wall pressure equalization.
1. All open head joints and weep holes to be in-filled with louvered inserts with fine stainless mesh to prevent insects from entering cavity.
2. Bottom course means first course laid on wall flashing or steel lintel common to cavity at any level.

B. Place open head joints in between bricks in vertical mortar joint with top member across top of bricks to keep mortar out of vertical joint and to provide mortar free air passage.

3.02 LAYING CONCRETE MASONRY

A. Lay in running bond except where otherwise shown.

B. Double tool all exposed joints of regular concrete masonry units to a slightly concave, densely compacted joint. Cut off concealed joints flush.

C. Do not lay wet units.

D. Lay with full mortar coverage on horizontal and vertical face shells as well as web beds.

E. Where built-in items are to be embedded in cores of units, place a layer of metal lath in joint below and rod mortar or grout into core.

3.03 REINFORCING

A. Reinforce masonry lintels, structural masonry walls as detailed.

B. Position reinforcing in manner that will prevent movement during placement of grout.

C. Place grout, as specified in Section 04 10 00, having compressive strength of 3,000 psi, completely filling all voids in inner wythes around reinforcing.

D. Provide length of reinforcing for lintels to include bearing.

E. Where grouting of cells occurs, align vertical cells to provide a continuous, unobstructed opening.

3.04 FLASHING

A. Incorporate all flashing provided by other Sections.

B. Refer to Project Drawings for type, location.

3.05 SEALANT

A. Install sealant joints in control joints at locations indicated:
   1. Sealant color at vertical masonry joints to match color of adjacent masonry.
   2. Sealant color at horizontal mortar joints to match color of mortar.

3.06 PROTECTION

A. At the completion of work each day or each shut-down period, cover the top of all unfinished masonry work exposed to the weather with waterproof canvas tarpaulins, securely weighted down in place. Keep these covers in place at all times over unfinished work except while work is in progress.

3.07 POINTING AND CLEANING

A. Upon completion of the work, fill all holes in exposed mortar joints with fresh mortar and suitably tool.

B. After pointing has set and hardened, thoroughly clean all exposed surfaces with stiff brushes, cleaning tools and potable water. Flush clean with a low pressure water stream.

C. Protect adjoining work not being cleaned such as glass, wood, finished floors, slabs and similar items during cleaning operations.

D. After cleaning with water and brush, thoroughly rinse all surfaces by washing off all dirt and mortar particles using clean, low pressure water.

E. Leave all exposed masonry clean free from mortar and with tight mortar joints.

END OF SECTION 04 20 00

SECTION 04 72 00

CAST STONE MASONRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 SUMMARY

1.03 SECTION INCLUDES:

A. Cast stone (Stone)

1.04 RELATED SECTIONS:

A. Section 01 74 19, Recycling.

B. Section 04 20 00, Unit Masonry for installing cast stone units.

1.05 SUBMITTALS

A. Submit in accordance with the General Conditions of the contract.

B. Product Data: For each type of product indicated.
   1. For cast stone units, include construction details, material descriptions, dimensions of individual components and profiles, and finishes.

C. Shop Drawings: Show fabrication and installation details for cast stone units. Include dimensions, details of reinforcement and anchorages if any, and indication of finished faces.
   1. Include building elevations showing size of units, layout of units and locations of joints and anchors.
      a. Provide a method of unit identification and location of each unit.
   2. Engineer approved and stamped drawings shall be included which shall address all aspects of the cast stoned construction. Including, but not limited to the following.
      a. Plant casting and strength tests.
      b. Imbed fasteners and attachment devices.
      c. Loading, supporting, and carrying capacities.

D. Samples for Verification:
   1. For color and texture of cast stone required, 10 inches square in size.

E. Full-Size Samples: For each color, texture, and shape of cast stone unit required.
   1. Make available for A/E's review at Project site or at manufacturing plant, if acceptable to A/E.
   2. Make Samples from materials to be used for units used on Project immediately before beginning production of units for Project.

F. Mock-up:
   1. Provide mock up of masonry for approval prior to proceeding. Acceptable work may remain in place as a part of the work.

G. Qualification Data: For manufacturer and testing agency.
   1. Include copies of material test reports for completed projects, indicating compliance of cast stone with ASTM C 1364.

H. Material Test Reports: For each mix required to produce cast stone, based on testing according to ASTM C 1364, including test for resistance to freezing and thawing.
   1. Provide test reports based on testing within previous two years.
   2. Compressive Strength: Comply with ASTM C1194. Minimum at 28 days.
   3. Absorption: ASTM C 1195 6% maximum cold water method, 10% maximum boiling water method at 28 days.
   4. Air Content: ASTM C 173 or C 231 for wet cast shall be 4-8% for units exposed to freeze thaw environments.
   5. Linear Shrinkage: ASTM C 426 shall not exceed 0.065%.

1.06 QUALITY ASSURANCE

A. Manufacturer Qualifications: A qualified manufacturer of cast stone units similar to those indicated for this Project, which has sufficient production capacity to manufacture required units, and is a plant certified by the Cast Stone Institute or the Architectural Precast Association.

B. Testing Agency Qualifications: Qualified according to ASTM E 329 for testing indicated.

C. Source Limitations for Cast Stone: Obtain cast stone units through single source from single manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Coordinate delivery of cast stone with all aspects of construction to avoid delaying the Work and to minimize the need for on-site storage.

B. Pack, handle, and ship cast stone units in suitable packs or pallets.
   1. Lift with wide-belt slings; do not use wire rope or ropes that might cause staining. Move cast stone units, if required, using dollies with wood supports.
   2. Store cast stone units on wood skids or pallets with non-staining, waterproof covers, securely tied. Arrange to distribute weight evenly and to prevent damage to units. Ventilate under covers to prevent condensation.

C. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

D. Store mortar aggregates where grading and other required characteristics can be maintained and contamination can be avoided.

1.08 PROJECT CONDITIONS

A. Cold-Weather Requirements: Do not use frozen materials or materials mixed or coated with ice or frost. Do not build on frozen substrates. Comply with cold-weather construction requirements in ACI 530.1/ASCE 6/TMS 602.
   1. Cold-Weather Cleaning: Use liquid cleaning methods only when air temperature is 40 deg F and above and will remain so until cast stone has dried, but no fewer than seven days after completing cleaning.

B. Hot-Weather Requirements: Comply with hot-weather construction requirements in ACI 530.1/ASCE 6/TMS 602.

PART 2 - PRODUCTS

2.01 CAST STONE UNITS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   1. Edwards Cast Stone, Dubuque, IA
   2. Continental Cast Stone, Kansas City, MO
   3. Building Stone Products, Inc. Lemont, IL
   4. Corinthian Cast Stone Inc., Wyandanch, NY
   5. Or approved equal.
   6. MarcStone, Hampton MN.
   7. American Artstone Company.

B. Provide cast stone units complying with ASTM C 1364 using the vibrant dry tamp method or wet cast method. All units that have imbedded anchors are to be wet cast. Units that exceed the size or shape limitations of dry cast per the manufacturer are to be wet cast.
   1. Provide units that are resistant to freezing and thawing as determined by laboratory testing according to ASTM C 666/C 666M, Procedure A, as modified by ASTM C 1364.

C. Fabricate units with sharp edges and accurately reproduced details, with indicated texture on all exposed surfaces unless otherwise indicated.
   1. Slope exposed horizontal surfaces 1:12 to drain unless otherwise indicated.
   2. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
   3. Provide drips on projecting elements unless otherwise indicated.

D. Fabrication Tolerances:
   1. Variation in Cross Section: Do not vary from indicated dimensions by more than 1/8 inch.
   2. Variation in Length: Do not vary from indicated dimensions by more than 1/360 of the length of unit or 1/8 inch, whichever is greater, but in no case by more than 1/4 inch.
   3. Warp, Bow, and Twist: Not to exceed 1/360 of the length of unit or 1/8 inch, whichever is greater.
   4. Location of Grooves, False Joints, Holes, Anchorages, and Similar Features: Do not vary from indicated position by more than 1/8 inch on formed surfaces of units and 3/8 inch on unformed surfaces.
   5. Comply l surfaces 1:12 to drain unless otherwise indicated.
   6. Provide raised fillets at backs of sills and at ends indicated to be built into jambs.
   7. Provide drips on projecting elements unless otherwise indicated.
   8. Colors shall not vary from approved samples.

E. Reinforcement:
   1. As required to with stand per ASTM C 1364.
   2. Minimum of 0.25 percent of cross-sectional area of panels which exceed 24 inches in width.
   3. Minimum Reinforcing Cover: Twice diameter of reinforcing bars.
   4. Units less than 24 inches in either transverse or longitudinal direction may be unreinforced in that direction if structural conditions allow.

F. Cure units as follows:
   1. Cure units in enclosed moist curing room at 95 to 100 percent relative humidity and temperature of 100 deg F for 12 hours or 70 deg F for 16 hours.
   2. Keep units damp and continue curing to comply with one of the following:
      a. No fewer than five days at mean daily temperature of 70 deg F or above.
      b. No fewer than six days at mean daily temperature of 60 deg F or above.
      c. No fewer than seven days at mean daily temperature of 50 deg F or above.
      d. No fewer than eight days at mean daily temperature of 45 deg F or above.

G. Acid etch surfaces to be exposed to view after curing.

H. Colors and Textures: Custom as selected by Architect from manufacturer's full range. A four color blend will be used, match existing building.
   1. Color: Match existing stone on existing building.

a. Base Color similar to Edwards Cast Stone “60-040”.

2. Texture: Provide units with fine-grained texture to match existing.
   a. Texture 1: Corduroy finish.
   b. Texture 2: Smooth finish.

2.02 SOURCE QUALITY CONTROL

A. Engage a qualified independent testing agency to sample and test cast stone units according to ASTM C 1364.
   1. Include one test for resistance to freezing and thawing.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 SETTING CAST STONE IN MORTAR

A. Install cast stone units to comply with requirements in Section 04 20 00 "Unit Masonry."

3.03 ADJUSTING AND CLEANING

A. Remove and replace stained and otherwise damaged units and units not matching approved Samples. Cast stone may be repaired if methods and results are approved by Architect.

B. Replace units in a manner that results in cast stone matching approved Samples, complying with other requirements, and showing no evidence of replacement.

END OF SECTION 04 72 00

SECTION 05 50 00

METAL FABRICATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Steel Handrails, Interpretive Signage Mounting System, Thresholds, Bat Entry Cupola.

B. All angles and miscellaneous metals to be set in concrete.

C. All angles, tubes, bent metal, lintels and miscellaneous steel supports for stone or masonry.

D. All angles, tubes, bent metal for door, window, and roof framing.

E. Metal accessories.
1. Including, but not limited to, anchors, bolts, screws, joist hangers, and fasteners.

F. Misc. Metal Brackets, supports, etc. as shown on drawings.

1.03 RELATED WORK

A. Unit Masonry: Section 04 20 00.

B. Cast Stone Masonry: 04 72 00.

C. Painting: Section 09 90 00.

1.04 REFERENCES

A. Metal Fabrications shall be in strict accord with Wisconsin Commercial Building Code, Chapter 11 - "Accessibility".

1.05 SUBMITTALS

A. Submit in accord with the General Conditions of the Contract.
1. Shop drawings required for all items. Show all work to be fabricated with all construction details shown in appropriate scale, methods of attachments to other materials, finished dimensions, shop welds and grinding of welds, field assembly joints, etc.
2. Coordinate work with other suppliers and subcontractors; obtain their approved shop drawing where necessary, or obtain any necessary additional detail information regarding mounting conditions or other aspects of related work.

1.06 QUALITY ASSURANCE

A. Take field measurements prior to shop drawing preparation and fabrication.

B. Comply with the provisions of the following except as otherwise indicated:

1. AISC "Code of Standard Practice for Steel Buildings and Bridges".
2. AISC "Specifications for the Design, Fabrication, and Erection of Structural Steel for Buildings", including the "Commentary" and Supplements thereto as issued.
3. AISC "Specifications for Structural Joints using ASTM A 325 or A 490 Bolts" approved by the Research Council on Riveted and Bolted Structural Joints of the Engineering Foundation.
4. AWS D1.1 "Structural Welding Code".

C. Qualify welding process and welding operators in accordance with the AWS "Standard Qualification Procedure". Provide certification that welders to be employed in the work have satisfactorily passed AWS qualification tests within the previous twelve months. If recertification of welders is required, retesting will be the Contractor's responsibility.

D. Structural Performances
1. Platforms shall be capable of withstanding a uniform load of 100 lbs. per sq. ft. or a concentrated load of 300 lbs. located to produce maximum stress conditions.
2. Handrails and Interpretive Signage Support shall be capable of withstanding concentrated loads of 200 lbs. applied at any point in any direction or a uniform load of 50 lbs/ft applied horizontally at the top rail, whichever produces the greatest stress.

E. Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

1.07 DELIVERY, STORAGE AND HANDLING

A. Package, handle, deliver and store at the job site in a manner that will avoid damage or deformation. Damaged material will be rejected.

B. Items to be built into concrete, masonry, etc. shall be furnished by the respective contractor and the contractor shall build this into the work as the work progresses.

1.08 PROJECT CONDITIONS

A. Verify dimensions in field for pre-cut or prefabricated items.

B. Examine job conditions and adjoining construction which may affect the acceptability of the work.

C. Coordinate installation of anchorages for metal fabrications. Furnish setting drawings, templates, and directions for installing embedments and other items that are to be embedded in concrete. Deliver such items to Project site in time for installation.

1.09 SUSTAINABLE DESIGN REQUIREMENTS

A. Recycled content: Provide products manufactured from recycled content as specified.
1. Steel: Minimum 75% post-consumer recycled content.
2. Stainless steel: Minimum 50% post-consumer recycled content.
3. Aluminum: Minimum 50% post-consumer recycled content.

B. Regional Materials: Provide materials or products that have been extracted, harvested, or recovered, as well as manufactured, within 500 miles of the project site.
1. Steel: 50%.

C. Low-Emitting Materials, Field applied Paints and Coatings: Interior paints and coatings applied on-site must meet the limitations and restrictions concerning chemical components set by the following standards:
   1. Topcoat Paints, Green Seal Standard GS-11, Paints: First Edition, May 20, 1993.
   2. Anti-Corrosive and Anti-Rust Paints: Green Seal Standard GS-03, Anti-Corrosive Paints", Second Edition, January 7, 1997. For applications on ferrous metal substrates.
   3. "All Other Architectural Coatings, Primers and Undercoats: South Coast Air Quality Management District (SCAQMD) Rule #1113, Architectural Coatings", rules in effect on January 1, 2004.

D. Low-Emitting Materials, Adhesives, and Sealants: Materials used on the interior of the building (defined as inside the weatherproofing system and applied on site) must not exceed the following requirements.
   1. Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management (SCAQMD) Rule # 1168, requirements in effect on July 1, 2005, and rule amendment date January 7, 2005.
   2. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36, requirements in effect on October 19, 2000.

PART 2 - PRODUCTS

2.01 METAL FOR FABRICATIONS

A. Cold-rolled carbon steel sheets: ASTM A336.

B. Structural Steel Sheet: Hot rolled ASTM A570, or cold-rolled ASTM A611, of grade required for design loading, minimum of Grade C.

C. Galvanized carbon steel sheets: ASTM A446, with G90 zinc coating.

D. Welding materials: AWS D1.1; type required for materials being welded.

E. Shop coat primer: FS-TT-P-32, for shop application and field touch-up.

F. Touch-up primer for galvanized surfaces.
   1. Steel shapes and fasteners, in general, for exterior use and where built into exterior wall: zinc coated.

G. Structural Steel: ASTM A36.

H. Structural Steel Angles: ASTM A36, hot dipped galvanized.

I. Steel Pipe: ASTM A53, Type S, Grade A, standard weight, schedule 40.

J. Steel Bars and Bar Size Shapes: ASTM A 306, Grade 65, or ASTM A 36.

K. Castings: Gray iron, ASTM A48-83 Class 35B; or Ductile iron ASTM A536-80 Grade 65-45-12.

L. Stainless Steel: AISI Type 302/304, #4 finish, as specified vertical grain except as otherwise specified.

2.02 GALVANIZED STEEL

A. All exterior galvanized steel shall be hot-dipped galvanized.

1. Straighten steel shapes that are warped by hot-dipped galvanizing process.

2.03 ACCESSORIES

A. Concrete Inserts: Threaded or wedge type, galvanized ferrous castings, either malleable iron ASTM A 47 or cast steel ASTM A 27. Provide bolts, washers and shims as require, hot-dipped galvanized, ASTM A 153.

B. Fasteners: Including, but not limited to the following;
1. Provide zinc-coated fasteners for exterior use where built into exterior walls or where shown on drawings. Select fasteners for the type, grade and class required.
   a. Provide hot-dipped galvanized coating for fasteners less than 1/2" diameter that are in contact with pressure-treated wood.
2. Bolts and Nuts: Regular hexhead type, ASTM A 307, Grade A or Type 304 stainless steel, ASTM A 320. High Strength bolts and nuts, ASTM A 325.
3. Lag Bolts: Type, FS FF-B-561.
4. Machine Screws: Cadmium plated steel, FS FF-S-92, Security Screw
5. Wood Screws: Carbon steel, FS FF-S-111.
6. Plain Washers: Round, carbon steel, FS FF-W-92.
7. Concrete Anchorage Devices: Wedge-type expansion bolts, FS FF-S-325, Group II, Type 4, Class 1, zinc coated or stainless steel as shown on the drawings and installed in accordance with manufacturer's recommendations.
   a. "Kwik-bolt", Hilti Corporation.
   b. "Wej-it", Wej-it Corporation.
8. Masonry Sleeve Anchors: zinc coated or stainless as shown on the drawings.
   a. Rawl "Lok/Bolt".
   b. HILTI - Sleeve anchor.
9. Toggle Bolts: Spring-wing type, FS FF-B-558, Type I, Class I and Style 1 zinc coated or stainless steel as shown on the drawings.
10. Lock Washers: Helical spring type carbon steel, FS FF-W-84.
11. Epoxy bolt anchorage: HILTI (HY-10 or equal)

C. Electrodes for Welding: Comply with AWS code.

2.04 FABRICATION

A. Weld permanent connections wherever possible; use continuous welds where exposed. Grind smooth all welds where exposed; straighten members after welding.
1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
2. Obtain fusion without undercut or overlap.
3. Remove welding flux immediately.
4. At exposed connections, finish exposed welds and surfaces smooth and blended so no roughness shows after finishing and contour of welded surface matches that of adjacent surface.

B. Do shop cutting, drilling, fitting wherever possible. Field measure before fabrication when necessary or required.

C. Workmanship: Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

D. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

E. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, security (countersunk) screws or bolts.

F. Remove burrs and ease edges to a radius of approximately 1/32 inch, unless otherwise indicated. Remove sharp or rough areas on exposed surfaces.

2.05 MANUFACTURED UNITS

A. Structural Performance of Railings: Provide railings capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:

1. Top Rails of Guards:
    a. Uniform load of 50 lbf/ ft. applied in any direction.
    b. Concentrated load of 200 lbf applied in any direction.
    c. Uniform and concentrated loads need not be assumed to act concurrently.

2.06 STEEL FINISHES

A. Galvanizing: Hot-dip galvanize items as indicated to comply with applicable standard listed below:
1. ASTM A 123/A 123M, for galvanizing steel products.
2. ASTM A 153/A 153M, for galvanizing steel hardware.
3. Except for items indicated to be fabricated of stainless steel, exterior metal fabrication items shall be hot-dip galvanized.

B. Preparation for Shop Painting: Clean steel items free of mill scale, rust and foreign matter, grease, oil, dust, and dirt in accordance with SSPC SP-2, SP-3, or SP-7.

C. Shop Priming: Apply one shop coat of metal primer using manufacturer's standard primer, except stainless steel, galvanized steel, and other non-ferrous items.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Anchorage to masonry with expansion bolts, sleeves, toggle bolts or approved similar. Do not use wood plugs for anchorage.

B. Bolts, screws, and similar fastenings for field connections shall be of the same material and finish as the parts being fastened.

C. Immediately after erection, repaint field connections, weld burns, abraded surfaces. Scrape and wire brush loose and scaling paint to sound metal, follow with spot priming.

D. Install manufactured units and specialty products in accordance with the manufacturer's instructions and approved shop drawings.

E. Do not proceed with installation until conditions are satisfactory.

F. Install in accordance with approved shop drawings.

G. Perform field welding in accordance with AWS D1.1.

H. Corrosion Protection: Coat concealed metal surfaces that will come into contact with grout, concrete, or dissimilar metals with a heavy coat of bituminous paint.

I. Anchor powder coated flat stock to interior walls by drilling holes for ¼ inch studs and anchoring with epoxy.

3.02 ADJUSTING AND CLEANING

A. Touchup Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas. Paint uncoated and abraded areas with the same material as used for shop painting to comply with SSPC-PA 1 for touching up shop-painted surfaces.
   1. Apply by brush or spray to provide a minimum 2.0-mil dry film thickness.

B. Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and repair galvanizing to comply with ASTM A 780.

C. Protect stainless steel finishes from contamination by materials containing iron.

END OF SECTION

SECTION 06 20 00

FINISH CARPENTRY

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Carpentry work which is exposed to view, non-structural, and not specified as part of other sections.

B. The types of finish carpentry include, but are not necessarily limited to the following:
   1. Reinstalled salvaged wood door and wood casings, moldings at Veranda lower level opening.

1.03 RELATED WORK

A. Related Sections: The following sections contain requirements that relate to this section:

B. Historic Treatment Procedures: Section 01 35 91.

C. Joint Sealants: Section 07 92 00.

D. Door Hardware: Section 08 71 00.

E. Painting: Section 09 90 00 for painting and refinishing existing salvaged door.

1.04 SUBMITTALS

A. General: Submit each item in this article according to the General Conditions of the Contract.
   1. Shop drawings for all millwork; receive approval prior to fabrication; draw in related or dimensional position with sections shown either full size or 3-inch scale.
   2. Samples:
      a. One 24-inch- long section of wood running trim, casing, moulding, or similar lineal mill work where fabrication required to match existing.

B. Product Data: For each type of component required. Include but not limited to the following:
   1. Manufacturer’s data on hardware, accessories, and finishes.

1.05 REFERENCES

A. Western Red Cedar Lumber Association "Designer's Handbook".

1.06 QUALITY ASSURANCE

A. Quality Standards: Architectural Woodwork Quality Standards, Guide Specification and Quality Control Program as set forth by the Architectural Woodwork Institute (AWI).

B. Architectural Woodwork Manufacturer: Experienced in this type of work; successfully completed comparable work.

C. Deviations from quality, grade, species, and finish specified under AWI Interior Woodwork for Transparent Finish and Interior Woodwork for Paint Finish will be allowed for individual items or components only if specified under separate headings covering such items.

1.07 DELIVERY, STORAGE AND HANDLING

A. Protect finish carpentry materials during transit, delivery, storage and handling to prevent damage, soiling and deterioration.

B. Do not deliver finish carpentry materials until painting, wet work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed.

C. If finish carpentry materials must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.
   1. Conditioning: Installer shall advise Contractor of temperature and humidity requirements for finish carpentry installation areas. Do not install finish carpentry until required temperature and relative humidity have been stabilized and will be maintained in installation areas.
   2. Maintain temperature and humidity in installation area as required to maintain moisture content of installed finish carpentry within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. The fabricator of woodwork shall determine optimum moisture content and required temperature and humidity conditions.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Lumber standards: Comply with DOC PS 20, "American Softwood Lumber Standard," for lumber and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee Board of Review.

B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
   1. NELMA – Northeastern Lumber Manufacturers Association.
   2. NHLA – National Hardwood Lumber Association.
   3. NLGA – National Lumber Grades Authority.
   4. SPIB - Southern Pine Inspection Bureau.
   5. WCLIB – West Coast Lumber Inspection Bureau.
   6. WWPA – Western Wood Products Association.

C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.

D. For exposed lumber, furnish pieces with grade stamps applied to ends of back of each piece, or omit grade stamps entirely and provide certificates of grade compliance issued by inspection agency.

2.011 SCHEDULE OF MATERIALS

A. Wood, Solid
   1. Match existing exterior wood frames, White Oak quarter sawn.
      a. Painted.

2.012 ACCESSORIES

A. Provide nails, screws and other anchoring devices of the proper type, size, material and finish for application to provide secure attachment, concealed where possible, and complying with applicable Federal Specifications.
   1. Nails, Wire, Brads and Staples: FS FF-N-105.
   2. Power-Driven Fasteners: CABO NER-272.

B. Where interior finish carpentry materials are exposed in areas of high humidity, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A 153 or No. 304 stainless steel.

C. Glue: Aliphatic- or phenolic-resin wood glue recommended by manufacturer for general carpentry use. Exterior rated for exterior use.

D. Sealants: Comply with requirements of Division 7 Section "Joint Sealants" for materials required for sealing work.

2.013 FABRICATION

A. Wood Moisture Content: Comply with requirements of specified inspection agencies and manufacturer's recommendations for moisture content of finish carpentry on relative humidity conditions existing during time of fabrication and in installation areas.

B. Field Dimensions
   1. Millwork Manufacturer: Responsible for details, dimensions not controlled by job conditions; show on shop drawing all field measurements beyond his control. Contractor, Woodwork Manufacturer: Cooperate to establish, maintain these field dimensions.

C. Leave all surfaces clean and true and all exposed wood surfaces sanded parallel with grain, free of discernible marks and ready for work under Division 9 Section "Painting".

D. Back out or kerf backs of the following members, except members with ends exposed in finished work:
   1. Standing and running trim wider than 5 inches.

E. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius.

F. Ease edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting installation and performance of finish carpentry. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Condition wood materials to average prevailing humidity conditions in installation areas prior to installing.

B. Examine substrate before installation. Verify that substrate is sound and plumb/level. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Prime and backprime exterior wood, including cut ends, for painted, stained and oil finish exposed on the exterior. Comply with requirements for surface preparation and application in Division 9 Section “Painting”.

3.03 INSTALLATION

A. Do not use finish carpentry materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.
1. Do not use manufactured units with defective surfaces, sizes or patterns.

B. Install finish carpentry plumb, level, true and aligned with adjacent materials. Use concealed shims where required for alignment.

C. Scribe and cut finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.
1. Countersink nails; fill surface flush and sand where face nailing is unavoidable.

D. Install to tolerance of 1/8 inch in 96 inches for plumb and level. Install adjoining finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

E. Coordinate finish carpentry with materials and systems in or adjacent to standing and running trim and rails.
1. Provide cutouts for mechanical and electrical items that penetrate exposed surfaces of trim and rails.

F. Finish according to specified requirements.
1. Refer to Division 9 Sections for final finishing of finish carpentry.

3.04 INSTALLATION

A. Install wood doors plumb and square, with maximum diagonal distortion of 1/16 inch.

B. All frames, moldings and sticking to match existing or as shown on drawings.

C. Drill pilot holes in hardwood species before fastening as required to allow penetration of fasteners and to prevent splitting.
1. Fasten to prevent movement or warping.
a. Countersink fastener heads on exposed carpentry work.

3.05 ADJUSTING

A. Repair damaged or defective work as directed.

B. Adjust and lubricate hardware for proper operation.

3.06 CLEANING

A. Clean shop-finished woodwork, touch-up finish as required and remove and refinish damaged or soiled areas of finish.

B. Protect finish carpentry and maintain conditions necessary to ensure that work will be without damage or deterioration at time of acceptance.

END OF SECTION 06 20 00

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this section.

1.02 WORK INCLUDED

A. Miscellaneous Joints.

1.03 RELATED WORK

A. Division 4, Masonry, Sheet Metal Flashing and Trim.

B. Section 06 20 00, Finish Carpentry.

1.04 SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for initial selection: Manufacturer’s color charts.

C. Samples for final selection: Custom color range of actual material for selection.

D. Samples for exterior mockup selection: Custom color range of actual material installed in mockup for selection.

E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Field-Adhesion Test Reports: For each sealant application tested.

G. Warranties: Sample of special warranties.

1.05 PRECONSTRUCTION TESTING

A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Submit quantity required by joint sealant manufacturer of each kind of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
5. Retain subparagraph below if generic test data are acceptable.

6. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:
1. Locate test joints where indicated on Project or, if not indicated, as directed by A/E.
2. Conduct field tests for each application indicated below:
   a. Each kind of sealant and joint substrate indicated.
      1) Existing limestone.
      2) Existing brick and reinstalled salvaged brick.
3. Notify A/E seven days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.
   a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
      1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.
5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.06 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.
1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

1.07 PROJECT CONDITIONS

A. Examine the joint surfaces and backing, and their anchorage to the structure, and the conditions under which the joint sealer work is to be performed. Do not proceed with the joint sealer work until unsatisfactory conditions have been corrected.

B. Do not proceed with installation of sealants under adverse weather conditions, or when temperatures are below or above manufacturer's recommended limitations for installation. Proceed with the work

only when forecasted weather conditions are favorable for proper cure and development of high early bond strength. Wherever joint width is affected by ambient temperature variations, install sealants only when temperatures are in the lower third of manufacturer's recommended installation temperature range.

1.08 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   1. Warranty Period: Five years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:
   1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
   2. Disintegration of joint substrates from natural causes exceeding design specifications.
   3. Mechanical damage caused by individuals, tools, or other outside agents.
   4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

1.09 ENVIRONMENTAL REQUIREMENTS

A. Low-Emitting Materials, Adhesives, and Sealants: Materials applied on site must not exceed the following requirements.

   1. Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management (SCAQMD) Rule # 1168, requirements in effect on July 1, 2005, and rule amendment date January 7, 2005.
   2. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36, requirements in effect on October 19, 2000.

PART 2 - PRODUCTS

2.01 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. Stain-Test-Response Characteristics: Where sealants are specified to be non-staining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

C. Colors of Exposed Joint Sealants: As selected by A/E from manufacturer's full range, or custom colors where indicated.

2.02 SEALANT

A. Sealant for Locations Except as Specified in the Subsequent Paragraphs and related Sections:

1. Multi-part, Nonsag, Polyurethane: ASTM C 920, Type M, Grade NS, Class 50, for Use NT.
   a. PECORA, Dynatrol II.
   b. BASF, Sonneborn, Sonolastic NP-2.
   c. TREMCO, Dymeric 240.
   d. Or equal as approved by A/E.
      1) Equal means both quality and color options.

   e. Color: Custom color as selected by A/E.

2. Sealant at flashing: ASTM C920, Type M, Grade NS, Class 50, Use T, NT, M, A or O; multi-part polyurethane base, elastomeric joint sealing compound:
   a. Sika Chemicals "Sikaflex 2c NS"
   b. Degussa Sonneborn "Sonolastic NP2"
   c. Pecora “Dynatred”
   d. Tremco "Vulkem 227" or “Dymeric"
   e. Color: Selected by A/E from manufacturer’s full range of colors.

2.03 LATEX JOINT SEALANTS

A. Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. BASF Building Systems; Sonolac.
   b. OSI, Green Series, SA-167.
   c. Pecora Corporation; AC-20+.
   d. Tremco Incorporated; Tremflex 834.

2. Paintable.

2.04 SEALANT ACCESSORIES

A. Primer: When required, as recommended by the Sealant Manufacturer.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

D. Closed Cell Back-up (Backer Rod): ASTM C 1330, Type C.

1. Tremco "Closed Cell Backer Rod”.
2. Sonneborn "Sonofoam".
3. W.R. Meadows “Kool-Rod”.

E. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 JOINT PREPARATION

A. Clean joint surfaces immediately before installation of sealant. Remove dirt, insecure coatings, moisture and other substances which would interfere with bond of sealant. Etch concrete and masonry joint surfaces as recommended by sealant manufacturer. Roughen vitreous or glazed joint surfaces as recommended by sealant manufacturer.

B. Prime or seal the joint surfaces wherever shown or recommended by the sealant manufacturer. Do not allow primer/sealer to spill or migrate onto adjoining surfaces.

3.03 SEALANT APPLICATION, GENERAL

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Set joint filler units at proper depth or position in the joint to coordinate with other work, including the installation of bond breakers, backer rods and sealants.

1. Do not leave voids or gaps between the ends of joint filler units.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond breaker tape wherever shown and wherever required by manufacturer's recommendations to ensure that elastomeric sealants will perform properly.

E. Apply compound with a gun having proper size nozzle or with a knife, as required. Use sufficient pressure to fill all voids and joints solid. Remove excess sealant and leave surfaces smooth, neat and clean. Upon completion sealant shall have a smooth, even finish and all joints shall be weathertight. All work shall be in accordance with manufacturer's printed instructions.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.
    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

G. Do not allow sealants or compounds to overflow or spill onto adjoining surfaces, or to migrate into the voids of adjoining surfaces. Clean the adjoining surfaces by whatever means may be necessary to eliminate evidence of spillage.

3.04 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:
   1. Extent of Testing: Test completed and cured sealant joints as follows:
      a. Perform 5 tests for the first 1000 feet of joint length for each kind of exterior sealant and joint substrate.
      b. Perform 1 test for each 1000 feet of joint length thereafter or 1 test per each floor per elevation.

   2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
      a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

   3. Inspect tested joints and report on the following:
      a. Whether sealants filled joint cavities and are free of voids.
      b. Whether sealant dimensions and configurations comply with specified requirements.
      c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

   4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
   5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.05 PROTECTION

A. Cure sealants in compliance with manufacturer's instructions and recommendations. Advise the Contractor of procedures required for the cure and protection of joint sealers during the construction period, so that they will be without deterioration or damage (other than normal wear and weathering) at the time of Substantial Completion.

3.06 JOINT-SEALANT COLOR SCHEDULE

1. Provide different sealant colors, as selected by A/E from manufacturer's full range of colors, at the following joint locations, and as specified in related Sections:
   a. Cast Stone (Stone).
   b. Existing stone.

c. Existing face brick and reinstalled salvaged face brick.
d. Mortar joints.
e. Steel.

END OF SECTION 07 92 00

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SECTION 08 11 13

HOLLOW METAL DOORS AND FRAMES

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 WORK INCLUDED

A. Hollow Metal Door and Frame at Tunnel entry from Boiler House.

1.03 RELATED WORK

A. Joint Sealants: Section 07 92 00.

B. Door Hardware: Section 08 71 00.

C. Painting: Section 09 90 00.

D. Building in of anchors and grouting of frames in masonry construction is specified in Section 04 20 00.

1.04 REFERENCES

A. Comply with Steel Door Institute "Recommended Specifications: Standard Steel Doors and Frames" (SDI-100) and as herein specified.

B. Fire-Rated Doors: Comply with NFPA 80 "Standard for Fire Doors and Windows." and have been tested, listed, and labeled in accordance with ASTM E 152 "Standard Methods of Fire Tests of Door Assemblies" by a nationally recognized independent testing and inspection agency acceptable to authorities having jurisdiction.

C. ANSI A250.3 Test Procedure and Acceptance Criteria for Factory Applied Finish Painted Steel Surfaces for Steel Doors and Frames

D. ANSI A250.4 Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors and Hardware Reinforcings

E. ANSI A250.5 Accelerated Physical Endurance Test Procedure for Steel Doors, Frames, and Frame Anchors

F. ANSI A250.6 Hardware on Steel Doors (Reinforcement --Application)

G. ANSI A250.8 Nomenclature for Standard Steel Doors and Steel Door Frames

H. ANSI A250.10 Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames

I. ANSI/DHI A115 Specifications for Hardware Preparations in Standard Steel Doors and Frames

J. ANSI/DHI A115.1G Installation Guide for Doors and Hardware

K. SDI-Steel Door Institute

L. ASTM A240/A240M Standard Specification for Heat-Resisting Chromium and Chromium-Nickel Stainless Steel

M. ASTM A366 Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Commercial Quality

N. ASTM A568 Standard Specification for Steel, Sheet, Carbon, and High-Strength, Low-Alloy, Hot-Rolled and Cold-Rolled, General Requirements

O. ASTM A569 Standard Specification for Steel, Carbon (0.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality

P. ASTM A591 Standard Specification for Steel Sheet, Electrolytic Zinc-Coated, for light Coating Mass Applications

Q. ASTM A620 Standard Specification for Steel, Sheet, Carbon, Cold-Rolled, Drawing Quality, Special Killed

R. ASTM A653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvanealed) by the Hot-Dip Process

S. ASTM A924 Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process

T. American Welding Society

1.05 SUBMITTALS

A. Submit in accordance with the General Conditions of the Contract.
   1. Manufacturer's technical product data substantiating that products comply with requirements.
   2. Shop Drawings for fabrication and installation of steel doors and frames. Include details of each frame type, elevations of door design types, conditions at openings, details of construction, location and installation requirements of finish hardware and reinforcements, and details of joints and connections. Show anchorage and accessory items.
      a. Provide schedule of doors and frames using same reference numbers for details and openings as those on contract drawings.
   3. Oversize Construction Certification: For assemblies required to be fire rated and exceeding limitations of labeled assemblies.
   4. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each type of hollow metal door and frame assembly.

1.06 QUALITY ASSURANCE

A. Source Limitations: Obtain hollow metal work from single source from single manufacturer.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Deliver hollow metal work cartoned or crated to provide protection during transit and job storage.

1. Provide additional protection to prevent damage to finish of factory-finished units.

B. Deliver welded frames with two removable spreader bars across bottom of frames, tack welded to jambs and mullions.

C. Inspect hollow metal work upon delivery for damage. Minor damages may be repaired provided refinished items are equal in all respects to new work and acceptable to Construction Manager; otherwise, remove and replace damaged items as directed.

D. Store doors and frames at building site under cover. Place units on minimum 4 inch high wood blocking. Avoid use of non-vented plastic or canvas shelters which could create a humidity chamber. If cardboard wrapper on door becomes wet, remove carton immediately. Provide 1/4 inch spaces between stacked doors to promote air circulation.

1.08 PROJECT CONDITIONS

A. Examine the openings and conditions under which hollow metal work is to be installed. Do not proceed with the work until unsatisfactory conditions have been corrected.

PART 2 - PRODUCTS

2.01 MANUFACTURERS, HOLLOW METAL

A. Amweld Building Products

B. Ceco Door Products

C. Curries Company

D. Kewaunee Corporation

E. Mesker Door, Inc.

F. Steelcraft

G. Or approved equal.

2.02 MATERIALS

A. Cold-Rolled Steel Sheet: ASTM A 1008/A 1008M, Commercial Steel (CS), Type B; suitable for exposed applications.

B. Hot-Rolled Steel Sheet: ASTM A 1011/A 1011M, Commercial Steel (CS), Type B; free of scale, pitting, or surface defects; pickled and oiled.

C. Frame Anchors: ASTM A 591/A 591M, Commercial Steel (CS), 40Z coating designation; mill phosphatized.
1. For anchors built into exterior walls, steel sheet complying with ASTM A 1008/A 1008 or ASTM A 1011/A 1011M, hot-dip galvanized according to ASTM A 153/A 153M, Class B.

D. Inserts, Bolts, and Fasteners: Hot-dip galvanized according to ASTM A 153/A 153M.

E. Powder-Actuated Fasteners in Concrete: Fastener system of type suitable for application indicated, fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hollow metal frames of type indicated.

F. Grout: ASTM C 476, except with a maximum slump of 4 inches, as measured according to ASTM C 143/C 143M.

G. Mineral-Fiber Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers manufactured from slag or rock wool with 6- to 12-lb/cu. ft. density; with maximum flamespread and smoke-development indexes of 25 and 50, respectively; passing ASTM E 136 for combustion characteristics.

H. Glazing: Comply with requirements in Division 08 Section "Glazing."

I. Bituminous Coating: Cold-applied asphalt mastic, SSPC-Paint 12, compounded for 15-mil dry film thickness per coat. Provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.

J. Steel: Commercial quality, level, cold-rolled steel conforming to ASTM A366, free of scale and surface defects. Commercial quality hot rolled and pickled steel conforming to ASTM A569 may be used as option for interior frames. Standard hollow metal frame gauges are as follows (Bullet Resistant must meet specified resistance level):
   1. Interior Frames: 16-gage.
   2. Exterior Frames: 14-gage.
   3. Flush Doors: 16-gage (exterior), 18-gage (interior).
   4. Rough Bucks and Stiffeners: 12-gage.
   5. Miscellaneous Trim: 16 gage.

2.03 FABRICATION, GENERAL

A. Fabricate hollow metal work to be rigid and free of defects, warp, or buckle. Accurately form metal to required sizes and profiles, with minimum radius for thickness of metal. Where practical, fit and assemble units in manufacturer's plant. To ensure proper assembly at Project site, clearly identify work that cannot be permanently factory assembled before shipment.

B. Tolerances: Fabricate hollow metal work to tolerances indicated in SDI 117.

C. Fabricate concealed stiffeners, edge channels, and hardware reinforcement from either cold- or hot-rolled steel sheet.

D. Fabricate doors to a maximum tolerance of 1/16 inch from a straight edge when laid on face of door in any direction, including diagonal.

E. Provide proper Underwriters' Laboratory (UL) labels. Labeled doors shall have equal labeled frames.

F. Clearances
   1. Edge clearances shall be provided as follows:
      a. Between doors and frame, at head and jambs - 1/8 inch.
      b. At door sills:
         1) Where no threshold is used - 3/8 minimum.
         2) Where threshold is used - 1/4 inch maximum between door & threshold.

G. Hardware Preparation: Factory prepare hollow metal work to receive templated mortised hardware; include cutouts, reinforcement, mortising, drilling, and tapping according to the Door Hardware Schedule and templates furnished as specified in Division 08 Section "Door Hardware."
   1. Locate hardware as indicated, or if not indicated, according to ANSI/SDI A250.8.

2. Reinforce doors and frames to receive nontemplated, mortised and surface-mounted door hardware.
3. Comply with applicable requirements in ANSI/SDI A250.6 and ANSI/DHI A115 Series specifications for preparation of hollow metal work for hardware.
4. Coordinate locations of conduit and wiring boxes for electrical connections with Division 26 Sections.

2.04 HOLLOW METAL FRAME FABRICATION

A. Provide metal frames of the types and styles indicated on the drawings or schedules and complying with SDI for materials and construction requirements.

B. Provide metal frames for doors, transoms, sidelights, borrowed lites, and other openings, as shown on drawings.

C. Provide integral channel frames, sub frames and stiffeners to structure where indicated or required for fastening and stiffening frames.

D. Provide steel spreader temporarily attached to feet of both jambs for welded frames.

E. Completely clean all frames by degreasing process, followed by one coat rust inhibitive primer equal to withstand a salt spray test (5% solution) of 70 hours. Thoroughly prime all surfaces without runs, smears, or bare spots, and under and inside all removable stops.

F. Where frames are fabricated in sections due to shipping or handling limitations, provide alignment plates or angles at each joint, fabricated of same thickness metal as frames.

1. Welded Frames: Weld flush face joints continuously; grind, fill, dress, and make smooth, flush, and invisible.
2. Sidelight Frames: Provide closed tubular members with no visible face seams or joints, fabricated from same material as door frame. Fasten members at crossings and to jambs by butt welding.
3. Provide countersunk, flat- or oval-head exposed screws and bolts for exposed fasteners unless otherwise indicated.
4. Grout Guards: Weld guards to frame at back of hardware mortises in frames to be grouted.
5. Floor Anchors: Weld anchors to bottom of jambs and mullions with at least four spot welds per anchor.
6. Jamb Anchors: Provide number and spacing of anchors as follows:
    a. Masonry Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
        1) Two anchors per jamb up to 60 inches high.
        2) Three anchors per jamb from 60 to 90 inches high.
        3) Four anchors per jamb from 90 to 120 inches high.
        4) Four anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 120 inches high.

    b. Stud-Wall Type: Locate anchors not more than 18 inches from top and bottom of frame. Space anchors not more than 32 inches o.c. and as follows:
        1) Three anchors per jamb up to 60 inches high.
        2) Four anchors per jamb from 60 to 90 inches high.
        3) Five anchors per jamb from 90 to 96 inches high.
        4) Five anchors per jamb plus 1 additional anchor per jamb for each 24 inches or fraction thereof above 96 inches high.
        5) Two anchors per head for frames above 42 inches wide and mounted in metal-stud partitions.

c. Compression Type: Not less than two anchors in each jamb.
d. Postinstalled Expansion Type: Locate anchors not more than 6 inches from top and bottom of frame. Space anchors not more than 26 inches o.c.

7. Door Silencers: Except on weather-stripped doors, drill stops to receive door silencers as follows. Keep holes clear during construction.
a. Single-Door Frames: Drill stop in strike jamb to receive three door silencers.
b. Double-Door Frames: Drill stop in head jamb to receive two door silencers.

2.05 HOLLOW METAL DOOR FABRICATION

A. Top and bottom edges of all doors shall be closed with a continuous recessed steel channel not less than 16-gauge, full width spot welded to both faces.

B. All doors to be flush with seamless edges i.e., provide continuous flush end closures, continuously welded in place and ground smooth.

C. Hardware location per manufacturer recommended heights to meet ADA requirements.

D. Completely clean all doors of impurities and pressure sand to a smooth surface and correct all irregularities with metallic putty sanded smooth. Provide one spray coat of primer, baked on. Thoroughly paint unexposed inside surfaces of exterior doors, fire doors, and other doors occurring in excessive moisture area.

E. Exterior Doors: Provide weep-hole openings in bottom of exterior doors to permit moisture to escape. Seal joints in top edges of doors against water penetration.

F. Glazed Lites: Factory cut openings in doors.

G. Astragals: Provide overlapping astragal on one leaf of pairs of doors where required by NFPA 80 for fire-performance rating or where indicated. Extend minimum 3/4 inch beyond edge of door on which astragal is mounted.

2.06 STANDARD HOLLOW METAL DOORS

A. General: Provide doors of design indicated, not less than thickness indicated; fabricated with smooth surfaces, without visible joints or seams on exposed faces unless otherwise indicated. Comply with ANSI/SDI A250.8.
1. Design: As indicated.
2. Core Construction: Manufacturer's standard kraft-paper honeycomb, polystyrene, polyurethane, polyisocyanurate, mineral-board, or vertical steel-stiffener core.
a. Fire Door Core: As required to provide fire-protection ratings indicated.
b. Thermal-Rated (Insulated) Doors: Where indicated, provide doors fabricated with thermal-resistance value (R-value) of not less than 6.0 deg F x h x sq. ft./Btu when tested according to ASTM C 1363.
1) Locations: Exterior doors and doors that connect the main (office and Medical Examiner Suite) portion of the building to Garage, 150.

3. Vertical Edges for Single-Acting Doors: Beveled edge.
a. Beveled Edge: 1/8 inch in 2 inches.

4. Top and Bottom Edges: Closed with flush or inverted 0.042-inch- thick, end closures or channels of same material as face sheets.

5. Tolerances: Comply with SDI 117, "Manufacturing Tolerances for Standard Steel Door and Frames."

B. Exterior Doors: Face sheets fabricated from metallic-coated steel sheet. Provide doors complying with requirements indicated below by referencing ANSI/SDI A250.8 for level and model and ANSI/SDI A250.4 for physical performance level:
1. Level 2 and Physical Performance Level B (Heavy Duty), Model 1 (Full Flush).

C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcing plates from same material as door face sheets.

D. Fabricate concealed stiffeners and hardware reinforcement from either cold- or hot-rolled steel sheet.

2.07 STANDARD HOLLOW METAL FRAMES

A. General: Comply with ANSI/SDI A250.8 and with details indicated for type and profile.

B. Exterior Frames: Fabricated from metallic-coated steel sheet.
1. Fabricate frames with mitered or coped corners.
2. Fabricate frames as face welded unless otherwise indicated.
3. Frames for Level 2 Steel Doors: 0.053-inch- thick steel sheet.

C. Hardware Reinforcement: Fabricate according to ANSI/SDI A250.6 with reinforcement plates from same material as frames.

2.08 FRAME ANCHORS

A. Jamb Anchors:
1. Masonry Type: Adjustable strap-and-stirrup or T-shaped anchors to suit frame size, not less than 0.042 inch thick, with corrugated or perforated straps not less than 2 inches wide by 10 inches long; or wire anchors not less than 0.177 inch thick.
2. Stud-Wall Type: Designed to engage stud, welded to back of frames; not less than 0.042 inch thick.
3. Compression Type for Drywall Slip-on Frames: Adjustable compression anchors.
4. Postinstalled Expansion Type for In-Place Concrete or Masonry: Minimum 3/8-inchdiameter bolts with expansion shields or inserts. Provide pipe spacer from frame to wall, with throat reinforcement plate, welded to frame at each anchor location.

B. Floor Anchors: Formed from same material as frames, not less than 0.042 inch thick, and as follows:
1. Monolithic Concrete Slabs: Clip-type anchors, with two holes to receive fasteners.
2. Separate Topping Concrete Slabs: Adjustable-type anchors with extension clips, allowing not less than 2-inch height adjustment. Terminate bottom of frames at finish floor surface.

2.09 STOPS AND MOLDINGS

A. Fixed Frame Moldings: Formed integral with hollow metal frames, a minimum of 5/8 inch high unless otherwise indicated.

B. Loose Stops for Glazed Lites in Frames: Minimum 0.032 inch thick, fabricated from same material as frames in which they are installed.

C. Cut-Off Stops:
1. Angled stop terminates 6-inches above the floor, closed at a 45 degree angle.

2.010 STEEL FINISHES

A. Prime Finish: Apply manufacturer's standard primer immediately after cleaning and pretreating.
   1. Shop Primer: Manufacturer's standard, fast-curing, lead- and chromate-free primer complying with ANSI/SDI A250.10 acceptance criteria; recommended by primer manufacturer for substrate; compatible with substrate and field-applied coatings despite prolonged exposure.
   2. Ensure primer is compatible with finish coats scheduled.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine roughing-in for embedded and built-in anchors to verify actual locations before frame installation.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Remove welded-in shipping spreaders installed at factory. Restore exposed finish by grinding, filling, and dressing, as required to make repaired area smooth, flush, and invisible on exposed faces.

B. Prior to installation, adjust and securely brace welded hollow metal frames for squareness, alignment, twist, and plumbness to the following tolerances:
   1. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
   2. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
   3. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
   4. Plumbness: Plus or minus 1/16 inch, measured at jambs on a perpendicular line from head to floor.

C. Drill and tap doors and frames to receive nontemplated, mortised, and surface-mounted door hardware.

3.03 INSTALLATION

A. General: Install hollow metal work plumb, rigid, properly aligned, and securely fastened in place; comply with Drawings and manufacturer's written instructions.

B. Hollow Metal Frames: Install hollow metal frames of size and profile indicated. Comply with ANSI/SDI A250.11.
   1. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After wall construction is complete, remove temporary braces, leaving surfaces smooth and undamaged.
      a. At fire-protection-rated openings, install frames according to NFPA 80.
      b. Where frames are fabricated in sections because of shipping or handling limitations, field splice at approved locations by welding face joint continuously; grind, fill, dress, and make splice smooth, flush, and invisible on exposed faces.
      c. Install frames with removable glazing stops located on secure side of opening.
      d. Install door silencers in frames before grouting.

e. Remove temporary braces necessary for installation only after frames have been properly set and secured.
f. Check plumbness, squareness, and twist of frames as walls are constructed. Shim as necessary to comply with installation tolerances.
g. Field apply bituminous coating to backs of frames that are filled with grout containing antifreezing agents.

2. Floor Anchors: Provide floor anchors for each jamb and mullion that extends to floor, and secure with postinstalled expansion anchors.
a. Floor anchors may be set with powder-actuated fasteners instead of postinstalled expansion anchors if so indicated and approved on Shop Drawings.

3. Metal-Stud Partitions: Solidly pack mineral-fiber insulation behind frames.
4. Masonry Walls: Coordinate installation of frames to allow for solidly filling space between frames and masonry with grout.
5. Concrete Walls: Solidly fill space between frames and concrete with grout. Take precautions, including bracing frames, to ensure that frames are not deformed or damaged by grout forces.
6. In-Place Concrete or Masonry Construction: Secure frames in place with postinstalled expansion anchors. Countersink anchors, and fill and make smooth, flush, and invisible on exposed faces.
7. Ceiling Struts: Extend struts vertically from top of frame at each jamb to overhead structural supports or substrates above frame unless frame is anchored to masonry or to other structural support at each jamb. Bend top of struts to provide flush contact for securing to supporting construction. Provide adjustable wedged or bolted anchorage to frame jamb members.
8. Installation Tolerances: Adjust hollow metal door frames for squareness, alignment, twist, and plumb to the following tolerances:
a. Squareness: Plus or minus 1/16 inch, measured at door rabbet on a line 90 degrees from jamb perpendicular to frame head.
b. Alignment: Plus or minus 1/16 inch, measured at jambs on a horizontal line parallel to plane of wall.
c. Twist: Plus or minus 1/16 inch, measured at opposite face corners of jambs on parallel lines, and perpendicular to plane of wall.
d. Plumbness: Plus or minus 1/16 inch, measured at jambs at floor.

C. Hollow Metal Doors: Fit hollow metal doors accurately in frames, within clearances specified below. Shim as necessary.
1. Non-Fire-Rated Standard Steel Doors:
a. Jambs and Head: 1/8 inch plus or minus 1/16 inch.
b. Between Edges of Pairs of Doors: 1/8 inch plus or minus 1/16 inch.
c. Between Bottom of Door and Top of Threshold: Maximum 3/8 inch.
d. Between Bottom of Door and Top of Finish Floor (No Threshold): Maximum ¾ inch.

2. Fire-Rated Doors: Install doors with clearances according to NFPA 80.
3. Smoke-Control Doors: Install doors according to NFPA 105.

D. Glazing: Comply with installation requirements in Division 08 Section "Glazing" and with hollow metal manufacturer's written instructions\.
1. Secure stops with countersunk flat- or oval-head machine screws spaced uniformly not more than 9 inches o.c. and not more than 2 inches o.c. from each corner.

E. Comply with provisions of SDI-105 "Recommended Erection Instructions for Steel Frames", unless otherwise indicated.
1. Except for frames located at in-place concrete or masonry and at drywall installations, place frames prior to construction of enclosing walls and ceilings. Set frames accurately in position, plumbed, aligned, and braced securely until permanent anchors are set. After

wall construction is completed, remove temporary braces and spreaders leaving surfaces smooth and undamaged.

2. In masonry construction, locate 3 wall anchors per jamb at hinge and strike levels.
3. At in-place concrete or masonry construction, set frames and secure to adjacent construction with machine screws and masonry anchorage devices.
4. Install fire-rated frames in accordance with NFPA Std. No. 80.
5. In metal stud partitions, install at least 3 wall anchors per jamb at hinge and strike levels. In open steel stud partitions, place studs in wall anchor notches and wire tie. In closed steel stud partitions, attach wall anchors to studs with self-tapping screws.
6. Fill heads of fasteners with body putty, grind smooth and touch-up prime.

F. Fit hollow metal doors accurately in frames, within clearances specified in SDI-100.

G. Place fire-rated doors with clearances as specified in NFPA Standard No. 80.

H. Install glazing in strict accordance with fire resistant glazing material manufacturer's specifications. Field cutting or tampering is not permissible.

3.04 ADJUSTING AND CLEANING

A. Immediately after erection, sand smooth any rusted or damaged areas of prime coat and apply touch-up of compatible air-drying primer.

B. Remove grout and other bonding material from hollow metal work immediately after installation.

C. Check and readjust operating finish hardware items, leaving steel doors and frames undamaged and in complete and proper operating condition. Remove and replace defective work, including hollow metal work that is warped, bowed, or otherwise unacceptable.

END OF SECTION 08 11 13

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

1.02 WORK INCLUDED

A. Door Hardware and verification of existing hardware for coordination of specified components.

1.03 RELATED SECTIONS

A. Finish Carpentry: Section 06 20 00 for reinstallation of restored salvaged wood door at Veranda lower level.

B. Hollow Metal Doors and Frames: Section 08 11 13 for door to Tunnel from Boiler House.

1.04 REFERENCES

A. Federal Specifications (FS)
   1. FF-H-106a Hardware, Builders'; Locks and Door Trim-Standard Finishes for Builders Hardware.

B. National Fire Protection Association, Inc. (NFPA), Battery March Park, Quincy, MA 02269.
   1. NFPA 80 - Standard for fire doors and windows.
   2. NFPA 101 - Code for safety to life from fire in buildings and structures.

C. Underwriter's Laboratories, Inc. (UL), 333 Pfingsten Road, Northbrook, IL 60062.
   1. Building Materials Directory.

D. Hardware shall be in strict accord with Wisconsin Administrative Code Chapter Comm. 69 - "Barrier Free Design".

1.05 SUBMITTALS

A. Submit in accordance with the General Conditions of the Contract.
   1. Five (5) copies of a detailed, vertical type hardware schedule for approval.
      a. List and describe each opening separately. Include doors with identical hardware, except hand, in a single heading. Include door number, room designations, degree of swing, and hand.
      b. List related details. Include dimensions, door and frame material, and other conditions affecting hardware.
      c. List all hardware items. Include manufacturer's name, quantity, product name, catalog number, size, finish, attachments, and related details.
      d. Resubmit four (4) copies of the corrected schedule when required.
      e. Determine keying requirements, as directed by the Owner's Representative and submit five (5) copies of a detailed keying schedule for approval; resubmit four copies (4) of the corrected schedule when required.
      f. Prior to final payment, provide a record copy of hardware schedules, including all revisions and updates. All openings shall be listed to reflect final installed configuration only.

2. Samples of hardware items as may be required. Identify each sample and indicate the location of subsequent installation in the project.
3. A copy of the approved hardware schedule and all pertinent templates or template information to each fabricator of material factory-prepared for the installation of hardware.

1.06 QUALITY ASSURANCE

A. Manufacturers and product numbers listed herein establish a standard of quality. Similar items by other manufacturers may be accepted by prior written approval by the architect in accord with the General Conditions of the Contract. Except where specified in the hardware schedule, furnish products of only one manufacturer for each type of hardware.

B. Supplier: Hardware Supplier: The hardware supplier shall be a corporate member in good standing of The Door and Hardware Institute (DHI), employing at least one Architectural Hardware Consultant (AHC) who is currently participating in DHI's continuing education program (CEP).

C. Items of hardware not definitely specified herein but necessary for completion of the Work shall be provided. Such items shall be of type and quality suitable to the service required and comparable to the adjacent hardware. Where size and shape of members is such as to prevent the use of types specified, hardware shall be furnished of suitable types having as nearly as practicable the same operation and quality as the type specified. Sizes shall be adequate for the service required. Include such nuances as strike type, strike lip, raised barrel hinges, mounting brackets, fasteners, shims, and coordination between conflicting products. All doors shall be provided with a stop.

1.07 REGULATORY REQUIREMENTS

A. Furnish UL listed hardware for all UL labeled openings in conformance with requirements for the class of opening scheduled.

1.08 DELIVERY, STORAGE AND HANDLING

A. Deliver hardware to the job site in the manufacturer's original containers marked to correspond with the approved hardware schedule for installation location.

B. Store hardware in dry surroundings and protect against loss and damage.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Refer to the Hardware Schedule at the end of this Section.

2.02 ACCESSORIES

A. Furnish all necessary hardware accessories such as wood or machine screws, bolts, nuts, anchors, toggle bolts, and other fasteners, each of the type, size, material and finish for its intended purpose and each according to the material to which the hardware is being applied.

B. Keying system will be determined by the Owner's Representative.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install hardware in accordance with manufacturer's recommendations and instructions.

B. Install hardware on UL labeled openings in accordance with manufacturer's requirements to maintain the fire rating.

C. Mortise and cut to close tolerance and conceal evidence of cutting in the finished work.

D. Remove, cover or protect hardware after fitting until paint or other finish is applied. Permanently install hardware after finishing operations are complete.

E. Deliver one complete set of installation and adjustment instructions, and tools with the hardware.

F. Coordinate all Owner Furnished Contractor Installed hardware.

3.02 ADJUSTING

A. At final completion, adjust and test all hardware for function and performance and leave in good operating condition.

3.03 CLEANING

A. Clean all hardware to restore the original finish.

3.04 PROTECTION

A. Protect the finished installation until acceptance of the project.

3.05 HARDWARE SCHEDULE

A. Manufacturers

1. Hinges	Hager Hinge Co.	HAG
a. Approved Equals:	Stanley McKinney	
2. Lockset	Best Access Systems	BES
a. Approved Equals:	Provide 7-pin cylinders to match existing. Coordinate with Best Access Systems for keying of project, No Substitutions. Best Access Systems is indicated in this specification as a basis of design, Marshall Best Security Corporation to accept Best Access System Core is an acceptable equal.	
3. Door Closers	LCN	LCN
a. Approved Equals:	No substitutions.	

B. Hardware Sets:

SET 01, Door at Veranda Lower Level

1 EA	CORE	1C72	626	BES
1 EA	CLOSER	4010 x SRI	689	LCN

REMAINDER OF EXISTING HARDWARE TO BE RE-USED.

SET 02, Door to Tunnel from Boiler House

EA	HINGES	AS SPECIFIED	652	HAG
1 EA	CLOSER	4010 x SRI	689	LCN
1 EA	STOREROOM LOCKSET	93K D x 14D	626	BEST
1 EA	WALL STOP	WS407	630	IVE

END OF SECTION 08 71 00

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SECTION 09 24 00

PORTLAND CEMENT PLASTERING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern all work under this Section.

1.02 SUMMARY

A. This Section includes the following:
   1. Repair of existing Veranda ceiling portland cement plasterwork on metal lath.

1.03 RELATED SECTIONS

A. Section 01 35 91, Historic Treatment Procedures.

B. Section 02 41 13, Demolition.

1.04 SUBMITTALS

A. Submit in accordance to the General Conditions of the contract.

B. Product Data: For each type of product indicated.

1.05 QUALITY ASSURANCE

A. Mockups: Before plastering, install mockups of at least 10 sq. ft. in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.
   1. Install mockups to match existing finish.
      a. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.06 DELIVERY, STORAGE, AND HANDLING

A. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion, construction traffic, and other causes.

1.07 PROJECT CONDITIONS

A. Comply with ASTM C 926 requirements.

1.08 ENVIRONMENTAL REQUIREMENTS

A. Recycled content: Provide products manufactured from recycled content as specified, to be measured and documented according to the LEED Green Building Rating System (MR Credit 4.1& 4.2).
   1. Steel: Minimum 74% post-consumer, 13% pre-consumer.

B. Low-Emitting Materials, Adhesives, and Sealants (EQ Credit 4.1): Materials used on the interior of the building (defined as inside the weatherproofing system and applied on site) must not exceed the following requirements.

1. Adhesives, Sealants and Sealant Primers: South Coast Air Quality Management (SCAQMD) Rule # 1168, requirements in effect on July 1, 2005, and rule amendment date January 7, 2005.
2. Aerosol Adhesives: Green Seal Standard for Commercial Adhesives GS-36, requirements in effect on October 19, 2000.

PART 2 - PRODUCTS

2.01 METAL LATH

A. Expanded-Metal Lath: ASTM C 847 with ASTM A 653/A 653M, G60, hot-dip galvanized zinc coating.
1. Diamond-Mesh Lath: Flat and self-furring types as necessary for flush installation with adjacent existing plaster.

2.02 METAL ACCESSORIES

A. Cornerbeads: Fabricated from zinc or zinc-coated (galvanized) steel.

B. Casing Beads: Fabricated from zinc or zinc-coated (galvanized) steel; square-edged style; with expanded flanges.

C. Control Joints: Fabricated from zinc or zinc-coated (galvanized) steel; one-piece-type, folded pair of unperforated screeds in M-shaped configuration; with perforated flanges and removable protective tape on plaster face of control joint.

2.03 MISCELLANEOUS MATERIALS

A. Water for Mixing: Potable and free of substances capable of affecting plaster set or of damaging plaster, lath, or accessories.

B. Fasteners for Attaching Metal Lath to Substrates: Complying with ASTM C 1063.

C. Bonding Compound: ASTM C 932.

D. Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, not less than 0.0475-inch diameter, unless otherwise indicated.

E. Asphalt impregnated 15lb minimum felt paper.
1. Exterior Stucco only.

2.04 PLASTER MATERIALS

A. Portland Cement: ASTM C 150, Type I.
1. Color for Finish Coats: White.

B. Lime: ASTM C 206, Type S; or ASTM C 207, Type S.

C. Sand Aggregate: ASTM C 897.
1. Color for Job-Mixed Finish Coats: White.

2.05 PLASTER MIXES

A. General: Comply with ASTM C 926 for applications indicated.

B. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork as follows:
   1. Portland Cement Mixes:
      a. Scratch Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 2-1/2 to 4 parts aggregate per part of cementitious material (sum of separate volumes of each component material).
      b. Brown Coat: For cementitious material, mix 1 part portland cement and 3/4 to 1-1/2 parts lime. Use 3 to 5 parts aggregate per part of cementitious material (sum of separate volumes of each component material).

C. Job-Mixed Finish-Coat Mixes:
   1. Portland Cement Mix: For cementitious materials, mix 1 part portland cement and 1-1/2 to 2 parts lime. Use 1-1/2 to 3 parts aggregate per part of cementitious material.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance.
   1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.02 PREPARATION

A. Protect adjacent work from soiling, spattering, moisture deterioration, and other harmful effects caused by plastering.

B. Prepare solid substrates for plaster that are smooth or that do not have the suction capability required to bond with plaster according to ASTM C 926.

C. Remove existing damaged plaster down to sound lath.
   1. Remove existing, exposed wood or metal lath damaged by water or rot.

3.03 INSTALLATION, GENERAL

A. Install Stucco assembly per drawings.

3.04 INSTALLING METAL LATH

A. Expanded-Metal Lath: Install according to ASTM C 1063.
   1. Install lath according to manufacturer’s instructions.
   2. Metal lath may be installed over existing, sound wood lath.

3.05 INSTALLING ACCESSORIES

A. Install according to ASTM C 1063 and at locations indicated on Drawings.

3.06 PLASTER APPLICATION

A. General: Comply with ASTM C 926.
   1. Do not deviate more than plus or minus 1/4 inch in 10 feet from a true plane in finished plaster surfaces, as measured by a 10-foot straightedge placed on surface.
   2. Finish plaster flush with metal frames and other built-in metal items or accessories that act as a plaster ground unless otherwise indicated. Where casing bead does not terminate

plaster at metal frame, cut base coat free from metal frame before plaster sets and groove finish coat at junctures with metal.

3. Provide plaster surfaces that are ready to receive field-applied finishes indicated.

B. Bonding Compound: Apply on unit masonry and concrete plaster bases.

C. Base-Coat Mixes for Use over Metal Lath: Scratch and brown coats for three-coat plasterwork; to match existing (approximately 3/4-inch thickness).

D. Plaster Finish Coats: Apply to provide finish to match existing plaster.

3.07 CUTTING AND PATCHING

Cut, patch, replace, and repair plaster as necessary to accommodate other work and to restore cracks, dents, and imperfections. Repair or replace work to eliminate blisters, buckles, crazing and check, cracking, dry outs, efflorescence, sweat outs, and similar defects and where bond to substrate has failed.

3.08 CLEANING AND PROTECTION

A. Remove temporary protection and enclosure of other work. Promptly remove plaster from surfaces not indicated to be plastered. Repair floors, walls, and other surfaces stained, marred, or otherwise damaged during plastering.

END OF SECTION 09 24 00

SECTION 09 90 00

PAINTING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Applicable provisions of Division 1 shall govern the work under this section.

1.02 WORK INCLUDED

A. Painting and finishing of interior and exterior exposed items and surfaces throughout Project.

B. Field painting of exposed bare and covered pipes and ducts and hangers, conduits, uni-strut, exposed steel and iron work, all metal fabricated Section 05 50 00 items, and primed metal surfaces including but not limited to, hollow metal work, equipment installed under mechanical and electrical work.

C. "Paint" as used herein means all coating systems materials including primers, emulsions, enamels, stains, sealers and fillers, and other applied material whether used as prime, intermediate or finish coats.

D. Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces. Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas.

E. Following categories are not included as part of field-applied finish work.
   1. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified.
   2. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces in concealed areas and generally inaccessible areas.
   3. Finished Metal Surfaces.
   4. Operating Parts.

1.03 RELATED WORK

A. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, metal fabrications, hollow metal work and similar items.

B. Examine the Contract Documents and be familiar with all their provisions regarding painting. All surfaces that are left unfinished by the requirements of other Sections shall be painted or finished as part of this Section.

1.04 SUBMITTALS

A. Submit in accordance with the General Conditions of the Contract:
   1. Paint: Submit a list of specified products with corresponding name of manufacturer, identifying name and number of proposed products along with manufacturer's written instructions for use of each product.

   2. If manufacturer to be used is different from that of color chips furnished, prepare and submit two approximately 6 inch square, properly labeled samples of each color and sheen required on properly prepared paint-out cards or hardboard.

1.05 QUALITY ASSURANCE

A. MPI Standards:
1. Products: Complying with MPI standards indicated and listed in "MPI Approved Products List."

2. Preparation and Workmanship: Comply with requirements in "MPI Architectural Painting Specification Manual" for products and paint systems indicated.

1.06 DELIVERY, STORAGE AND HANDLING

A. Do not deliver materials to site until having received all written approvals of submitted information and samples.

B. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label.

C. Store materials not in actual use in tightly covered containers.

D. Take all precautions to ensure that workers and work areas are adequately protected from fire hazards and health hazards resulting from handling, mixing and application of paints.

E. Remove rags and waste from storage areas daily.

1.07 PROJECT CONDITIONS

A. Apply water-base paints only when temperatures of surfaces to be painted and surrounding air temperatures are between 50 and 95 degrees F.

B. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45 degrees F. and 95 degrees F.

C. Do not apply paint when relative humidity exceeds 85%; at temperatures less than 5 degrees F. above the dew point; or to damp or wet surfaces.

1.08 SEQUENCING AND SCHEDULING

A. Schedule cleaning and painting so that contaminants from cleaning process will not fall onto newly-painted surfaces.

1.09 EXTRA MATERIALS

A. Furnish extra materials described below that are from same production run (batch mix) as materials applied and that are packaged for storage and identified with labels describing contents.

1. Quantity: Furnish an additional 5 percent, but not less than 1 new and unopened gal. of each material and color applied.

1.010 SUSTAINABLE DESIGN REQUIREMENTS

A. Low-Emitting Materials, Field applied Paints and Coatings: Interior paints and coatings applied on-site must meet the limitations and restrictions concerning chemical components set by the following standards:
1. Topcoat Paints, Green Seal Standard GS-11, Paints: First Edition, May 20, 1993.

2. Anti-Corrosive and Anti-Rust Paints: Green Seal Standard GS-03, Anti-Corrosive Paints", Second Edition, January 7, 1997. For applications on ferrous metal substrates.
3. "All Other Architectural Coatings, Primers and Undercoats: South Coast Air Quality Management District (SCAQMD) Rule #1113, Architectural Coatings", rules in effect on January 1, 2004.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

A. Provide products from the following manufacturers:

1. AFM Safecoat
2. Benjamin Moore & Co.
3. Cabot
4. ICI/Dulux.
5. Mythic Paint, Southern Diversified Products
6. PPG Architectural Finishes, Inc.
7. Rymar, LLC
8. Sherwin-Williams Company
9. Sikkens
10. Target Coatings

2.02 MATERIALS

A. Use the materials of the same manufacturer for each system.

B. Sherwin-Williams systems are called out in the system schedules to establish quality and dry mil thickness of finished installation for all systems. A different manufacturer may be used for color selection. Any manufacturer noted above may be used as long as quality and color requirements are met.

1. Proprietary names used to designate colors or materials are not intended to imply that products of named manufacturers are required to exclusion of equivalent products of other manufacturers.

C. Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers.

D. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

E. Chemical Components of Field-Applied Interior Paints and Coatings: Provide products that comply with the following limits for VOC content, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions; these requirements do not apply to primers or finishes that are applied in a fabrication or finishing shop:

1. Primer or Undercoat: VOC content of not more than 100 g/L (150 g/L with colorant added at point-of-sale).
2. Flat Paints and Coatings: VOC content of not more than 50 g/L (100 g/L with colorant added at point-of-sale).
3. Non-flat Paints and Coatings: VOC content of not more than 100 g/L (150 g/L with colorant added at point-of-sale).
4. Floor Paint: VOC content of not more than 100 g/L (150 g/L with colorant added at point-of-sale).
5. Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).
6. Restricted Components: Paints and coatings shall not contain any of the following:

    a. Acrolein.
    b. Acrylonitrile.
    c. Antimony.
    d. Benzene.
    e. Butyl benzyl phthalate.
    f. Cadmium.
    g. Di (2-ethylhexyl) phthalate.
    h. Di-n-butyl phthalate.
    i. Di-n-octyl phthalate.
    j. 1,2-dichlorobenzene.
    k. Diethyl phthalate.
    l. Dimethyl phthalate.
    m. Ethylbenzene.
    n. Formaldehyde.
    o. Hexavalent chromium.
    p. Isophorone.
    q. Lead.
    r. Mercury.
    s. Methyl ethyl ketone.
    t. Methyl isobutyl ketone.
    u. Methylene chloride.
    v. Naphthalene.
    w. Toluene (methylbenzene).
    x. 1,1,1-trichloroethane.
    y. Vinyl chloride.

F. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

2.03 PRIMERS/SEALERS

A. Interior Latex Primer/Sealer: MPI #50.

2.04 METAL PRIMERS

A. Rust-Inhibitive Primer (Water Based): MPI #107.

2.05 LATEX PAINTS

A. Institutional Low-Odor/VOC Latex (Flat): MPI #143 (Gloss Level 1).

B. Institutional Low-Odor/VOC Latex (Low Sheen): MPI #144 (Gloss Level 2).

C. Institutional Low-Odor/VOC Latex (Eggshell): MPI #145 (Gloss Level 3).

D. Institutional Low-Odor/VOC Latex (Semigloss): MPI #147 (Gloss Level 5).

2.06 EQUIPMENT

A. Provide all brushes, rollers, ladders, scaffolding, and other equipment of any kind to properly execute each type of work.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of work.

B. Maximum Moisture Content of Substrates:
   1. Concrete: Must be cured a minimum of 45 days.

C. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

D. Begin coating application only after unsatisfactory conditions have been corrected and surfaces are dry.
   1. Beginning coating application constitutes Contractor's acceptance of substrates and conditions.

3.02 PREPARATION

A. Perform preparation and cleaning procedures in accord with paint manufacturer's instructions and as specified for each particular substrate condition.

   1. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations.
      a. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.
      b. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.

   2. All paint removal work performed on-site must use a non-caustic, citrus-based stripping product. The Owner will only accept a citrus-based product for stripping the paint. The use of sodium hydroxide or methylane chloride removers will NOT be permitted. Dry scraping, sanding or other abrading of the existing paint that would create dust or chips is not permitted.

a. Use of a drop cloth below the work area and disposal of paint debris at the end of each day will be mandatory.

3. Follow manufacturer's instructions for use of stripping solutions to avoid raising grain of wood.
4. Do not dip fabricated units (doors, etc.) in stripping solution to avoid saturating wood or damaging glued connections.
5. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning.
6. Remove dirt, rust, scale, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

B. Wood: Prepare substrate and apply finish according to manufacturer's recommendations. Apply to smooth clean surfaces only.

C. Ferrous Metal

1. Remove dirt and grease with mineral spirits or solvent recommended by paint manufacturer and clean cloths.
2. Where not galvanized, shop coat of primer will exist on surface. If prime coat is not smooth, sand to bare metal and re-prime.

D. Concrete
1. Surfaces must be clean and free of grease, wax, and mildew. Remove any chalk and loose scaling. Wash with a detergent and rinse with water from a hose.

3.03 APPLICATION

A. Provide adequate forced ventilation of enclosed areas for curing of installed materials, to disperse humidity, and to prevent hazardous accumulations of dust, fumes, vapors or gases.

B. Do work under adequate illumination and dust-free conditions.

C. Apply paints according to manufacturer's written instructions.
1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.

D. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

E. Materials
1. Do not open containers until required for use.
2. Stir materials thoroughly and keep at uniform consistency during application.

F. Coats
1. Number specified is minimum.
2. Touch up suction spots between coats.
3. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

4. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
5. Refinish surfaces affected by refitting work.

3.04 COLOR SEPARATION

A. Not applicable.

3.05 CLEANING

A. During the progress of this work, remove from the site all discarded paint materials, rubbish, cans and rags at the end of each work day.

B. Upon completion of painting work, clean window glass and other paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

3.06 PROTECTION

A. Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct damage by cleaning, repairing or replacing.

B. Provide "wet paint" signs to protect newly-painted finishes. Remove temporary protective wrappings, after completion of painting operations.

C. At the completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

3.07 SCHEDULE OF WORK

A. In addition to obvious surfaces, the following do not require painting or finishing.
1. Do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) acoustic materials, finished mechanical and electrical equipment including light fixtures and distribution cabinets.
2. Painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, furred areas, utility tunnels, pipe spaces, duct shafts and elevator shafts.
3. Metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting, unless otherwise indicated.
4. Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting, unless otherwise indicated.
5. Do not paint over any code-required labels, such as Underwriter's Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plate.
6. Paint all steel. Paint only previously painted wall and ceiling surfaces at the Veranda.
7. Do not apply next coat until previous is thoroughly dry.
8. Provide final coat which is solid and even in color, free from runs, laps, sags, brush marks, air bubbles and excessive roller stipple and worked into crevices, joints and similar areas.
9. Walls and Ceilings inside the Boiler House and Tunnel do not require paint.

B. Wood Trim:
1. Apply finishes to door and trim at Veranda lower level.
2. Apply per manufacturer’s instructions.

C. Electrical Panel Box Covers and Doors

1. Remove, paint and reinstall after paint is dry.

D. Other Unfinished and Primed Surfaces

1. Provide specified finish on exposed surfaces. This includes prime coated mechanical units, piping, pipe covering, conduit, and interior duct surfaces visible behind grilles.

E. General

1. Paint or finish other new, unfinished and primed surfaces noted on drawings.
2. Provide aggregate in quantity as recommended by manufacturer and mix according to manufacturer's written instructions.

F. Exterior Paint Schedule

System	Material	Type/Sheen	Number and Type of Coating
EPS-1	Ferrous Metal (hollow metal, exposed plates, angles, bolts, etc.)	Latex /Semi-Gloss	One coat "Kem-Kromik Universal" primer; Two coats "DTM Acrylic"
EPS-2	Galvanized Metal (hollow metal, equipment housings, steel, etc.)	Latex /Semi-Gloss	One coat "Pro-Cryl Univeral" primer; Two coats "DTM Acrylic"
EPS-3	Wood (door, trim)	Acrylic-Satin	One coat primer, "A-100, Exterior Oil Wood Primer", two top coats, "SuperPaint, Exterior Latex Satin, A89 Series."
EPS-6	Concrete Plaster	Acrylic-Latex	One coat primer, "Loxon Block Surfacer", two coats "A-100 Exterior Acrylic Latex", satin.

3.08 PAINT COLOR SCHEDULE (GENERIC)

A. PT-1: Ceiling/walls: white
B. PT-2: Handrails: Deep Iron Ore
C. PT-4: Hollow Metal Doors: Deep Iron Ore
D. PT-5: Steel thresholds and signage supports: Deep Iron Ore

END OF SECTION

SECTION 31 10 00

SITE CLEARING

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Conditions of the Contract and portions of Division One of this Project Manual apply to this Section as though repeated herein.

B. Section 31 20 00 Erosion Control, Section 01 74 19 Recycling, and Section 02 41 13 Demolition.

1.2 SUMMARY

A. Section Includes:
1. Preparation
2. Existing Utilities
3. Clearing and Grubbing
4. Stripping and Stockpiling Topsoil
5. Site Improvements
6. Disposal of Surplus and Waste Materials

1.3 MATERIAL OWNERSHIP

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

1.4 PROJECT CONDITIONS

A. Traffic: Minimize interference with site traffic, adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.
1. Do not close or obstruct street or traffic patterns of other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

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

C. Do not commence site clearing operations until temporary erosion- and sedimentation-control measures are in place. See Section 31 25 00.

PART 2 PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Requirements for satisfactory soil material are specified in Section 31 20 00.

PART 3 EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction. Identify existing benchmarks that will interfere with construction to Owner. Owner will relocate existing benchmarks outside of the Work limits.

B. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated.

C. Protect existing site improvements to remain from damage during construction.
   1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 EXISTING UTILITIES

A. Locate existing underground utilities in areas of work. If utilities are to remain in place, provide adequate means of protection during earthwork operations.

B. Should uncharted or incorrectly charted piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.

C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
   1. Notify Owner not less than two days in advance of proposed utility interruptions.
   2. Do not proceed with utility interruptions without Owner's written permission.

3.3 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.
   1. Remove stumps and roots, obstructions, and debris to a depth of 18 inches below exposed subgrade.

3.4 TOPSOIL STRIPPING and stockpiling

A. Strip topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.

B. Stockpile topsoil away from edge of excavations without intermixing with subsoil. Grade and shape stockpiles to drain surface water. Maintain to prevent windblown dust and erosion by water.

C. Place stockpiles in Owner-approved location.

3.5 SITE IMPROVEMENTS

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

3.6 DISPOSAL OF SURPLUS AND WASTE MATERIALS

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

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials and transport them to recycling facilities. Do not interfere with other Project work.

C. Refer to specification Section 01 74 19.

END OF SECTION

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SECTION 31 13 16
SELECTIVE TREE AND SHRUB PROTECTION AND TRIMMING

PART 1 GENERAL

1.1 SECTION SUMMARY

1. Scope
2. Related Work
3. Definitions
4. Submittals
5. Quality Assurance
6. Project Conditions
7. Topsoil
8. Organic Mulch
9. Tree Protection Fence
10. Tree Protection Zone Signage
11. Examination
12. Preparation
13. Tree and Plant Protection Zones
14. Excavation
15. Tree Pruning
16. Crown Pruning
17. Regrading
18. Field Quality Control
19. Repair and Replacement
20. Disposal of Surplus and Waste Materials

1.2 SUMMARY OF WORK

A. This Section includes the protection and pruning of existing trees and plants that are affected by, execution of the Work, whether temporary or permanent construction. The contractor shall: Protect trees and plants indicated on the drawings to remain in location from all damage during construction. Do not injure trunks, branches or roots of trees and plants to remain. Perform cutting and pruning only as approved and as directed by the Owner's Project Representative. Related sections include the following:

1.3 RELATED WORK

A. Section 02 41 13 - Demolition
B. Section 31 10 00 - Site Clearing
C. Section 31 20 00 – Earthwork
D. Section 32 92 00 - Plants

1.4 DEFINITIONS

A. Arborist or Certified Arborist: As referenced here in all "arborists" or "certified arborists" shall be at minimum an ISA Certified Arborist or and ASCA Registered Consulting Arborist unless other specified.

B. Caliper: Diameter of a trunk measured by a diameter tape at 4'-6" above the ground or DBH (diameter at breast height). (Standard as defined by the ISA – International Society for Arboriculture).

C. Tree Protection Zone (TPZ): Area surrounding individual trees or groups of trees to be protected during construction, and defined by calculating the critical root radius (crr). The crr is the tree trunk caliper (diameter) at 4'-6" above the ground multiplied by 1.5, the result expressed in feet. The root protection zone is the outside edge of a concentric circle with the crr as its radius extending from the truck of the tree or as indicated on the drawings which ever is larger. Note that a particular tree/plant sensitivity or tolerance to construction disturbance may require a larger TPZ area than the area based on this calculation. This is to ensure that both the feeder and structural support roots are undamaged to maintain the integrity of the tree.

1.5 SUBMITTALS

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

B. Existing Tree and Plant Inventory and Condition Report: Documentation of existing trees and plantings by a certified arborist for the vegetation indicated to remain, which establishes preconstruction conditions and plant health. Arborist should also verify that none of the trees marked for protection are a potential hazard tree per ISA - International Society for Arboriculture standards.

C. Provide detailed photographs or videotape.

D. Include plans and notations to indicate specific wounds and damage conditions of each tree or other plants designated to remain.

E. Indicate specimen trees and shrubs recommended for protection by the arborist that may not have been included in the tree protection plan.

F. Tree Pruning Schedule: Written schedule from arborist detailing scope and extent of pruning of trees to remain that are affected by construction. Include description of pruning to be performed and maintenance following pruning.

G. Tree protection Plan: Should correspond to the site layout or site demolition plan which includes the trees and plants to be removed or protected and their related tree protection zones,

H. Include species and size of tree or plant.

I. Location on plan, include unique identifier for each.

J. Indicate removal with an "x" through the plant symbol.

K. Indicate protection with the tree protection zone and fence location.

L. Indicate location of pruning of branches or roots outside of tree protection zones to avoid damage during construction or for the health of the tree.

M. Include typical tree protection measures.

N. Qualification Data: For tree service firm and arborist.

O. Certification: From arborist that adequate tree protection is in place before construction begins and certifying that trees indicated to remain have been protected during construction according to the tree protection plan and recognized standards and trees were promptly and properly treated and repaired when damaged.

P. Maintenance Recommendations: From a certified arborist, for the care and protection of trees affected by construction during and after completing the Work.

1.6 QUALITY ASSURANCE

A. Arborist Qualifications: An arborist certified by ISA-International Society of Arboriculture.

B. Tree Service Firm Qualifications: An experienced tree service firm that has successfully completed temporary tree and plant protection work similar to that required for this Project and that will assign an experienced, qualified arborist to Project site during execution of the Work.

C. Tree Pruning Standard: Comply with ANSI A300 Pruning Standards.

D. Tree Protection Standard: Reference and Comply with *"Arboriculture"*, Harris, Mathey and Clark, 3rd Edition, Simon & Schuster Adult Publishing Group, July 31, 1998, Sections: 7 – Modifying and Managing the Site, 10 – Special Management Situations, 11 – Preserving Existing Trees, 16 – Tree Hazard Management, 17 – Preventative Maintenance and Repair.

E. Oak Tree Protection: Wisconsin Department of Natural Resources Forestry Division Publication PUB-FR-127 2009 for further Oak tree protection requirements.

F. Preinstallation Conference: Conduct conference at Project site. Before tree protection and trimming operations begin, meet with representatives of authorities having jurisdiction, Owner, Architect, consultants, and other concerned entities to review tree protection and trimming procedures and responsibilities.

G. Review methods and procedures related to temporary tree and plant protection including, but not limited to, the following:

H. Construction schedule. Verify availability of materials, personnel, and equipment needed to make progress and avoid delays.

I. Enforcing requirements for protection zones.

J. Arborist's responsibilities.

K. Field quality control.

1.7 PROJECT CONDITIONS

A. The following practices are prohibited within tree protection zones:
B. Storage of construction materials, debris, or excavated material.
C. Parking vehicles or equipment.
D. Foot traffic.
E. Erection of sheds or structures.
F. Impoundment of water or excessive wetting.
G. Spillage of noxious material while mixing, placing or storing construction materials.
H. Excavation or other digging unless otherwise indicated.
I. Compaction of soil over root systems.
J. Fill in excess of one inch over tree roots.
K. Attachment of signs to or wrapping materials around trees or plants unless otherwise indicated.
L. Do not direct vehicle or equipment exhaust toward tree protection zones.
M. Prohibit heat sources, flames, ignition sources, and smoking within or near protection zones and organic mulch.

PART 2 MATERIALS

2.1 TOPSOIL

A. Natural or cultivated top layer of the soil profile or manufactured topsoil: containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 1 inch (25 mm) in diameter; and free of weeds, roots, and toxic and other non-soil materials.

B. Obtain topsoil only from well-drained sites where topsoil is 4 inches (100 mm) deep or more; do not obtain from bogs or marshes.

2.2 ORGANIC MULCH

A. Shredded hardwood, free of deleterious materials.

2.3 TREE PROTECTION ZONE FENCING

A. Fencing fixed in position and meeting the following requirements:

B. Galvanized-steel chain-link fencing fabricated from minimum 2-inch opening, 0.148-inch diameter wire chain link fabric; with pipe posts, minimum 1.9-inch OD line posts, and 2-3/8-inch OD Corner and pull posts; with 1-5/8-inch OD top rails and 0.177-inch diameter bottom

tension wire; with tie wires, hog ring ties, and other accessories for a complete fence system. 4 feet height.

PART 3 EXECUTION

3.1 EXAMINATION

A. Erosion and Sedimentation Control: Examine the site to verify that temporary erosion and sedimentation control measures are in place. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree protection zones.

3.2 PREPARATION

A. Locate and clearly identify trees, shrubs, and other vegetation to remain or to be relocated. [Flag] [Tie a 1-inch blue-vinyl tape around] <Insert requirement> each tree trunk at 54 inches above the ground.

B. Protect tree root systems from damage caused by runoff or spillage of noxious materials while mixing, placing, or storing construction materials. Protect root systems from ponding, eroding, or excessive wetting caused by dewatering operations.

C. Tree Protection Zones: Mulch areas inside tree protection zones and other areas indicated.

D. Apply 2-inch average thickness of organic mulch. Do not place mulch within 6 inches of tree trunks.

3.3 TREE AND PLANT PROTECTION ZONES

A. Tree Protection Zone Fencing: Install protection zone fencing along edges of protection zones in a manner that will prevent people from easily entering protected area. Construct fencing so as not to obstruct safe passage or visibility at vehicle intersections where fencing is located adjacent to pedestrian walkways or in close proximity to street intersections, drives, or other vehicular circulation.

B. Chain-Link Fencing: Install to comply with ASTM F 567 and with manufacturer's written instructions.

C. Posts: Set or drive posts into ground one-third the total height of the fence without concrete footings. Where a post is located on existing pavement or concrete to remain, provide appropriate means of post support acceptable to owner. Other means of support may be required in archaeological areas where excavation is not allowed and will need approval by DFD representative.

D. Maintain tree protection zones free of weeds and trash.

E. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations. Repair should occur within 24 hours of the damage. Treat damaged trunks, limbs, and roots according to certified arborist's written instructions and Architect/Engineer's approval.

F. Maintain tree protection zone fencing and signage in good condition as acceptable to Architect/Engineer and remove when construction operations are complete and equipment has been removed from the site.

G. Do not remove tree protection fencing, even temporarily, to allow for deliveries or equipment access through the protection zone.

H. Temporary access may be permitted subject to preapproval in writing by arborist if a root buffer effective against soil compaction is constructed as directed by arborist. Maintain root buffer so long as access is permitted.

3.4 EXCAVATION

A. General: Excavate at edge or beyond tree protection zones. Install shoring or other protective support systems to minimize sloping or benching of excavations.
B. Trenching near trees: Where utility trenches are required within tree protection zones, tunnel under the roots a minimum of 24" below the soil surface by drilling, auger boring, pipe jacking or digging by hand. Do not cut main lateral tree roots or tap roots; cut only smaller roots in the within the proposed utility line area. Cut roots as required for root pruning.

C. Redirect roots in backfill areas where possible. If encountering large, main lateral roots, expose roots beyond excavation limits as required to bend and redirect them without breaking. If encountered immediately adjacent to location of new construction and redirection is not practical, cut roots approximately 3 inches back from new construction as required for root pruning.

D. Do not allow exposed roots to dry out before placing permanent backfill. Provide temporary earth cover or pack with peat moss and wrap with burlap. Water and maintain in a moist condition. Temporarily support and protect roots from damage until they are permanently relocated and covered with soil.

3.5 ROOT PRUNING

A. Prune roots that are affected by temporary and permanent construction. Prune roots as follows:

B. Cut roots manually by digging a trench and cutting exposed roots with sharp pruning instruments; do not break, tear, chop or slant the cuts. Do not use a backhoe or other equipment that rips, tears, or pulls roots.

C. Temporarily support and protect roots from damage until they are permanently redirected and covered with soil.

D. Cover exposed roots with burlap and water regularly.

E. Backfill as soon as possible according to requirements in Division 31 Section "Earthmoving."

F. Root pruning at edge of tree protection zone: Prune roots 12 inches outside of the protection zone, by cleanly cutting all roots to the depth of required excavation.

G. Preventing Oak wilt: Do not prune, cut or injure Oaks between April 1 and September 15. If an Oak is wounded during this period, cover the wound **immediately** with tree wound paint (water-based paint). During the low risk period between September 15 and October 31 covering wound is optional. November through March is the preferred period for pruning and tree removal. Refer to Wisconsin Department of Natural Resources Forestry Division Publication PUB-FR-127 2009 for further Oak tree protection requirements.

3.6 CROWN PRUNING

A. Prune branches that are affected by temporary and permanent construction. Pruning should be the minimum necessary and not more than ¼ of the live foliage/branches of a mature tree. Prune branches as follows:

B. Prune trees to remain to compensate for root loss caused by damaging or cutting root system.

C. Prune the minimum amount necessary. Do not remove more than ¼ of the live foliage or branches of a mature tree.

D. Pruning standards: Prune trees according to ANSI A300 Pruning Standards:

E. Cut branches with sharp pruning instruments; do not chop or break.

F. Preventing Oak wilt: Do not prune, cut or injure Oaks between April 1 and September 15. If an Oak is wounded during this period, cover the wound **immediately** with tree wound paint (water-based paint). During the low risk period between September 15 and October 31 covering wound is optional. November through March is the preferred period for pruning and tree removal. Refer to Wisconsin Department of Natural Resources Forestry Division Publication PUB-FR-127 2009 for further Oak tree protection requirements.

G. Chip removed tree branches dispose of off-site.

3.7 REGRADING

A. Grade Lowering: Where new finish grade is indicated below existing grade around trees, slope grade away beyond tree protection zones. Maintain existing grades within tree protection zones.

B. Root Pruning: Prune tree roots exposed during grade lowering. Do not cut main lateral roots or taproots; cut only smaller roots. Cut roots with sharp pruning instruments; do not break or chop.

C. Minor Fill: Where existing grade is 1 inch or less below elevation of finish grade, fill with topsoil. Place topsoil in a single uncompacted layer and hand grade to required finish elevations. Note raising grade within a tree protection zone should be minimal in area and depth and can be fatal to trees. No grade change is acceptable over Oak tree roots.

3.8 FIELD QUALITY CONTROL

A. Inspections: Engage a certified arborist to direct plant protection measures in the vicinity of trees, shrubs and other vegetation indicated to remain and to prepare inspection reports.

3.9 REPAIR AND REPLACEMENT

A. **The value of trees destroyed or damaged will be charged against the account of the contractor responsible for the damage in an amount determined by the Owner's certified arborist using the ISA-International Society of Arboriculture, Council of Tree & Landscape Appraiser's Guide for Plant Appraisal, Current Edition.** If a replacement tree is provided, the amount charged against the contractor will be reduced by the value of the replacement tree.

B. Repair trees, shrubs and other vegetation indicated to remain or be relocated that are damaged by construction operations, in accordance with a certified arborist's written instructions and approved by the project Architect/Engineer.

C. Submit details of proposed root cutting and tree and shrub repairs.

D. Have certified arborist perform the root cutting, branch pruning, and damage repair of trees and shrubs.

E. Treat damaged trucks, limbs and roots according to certified arborist's written instructions.

F. Perform repairs within 24 hours. Repair or treat Oak wounds immediately.

G. Replace vegetation that cannot be repaired and restored to full growth status, as determined by Architect/Engineer.

H. Remove and replace trees, shrubs and other vegetation indicated to remain that die or are damaged during construction operations that a certified arborist determines are incapable of restoring to normal growth pattern and approved by the project Architect/Engineer.

I. Provide new trees of same size and species as those being replaced at a minimum 2 inches caliper size per ANSI Z.60.1.

J. Plant and maintain as specified in Division 32 Section 92 00 "Plants."

K. Soil Aeration: Aerate surface soil compacted during construction in lawn areas if required by Architect/Engineer. Aerate compacted lawn areas beyond the tree protection zones. Drill 2-inch- (50-mm-) diameter holes a minimum of 12 inches (300 mm) deep at 24 inches (600 mm) o.c. Backfill holes with an equal mix of augured soil and sand.

3.10 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove excess excavated material, displaced trees, trash and debris and legally dispose of them off Owner's property.

B. Burning of surplus and waste materials is not permitted.

END OF SECTION

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SECTION 31 20 00

EARTHWORK

PART 1 GENERAL

1.1 RELATED DOCUMENTS

A. Section 31 20 00 Erosion Control, Section 01 74 19 Recycling, and Section 02 41 13 Demolition.

1.2 DESCRIPTION

A. Excavating, moving, backfilling, compacting, grading and restoration to the lines and grades shown on the Drawings.

B. Excavating, moving, loading, hauling, regrading, stockpiling, and/or disposal of excavation waste materials, including finish grading to the extent and elevations shown on the Drawings.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. ASTM D 1557 – Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 [2,700 kN-m/m3]).
   2. ASTM D 6938 – Standard Test Method for In-place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depths).
   3. ASTM D 4253 – Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
   4. ASTM D 4254 – Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
   5. ASTM C 136 – Method for Sieve Analysis of Fine and Coarse Aggregates.
   6. ASTM D 422 – Method for Particle-Size Analysis of Soils.
   7. ASTM D 2487 – Standard Practice for Classification of Soils for Engineering Purposes.

B. State of Wisconsin Department of Transportation (WI DOT):
   1. Standard Specifications for Highway and Structure Construction, latest edition.

C. City of Madison
   1. Standard Specifications for Public Works Construction, latest edition.

D. State of Wisconsin Department of Natural Resources (WDNR):
   1. Stormwater Management Technical Standards, latest edition.

1.4 SUBMITTALS

A. Submit geotechnical laboratory results to Engineer 1 week prior to filling.
   1. Gradation results for imported fill materials (crushed aggregate base course and quartzite rock).
   2. Modified Proctor results where applicable.

PART 2 PRODUCTS

2.1 FILL MATERIAL

A. Crushed Aggregate Base Course:
   1. Conform to Gradation No. 2 in accordance with Article 401, City of Madison Standard Specifications for Public Works Construction.

B. Coarse Stone/Breaker Rock
   1. Nominal diameter of 1.5 to 3-inches with no more than 12 percent by weight passing the No. 200 U.S. standard sieve.

C. Quartzite Rock
   1. Quartzite stone with nominal diameter of 8 inches.

D. Pipe Bedding Material
   1. As recommended by manufacturer.

E. Native Soil Backfill:
   1. Excavated soil free of objects greater than 4 inches in diameter, frozen material, foreign materials, organics, peat, and free liquids.
   2. Crushed concrete or asphalt meeting Native Soil Backfill requirements if approved by Engineer.

F. Topsoil
   1. Topsoil: Natural loam, sandy loam, silt loam, silty clay loam or clay loam humus-bearing soils available from the overlying portions of excavation areas or imported from a commercial source.

G. Imported General Fill:
   1. Soil that is free of vegetation, ash, wood, organics, debris, refuse, masonry, metal, sharp objects, boulders, snow, and ice.
   2. No solid material larger than 4 inches in its largest dimension.
   3. Crushed concrete or asphalt meeting General Fill requirements if approved by Engineer.

PART 3 EXECUTION

3.1 INSPECTION

A. Examine the areas and conditions where Work will be performed and notify the Owner and Engineer in writing of conditions detrimental to the proper and timely completion of the Work. Do not proceed with the Work until unsatisfactory conditions have been corrected.

3.2 EXCAVATION

A. General:
   1. Excavate to the limits and depths shown on the Drawings.
   2. Segregate and stockpile excavated materials.
   3. Removal of materials beyond the limits and depths shown on the Drawings without authorization of Engineer shall be at the Contractor’s expense, including backfill and compaction.

B. Saw Cutting:
   1. Saw cut and strip away concrete and asphalt surfaces prior to excavating.
   2. Re-saw cut damaged asphalt and concrete prior to placing base course as directed by the Engineer.
   3. Reuse in accordance with backfill material as described in this specification, or recycle in accordance with specification Section 01 74 19 Recycling.

C. Dewatering:
   1. Dewater excavation to facilitate soil excavation below water table.
   2. Construct berms or flumes to direct water away from open excavation.
   3. Maintain excavations and trenches free of water.
   4. Dewatering shall be done in accordance with WDNR Conservation Practice Standard 1061.

D. Perform all Work in accordance with OSHA requirements.

3.3 PREPARATION AND RESTORATION

A. Remove ice and snow before placing Fill. Do not place Fill on frozen subgrade.

B. Cut out soft areas of unsuitable subgrade.

C. Contractor is responsible for preparing, maintaining, and documenting proper subbase.

D. Engineer or Owner will observe surface conditions of subgrade prior to placement of sidewalks or paving.

3.4 FILLING

A. General:
   1. Clear excavations of trash and debris before backfilling.
   2. Carefully place fill material to protect underground structures and utilities.
   3. Do not fill with frozen material.
   4. Inspect excavation prior to backfilling to ensure suitable for backfilling.
   5. If fill settles below the adjacent ground surface, prior to one year following completion of Work, Contractor shall refill settled area and mechanically compact the surface. If backfill settlement damages structures, pavement, landscaping or buried utilities, Contractor shall repair damaged facilities to the satisfaction of the Owner.

B. Filling in Sidewalk or Paved Areas:
   1. Fill sidewalk or paved areas with Native Soil Backfill or Imported General Fill in maximum 10 inch lifts, mechanically compact to at least 90% for depths at least 3 feet below pavement subgrade, and to at least 95% for sand or gravel fill and to at least 92% for silt or clay fill for depths within 3 feet of pavement subgrade, based on modified Proctor maximum dry density as defined by ASTM D 1557.

C. Fill in Non-Paved Area:
   1. Fill landscape areas with Native Soil Backfill or Imported General Fill in maximum 10 inch lifts, mechanically compact to at least 85% for silt or clay fill and to at least 90 percent for sand or gravel fill, based on modified Proctor maximum dry density as defined by ASTM D 1557.

D. Crushed Aggregate Base Course:

1. Mechanically compact to at least 95 percent of modified Proctor maximum dry density as defined by ASTM D 1557.

E. Testing:

1. At their discretion, Owner shall provide and pay for an independent soil testing agency and laboratory to perform compaction and gradation testing. Contractor to coordinate work performed by soil testing agency and independent testing laboratory.

F. Proofrolling:

1. Proofroll excavation subgrade outside of building footprint with a loaded triaxle dump truck or loaded scraper as directed by Engineer.
2. Excavate or stabilize soft or loose soils, if any, as directed by Engineer.
3. Stabilize a soft subgrade by spreading a 6- to 12-inch-thick layer of coarse stone/breaker rock and compacting stone/rock into subgrade until firm, as directed by Engineer.
4. Re-establish subgrade elevation with compacted Native Soil Backfill or compacted Imported General Fill.

3.5 GRADING

A. Grade and finish to within 0.10 foot of grades provided.

B. Uniformly grade areas within limits of backfilled excavations, including adjacent transition areas.

C. Blend slopes with existing landscape features at the intersection of cuts and fills; provide gradual slope between new and existing construction.

3.6 EXCESS SOIL

A. Load, haul, and properly dispose off-site any excess fill material not usable or used during construction.

END OF SECTION

SECTION 31 25 00

EROSION CONTROL

PART 1 GENERAL

1.1 DESCRIPTION

A. Section includes silt fence, riprap, geotextile, erosion control mat, stabilized construction entrance, inlet protection, and mulch for site work erosion control.

B. Erosion and sediment control provisions detailed on Drawings and specified herein are minimum requirements for erosion control program.

1.2 REFERENCES

A. State of Wisconsin Department of Transportation (WisDOT):
   1. Standard Specifications for Road and Bridge Construction, latest edition.
   2. Erosion Control Product Acceptability List, latest edition.

B. State of Wisconsin Department of Natural Resources (WDNR)
   1. Stormwater Management Technical Standards, latest edition.

C. Construction Site Erosion Control Plan and Storm Water Management Plan, dated July 2015.

1.3 QUALITY ASSURANCE

A. General:
   1. Contractor shall repair any areas damaged by erosion for a period of 1 year following completion of final cover construction.

1.4 SUBMITTALS

A. Submit silt fence and geotextile product identification and material specifications 2 weeks prior to installation.

B. Submit erosion control mat product identification and Manufacturer’s installation recommendations 2 weeks prior to installation.

PART 2 PRODUCTS

2.1 GEOTEXTILE

A. Conform to WI DOT Type HR geotextile.

2.2 RIPRAP

A. Conform to WI DOT Medium Riprap.

2.3 EROSION CONTROL MAT

A. Class I, Urban Type B erosion mat included on WI DOT Product Acceptability List (PAL).

2.4 STABILIZED CONSTRUCTION ENTRANCE TRACKING PAD

A. Comply with the requirements of WDNR Technical Standard 1057 (Stone Tracking Pad and Tire Washing).

2.5 SILT FENCE

A. Comply with the requirements of WDNR Technical Standard 1056 (Silt Fence).

2.6 TEMPORARY SEED

A. Temporary seed shall consist of winter wheat or annual ryegrass, in accordance with WDNR Technical Standard 1059 (Seeding for Construction Site Erosion Control).

2.7 MULCH

A. Mulch materials to be in accordance with WDNR Technical Standard 1058 (Mulching for Construction Sites).

2.8 INLET PROTECTION

A. Type D Hybrid, complying with City of Madison standards and WDNR Technical Standard 1060 (Storm Drain Inlet Protection for Construction Sites).

2.9 TEMPORARY USE OF PERMANENT FEATURES

A. When the contract contains items of work, which are of an erosion control or storm water nature, and are intended to be a permanent installation, the Contractor may employ these items in his control of erosion and storm water during his construction activities. However, these items shall be fully cleaned, restored, and in every way fully functioning for its intended permanent use prior to acceptance of the work.

PART 3 EXECUTION

3.1 GENERAL

A. Examine the areas and conditions where Work will be performed and notify Engineer and Owner in writing of conditions detrimental to proper and timely completion of Work. Do not proceed with Work until unsatisfactory conditions have been corrected.

B. Minimize the amount of disturbed area open at a given time.

C. Execute construction to minimize surface water runoff from or to disturbed areas.

D. Avoid runoff or deposition of site materials into drainage features or off the property.

E. Do no track or spill site materials off the property. Off-property tracking or spills must be cleaned up immediately by the Contractor.

F. Contractor shall periodically inspect site work and erosion controls for erosion, sedimentation, or defects. Contractor is to correct deficiencies identified in a timely manner.

G. Contractor is to replace or repair erosions controls affected by the construction. Erosion controls are to be returned to installed conditions or reinstalled to accommodate construction.

H. Install erosion controls for soil stockpiled for seven or more days during the Work and/or when rain is expected.

I. Alterations or additions to the existing erosion controls shall not affect the performance of the erosion control plan and must conform to WDNR best management practices.

3.2 GEOTEXTILE PLACEMENT AND HANDLING

A. Installer shall handle all geotextiles in such a manner as to ensure they are not damaged in any way.

B. Geotextile shall be completely covered with a minimum 6-in. thick layer of earthen material within 48 hours of removing protective wrapping from geotextile.

C. Provide a minimum geotextile overlap width of 2 ft.

D. Any holes or tears in geotextile shall be repaired using a patch made from same geotextile that is spot-seamed in place with a minimum of 24 in. overlap in all directions.

E. Installer shall place all earthen materials located on top of geotextile in such a manner as to ensure no damage of geotextile.

F. Place earthen material over geotextile by pushing material out over geotextile ahead of equipment. Drop height of riprap or other earthen material placed above geotextile shall not exceed 12 inches.

3.3 RIPRAP PLACEMENT

A. Place riprap by hand using larger stones for lower courses. Lay stones perpendicular to slope with ends in contact. Chink spaces between stones with spalls firmly rammed into place.

B. Compact riprap in place.

C. Provide an even, tight finished riprap surface.

D. Inspect weekly and within 24 hours after each rainfall.

3.4 EROSION CONTROL MAT PLACEMENT

A. Install in accordance with Manufacturer’s recommendations.

B. Inspect weekly and within 24 hours after each rainfall.

3.5 STABILIZED CONSTRUCTION ENTRANCE TRACKING PAD

A. Install in accordance with WDNR Technical Standard 1057 (Stone Tracking Pad and Tire Washing).

B. Inspect weekly and within 24 hours after each rainfall.

C. Remove sediment tracked onto public or private roads by street cleaning (not flushing) at the end of each working day.

3.6 SILT FENCE INSTALLATION AND MAINTENANCE

A. Place in accordance with WDNR Technical Standard 1056 (Silt Fence).

B. Inspect weekly and within 24 hours after each rainfall.

C. Repair or replace if silt fence is torn, sagging, overtopped, blown over (laying down), or in any way is not functioning for sediment containment.

D. Remove sediment when sediment deposits reach no more than one half of silt fence height. Remove silt fence once contributing drainage area is stabilized with vegetation or impervious surface.

3.7 TEMPORARY SEEDING APPLICATION

A. Apply temporary seeding in accordance with Temporary Seeding rates specified in WDNR Technical Standard 1059 (Seeding for Construction Site Erosion Control).

B. Repair and reseed areas that have erosion damage as directed by Engineer.

C. Inspect weekly and within 24 hours after each rainfall.

3.8 MULCH PLACEMENT AND MAINTENANCE

A. Place mulch on seeded areas within 24 hours after seeding has been completed.

B. Begin mulching at top of slope and proceed downward.

C. Maintain mulched areas and repair any areas damaged by wind, erosion, traffic, or other causes prior to final acceptance of work under contract.

D. Place mulch in accordance with WDNR Technical Standard No. 1058 (Mulching for Construction Sites).

E. Inspect weekly and within 24 hours after each rainfall.

3.9 INLET PROTECTION PLACEMENT AND MAINTENANCE

A. Place in accordance with WDNR Technical Standard 1060 (Storm Drain Inlet Protection for Construction Sites) and manufacturer’s recommendations.

B. Repair or replace if fabric is torn, overtopped or in any way not functioning for sediment removal/containment.

C. Inspect weekly and within 24 hours after each rainfall.

D. Remove inlet protection once the contributing drainage area is stabilized with vegetation or impervious surface.

END OF SECTION

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SECTION 32 13 13

CONCRETE PAVEMENT AND PAVEMENT MARKINGS

PART 1 GENERAL

1.1 DESCRIPTION

A. Section includes all labor, materials, equipment, and related services necessary to furnish and install all concrete pavement (sidewalks and bottom of dry detention basin) as indicated on Drawings or specified herein.

B. Section also includes pavement marking for handicap stall as indicated on Drawings or specified herein.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):
1. ASTM D 1557 - Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft3 (2,700 kN-m/m3)).
2. ASTM D 6938 - Standard Test Method for In-place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depths).
3. ASTM D 4253 - Standard Test Method for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table.
4. ASTM D 4254 - Standard Test Method for Minimum Index Density and Unit Weight of Soils and Calculation of Relative Density.
5. ASTM C 136 - Method for Sieve Analysis of Fine and Coarse Aggregates.
6. ASTM D 422 - Method for Particle-Size Analysis of Soils.
7. ASTM D 2487 – Standard Practice for Classification of Soils for Engineering Purposes.

B. State of Wisconsin Department of Transportation (WI DOT):
1. Standard Specifications for Highway and Structure Construction, latest edition.

C. City of Madison
1. Standard Specifications for Public Works Construction, latest edition.

1.3 SUBMITTALS

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

B. Other Action Submittals:
1. Design Mixtures: For each concrete mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

1.4 QUALITY ASSURANCE

A. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

B. ACI Publications: Comply with ACI 301 (ACI 301M) unless otherwise indicated.

PART 2 PRODUCTS

2.1 CONCRETE MATERIALS

A. In accordance with Article 301 and 303, City of Madison Standard Specifications, for sidewalks.

2.2 CURING MATERIALS

A. In accordance with Article 301 and 303, City of Madison Standard Specifications, for sidewalks

2.3 RELATED MATERIALS

A. Joint Fillers: In accordance with Article 301 and 303, City of Madison Standard Specifications, for sidewalks.

2.4 PAVEMENT MARKINGS

A. Pavement-Marking Paint: MPI #97 Latex Traffic Marking Paint.
1. Color: Yellow

2.5 CONCRETE MIXTURES

A. Prepare design mixtures, proportioned according to ACI 301 (ACI 301M), with the properties specified in Article 301 and 303, City of Madison Standard Specifications, for sidewalks:

B. Chemical Admixtures: In accordance with Article 301 and 303, City of Madison Standard Specifications, for sidewalks.

2.6 CONCRETE MIXING

A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M and ASTM C 1116/C 1116M. Furnish batch certificates for each batch discharged and used in the Work.

PART 3 EXECUTION

3.1 EXAMINATION AND PREPARATION

A. Proof-roll prepared subbase surface below concrete paving to identify soft pockets and areas of excess yielding.

B. Remove loose material from compacted subbase surface immediately before placing concrete.

3.2 PLACEMENT

A. Place and install all components of concrete construction in accordance with Article 301 and 303, City of Madison Standard Specifications, for sidewalks, unless otherwise noted on Drawings.

3.3 SIDEWALK CONCRETE TOLERANCES

A. Comply with tolerances in ACI 117 and as indicated in Article 301 and 303, City of Madison Standard Specifications for Public Works Construction.

3.4 PAVEMENT MARKING

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

B. Apply paint with mechanical equipment to produce markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).

3.5 REPAIRS AND PROTECTION

A. Remove and replace concrete paving that is broken, damaged, or defective or that does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect, Engineer or Owner.

B. Protect concrete paving from damage. Exclude traffic from paving for at least 14 days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.

C. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

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SECTION 33 48 00

PIPING

PART 1 GENERAL

1.1 DESCRIPTION

A. Section includes requirements for storm water piping.

1.2 REFERENCES

A. American Society of Testing Materials (ASTM)
1. ASTM C76-13a – Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe

B. State of Wisconsin Department of Transportation (WisDOT):
1. Standard Specifications for Highway and Structure Construction, latest edition.

PART 2 PRODUCTS

2.1 STORM SEWER PIPE

A. RCP Class III or equivalent.

PART 3 EXECUTION

3.1 INSTALLATION

A. Piping
1. Set to elevations indicated on Drawings.
2. Install pipe in accordance with manufacturer's instructions and Section 31 20 00.

END OF SECTION

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SECTION 32 92 00
SEEDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section Includes:

1. Seeding.
2. Turf renovation.
3. Erosion-control material(s).

B. Related Requirements:

1. Section 329300 "Plants" for plants as well as border edgings and mow strips.
2. Section 329220 "Native Seeding"

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Pesticide: A substance or mixture intended for preventing, destroying, repelling, or mitigating a pest. Pesticides include insecticides, miticides, herbicides, fungicides, rodenticides, and molluscicides. They also includes substances or mixtures intended for use as a plant regulator, defoliant, or desiccant.

C. Pests: Living organisms that occur where they are not desired or that cause damage to plants, animals, or people. Pests include insects, mites, grubs, mollusks (snails and slugs), rodents (gophers, moles, and mice), unwanted plants (weeds), fungi, bacteria, and viruses.

D. Planting Soil: Existing, on-site soil; imported soil; or manufactured soil that has been modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

E. Subgrade: The surface or elevation of subsoil remaining after excavation is complete, or the top surface of a fill or backfill before planting soil is placed.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For landscape Installer.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture, stating the botanical and common name, percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for **turfgrass**. Include identification of source and name and telephone number of supplier.

C. Product Certificates: For fertilizers, from manufacturer.

D. Pesticides and Herbicides: Product label and manufacturer's application instructions specific to Project.

1.5 CLOSEOUT SUBMITTALS

A. Maintenance Data: Recommended procedures to be established by Owner for maintenance of turf during a calendar year. Submit before expiration of required maintenance periods.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful turf establishment.

1. Professional Membership: Installer shall be a member in good standing of either the Professional Landcare Network or the American Nursery and Landscape Association.
2. Experience: **Three** years' experience in turf installation in addition to requirements in Section 014000 "Quality Requirements."
3. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when work is in progress.

4. Pesticide Applicator: State licensed, commercial.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Seed and Other Packaged Materials: Deliver packaged materials in original, unopened containers showing weight, certified analysis, name and address of manufacturer, and indication of compliance with state and Federal laws, as applicable.

B. Bulk Materials:

1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials; discharge of soil-bearing water runoff; and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk materials with appropriate certificates.

1.8 FIELD CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with initial maintenance periods to provide required maintenance from date of **planting completion**.

1. Spring Planting: May 1 to June 30.
2. Fall Planting: September 1 to October 30.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit planting to be performed when beneficial and optimum results may be obtained. Apply products during favorable weather conditions according to manufacturer's written instructions.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species:

1. Quality: State-certified seed of grass species as listed below for solar exposure.
2. Quality: Seed of grass species as listed below for solar exposure, with not less than **85** percent germination, not less than **95** percent pure seed, and not more than **0.5** percent weed seed:
3. Sun and Partial Shade: Proportioned by weight as follows:

    a. 50 percent Kentucky bluegrass (Poa pratensis).
    b. 30 percent chewings red fescue (Festuca rubra variety).
    c. 10 percent perennial ryegrass (Lolium perenne).
    d. 10 percent redtop (Agrostis alba).

2.2 FERTILIZERS

A. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: **1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m)** of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

B. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing laboratory.

2.3 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic and free of plant-growth or germination inhibitors; with a maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

C. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.4 PESTICIDES

A. General: Pesticide, registered and approved by the EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Nonselective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Nonselective): Effective for controlling weed growth that has already germinated.

2.5 EROSION-CONTROL MATERIALS

A. Erosion-Control Blankets: Biodegradable wood excelsior, straw, or coconut-fiber mat enclosed in a photodegradable plastic mesh. Include manufacturer's recommended steel wire staples, 6 inches (150 mm) long.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to be planted for compliance with requirements and other conditions affecting installation and performance of the Work.

1. Verify that no foreign or deleterious material or liquid such as paint, paint washout, concrete slurry, concrete layers or chunks, cement, plaster, oils, gasoline, diesel fuel, paint thinner, turpentine, tar, roofing compound, or acid has been deposited in soil within a planting area.

2. Suspend planting operations during periods of excessive soil moisture until the moisture content reaches acceptable levels to attain the required results.
3. Uniformly moisten excessively dry soil that is not workable or which is dusty.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. If contamination by foreign or deleterious material or liquid is present in soil within a planting area, remove the soil and contamination as directed by Architect and replace with new planting soil.

3.2 PREPARATION

A. Protect structures; utilities; sidewalks; pavements; and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from seeding overspray.
2. Protect grade stakes set by others until directed to remove them.

B. Install erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 TURF AREA PREPARATION

A. General: Prepare planting area for soil placement and mix planting soil according to **Section 329113 "Soil Preparation."**

B. Placing Planting Soil: **Place and mix planting soil in place over exposed subgrade**.

C. Moisten prepared area before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

D. Before planting, obtain Architect's acceptance of finish grading; restore planting areas if eroded or otherwise disturbed after finish grading.

3.4 PREPARATION FOR EROSION-CONTROL MATERIALS

A. Prepare area as specified in "Turf Area Preparation" Article.

B. For erosion-control mats, install planting soil in two lifts, with second lift equal to thickness of erosion-control mats. Install erosion-control mat and fasten as recommended by material manufacturer.

C. Fill cells of erosion-control mat with planting soil and compact before planting.

D. For erosion-control blanket or mesh, install from top of slope, working downward, and as recommended by material manufacturer for site conditions. Fasten as recommended by material manufacturer.

E. Moisten prepared area before planting if surface is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

3.5 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph (8 km/h).

1. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
2. Do not use wet seed or seed that is moldy or otherwise damaged.
3. Do not seed against existing trees. Limit extent of seed to outside edge of planting saucer.

B. Sow seed at a total rate of **3 to 4 lb/1000 sq. ft.**.

C. Rake seed lightly into top 1/8 inch (3 mm) of soil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding **1:4 with erosion-control blankets** installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with erosion-control mats where indicated on Drawings; install and anchor according to manufacturer's written instructions.

F. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of **2 tons/acre (42 kg/92.9 sq. m)** to form a continuous blanket **1-1/2 inches (38 mm)** in loose thickness over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into soil with suitable mechanical equipment.
2. Bond straw mulch by spraying with asphalt emulsion at a rate of **10 to 13 gal./1000 sq. ft. (38 to 49 L/92.9 sq. m)**. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.6 TURF RENOVATION

A. Renovate existing turf where indicated.

B. Renovate turf damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish turf where settlement or washouts occur or where minor regrading is required.
2. Install new planting soil as required.

C. Remove sod and vegetation from diseased or unsatisfactory turf areas; do not bury in soil.

D. Remove topsoil containing foreign materials, such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

E. Mow, dethatch, core aerate, and rake existing turf.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches (150 mm).

I. Apply **soil amendments and** initial fertilizer required for establishing new turf and mix thoroughly into top 4 inches (100 mm) of existing soil. Install new planting soil to fill low spots and meet finish grades.
   1. Initial Fertilizer: **Commercial fertilizer** applied according to manufacturer's recommendations.

J. Apply **seed and protect with straw mulch** as required for new turf.

K. Water newly planted areas and keep moist until new turf is established.

3.7 TURF MAINTENANCE

A. General: Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.

   1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
   2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
   3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches (100 mm).

   1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
   2. Water turf with fine spray at a minimum rate of 1 inch (25 mm) per week unless rainfall precipitation is adequate.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than one-third of grass height. Remove no more than one-third of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:

D. Turf Postfertilization: Apply **slow-release fertilizer** after initial mowing and when grass is dry.

1. Use fertilizer that provides actual nitrogen of at least **1 lb/1000 sq. ft. (0.45 kg/92.9 sq. m)** to turf area.

3.8 SATISFACTORY TURF

A. Turf installations shall meet the following criteria as determined by Architect:

1. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding **90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches (125 by 125 mm)**.

B. Use specified materials to reestablish turf that does not comply with requirements, and continue maintenance until turf is satisfactory.

C. Watering: Install and maintain temporary piping, hoses, and meadow-watering equipment to convey water from sources and to keep meadow uniformly moist.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water meadow with fine spray at a minimum rate of 1/2 inch (13 mm) per week for **eight** weeks after planting unless rainfall precipitation is adequate.

3.9 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents according to requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Nonselective): Apply only as necessary to treat already-germinated weeds and according to manufacturer's written recommendations.

3.10 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by turf work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

C. Erect temporary fencing or barricades and warning signs as required to protect newly planted areas from traffic. Maintain fencing and barricades throughout initial maintenance period and remove after plantings are established.

3.11 MAINTENANCE SERVICE

A. Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in "Turf Maintenance" Article. Begin maintenance immediately after each area is planted and continue until acceptable turf is established, but for not less than the following periods:

1. Seeded Turf: **90** days from date of **planting completion**.

a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.

END OF SECTION

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SECTION 32 92 20
NATIVE SEEDING

PART 1 GENERAL

1.1 SECTION SUMMARY

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3. Submittals
4. Delivery, Storage and Handling
5. Equipment
6. Planting Season
7. Guarantee
8. Native Seed
9. Native Seed Mix
10. Nurse Crop
11. Water
12. Mulch
13. Erosion Control Blanket
14. Erosion Control Fiber Mesh
15. Nonselective Herbicides
16. Preparation
17. Sowing
18. Seeding Rates
19. Mulching and Erosion Control
20. Cleaning and Repair
21. Maintenance

1.2 SUMMARY OF WORK

A. The work under this section shall consist of providing all work, materials, labor, equipment and supervision necessary to complete seeding, mulching and maintenance as indicated on the drawings. Included are the following topics:

1.3 RELATED WORK

A. Section 32 92 00 – Plants

1.4 SUBMITTALS

A. Provide seed samples and data showing seed mix composition and a guarantee of germination.

B. Provide seed mixture.

C. Provide anticipated planting dates.

D. Provide information on method of sowing seed.

E. Provide recommended maintenance procedures to be established by Owner for maintenance of native seeding areas during a calendar year. Submit before expiration of required maintenance periods.

A. Provide mulch, erosion control blanket, and Erosion Control photodegradable mesh sample.

1.5 DELIVERY, STORAGE AND HANDLING

A. Seed shall be delivered to the site in its original, unopened container, labeled as to weight, analysis, and manufacturer. Store any seed delivered prior to use in a manner safe from damage from heat, moisture, rodents, or other causes. Any seed damaged after acceptance shall be replaced by the Contractor.

1.6 EQUIPMENT

A. All equipment brought into project site shall be clean and free of weed seed or seed from previous applications. The intent is reducing the spread of noxious and invasive plants and weeds within the State of Wisconsin.

1.7 PLANTING SEASON

A. The regular seeding season is considered May 1 to June 30 and Dormant Seeding is October 30 to snowfall.

1.8 GUARANTEE

A. The Contractor shall guarantee the germination of seed installed during the regular seeding season.

PART 2 PRODUCTS

2.1 NATIVE SEED

A. Forb and grass seed shall conform to the Wisconsin Statutes and Wisconsin Administrative Code Chapter ATCP regarding noxious weed seed content and labeling.

B. Test forb and grass seed according to the methods and procedure used for sampling and analyzing seed for purity, germination, and noxious weed seed content specified in the current edition of Rules for Testing Seed, Published by the Association of Official Seed Analysts.

C. Use seed within one year of the test date appearing on the label.

D. Inoculate legume seed unless it has been pre-inoculated by the vendor. Follow the inoculation instructions that come with the culture purchases. Avoid exposure of the culture or inoculated seed to the sunlight, and in no case shall any exposure exceed ½ hour.

E. Store any seed delivered before use in a manner that protects it from damage by heat, moisture, rodents, or other causes. Discard and replace any previously tested and accepted seed that becomes damaged.

F. Seed carrier (only when hand broadcasting) shall be inert material, sawdust, perlite, peat moss or vermiculite mixed with seed at a ratio of not less than two parts seed carrier to one part seed.

2.2 NATIVE SEED MIX

A. Provide seed of grass species and varieties, proportions by weight, and minimum percentages of purity, germination and maximum percentage of weed seed as indicated below.

B. Species composed of pure live seed (PLS) shall contain no named or improved varieties. PLS shall be from Wisconsin, Northern Illinois, Northeastern Iowa or Eastern Minnesota nurseries specializing in growing native species from Wisconsin genotypes.

C. Grasses classified as “agriculture grasses” shall be PLS as specified. Other seed shall be “clean” according to high quality industry standards. All seed shall be cold, dry stratified; legumes shall be inoculated with proper rhizombia immediately prior to planting (three hours or less). Legumes shall be kept out of the forb mixture until after inoculation. Seed mixture shall be blended by the vendor and ratios of various species shall be guaranteed by the vendor in writing as specified. Minimum percent purity for native species is 90 percent. Any substitutions of species due to availability must be approved by project architect or engineer.

D. Native Seed Mix A (Upper Basin): A mixture shall be from the following forbs, sedges, rushes and grasses with no more than ten percent by weight of any one species listed. Use a seeding rate at ¼ lb per 1000 square feet (approximately 8-10 lb per acre).

Forbs and legumes:*

Common Name	Botanical Name
Red Milkweed	Asclepias incarnata
New England Aster	Aster novae-angliae
*White Wild Indigo	Baptisia leucantha
Joe Pye Weed	Eupatorium maculatum
Ox Eye Sunflower	Heliopsis helianthoides
Prairie Blazingstar	Liatris pycnostachya
Cardinal Flower	Lobelia cardinalis
Bergamot	Monarda fistulosa
Yellow Coneflower	Ratibida pinnata
Sweet Black Eyed Susan	Rudbeckia subtomentosa
Spiderwort	Tradescantia ohiensis

Grasses, Rushes and Sedges:

Fringed Brome	Bromus ciliates
Bluejoint Grass	Calamagrostis canadensis
Bebb's Sedge	Carex bebbii
Bottlebrush Sedge	Carex comosa
Porcupine Sedge	Carex hystericina
Awl Fruited Sedge	Carex stipata
Brown Fox Sedge	Carex vulpinoidea
Canada Wild Rye	Elymus canadensis
Virginia Wild Rye	Elymus virginicus
Dark Green Bulrush	Scirpus atrovirens
Woolgrass	Scirpus cyperinus
Prairie Cordgrass	Spartina pectinata

E. Native Seed Mix B (Grass Swale): A mixture shall be from the following forbs, sedges, rushes and grasses with no more than ten percent by weight of any one species listed. Use a seeding rate at ¼ lb per 1000 square feet (approximately 8-10 lb per acre).

Grasses and Sedges:

Side Oats Grama	Bouteloua curtipendula
Ivory Sedge	Carex eburnean
Pennsylvania Sedge	Carex pensylvanica
Bottlebrush Grass	Hystrix patula
Prairie Dropseed	Sporobolus heterolepis
Little Bluestem	Schizachyrium scoparium

F. Native Seed Mix C (Forebay/Lower Basin): A mixture shall be from the following forbs, sedges, rushes and grasses with no more than ten percent by weight of any one species listed. Use a seeding rate at ¼ lb per 1000 square feet (approximately 8-10 lb per acre).

Forbs and legumes:*

Common Name	Botanical Name
Purple Hyssop	Agastache scrophulariaefolia
Ox Eye Sunflower	Heliopsis helianthoides
Prairie Blazingstar	Liatris pycnostachya
Bergamot	Monarda fistulosa
Yellow Coneflower	Ratibida pinnata
Brown Eyed Susan	Rudbeckia subtomentosa
Stiff Goldenrod	Solidago rigida
Blue Vervain	Verbena hastata

Grasses, Rushes and Sedges:

Side Oats Grama	Bouteloua curtipendula
Pennsylvania Sedge	Carex pensylvanica
Copper-shouldered Oval Sedge	Carex bicknellii
Fringed Brome	Bromus ciliates
Bebb's Sedge	Carex bebbii
Bottlebrush Sedge	Carex comosa
Porcupine Sedge	Carex hystericina
Canada Wild Rye	Elymus canadensis
Switchgrass	Panicum virgatum
Indiangrass	Sorghastrum nutans

2.3 NURSE CROP

A. Nurse crops such as annual rye can be planted with the native seed to stabilize the soil and reduce weed growth. Use Annual Rye (5 lbs/acre) for spring planting. Use Annual Rye (15lbs/acre) for late fall planting.

2.4 WATER

A. Use water free of wastewater effluent or other hazardous chemicals.

2.5 MULCH

A. Clean straw or marsh hay that is well-seasoned, and free of rot, mildew and the seeds of noxious weeds.

2.6 EROSION CONTROL BLANKET

A. 100% biodegradable weed free wood excelsior, straw, or coconut-fiber mat enclosed in a biodegradable netting stitched with biodegradable thread/yarn, (biodegradable within 12 months of installation) or net free. Include manufacturer's recommended steel wire staples, 6" (150 mm) long or biodegradable anchoring staples, T shaped with barbed head and shoulders, 6" (150 mm). Wisconsin DOT approved Class 1 Urban Type B erosion mat or similar are acceptable. Biodegradable materials are intended to avoid entrapment of animals.

2.7 NONSELECTIVE HERBICIDES

A. EPA registered and approved glyphosate-based herbicide (broad spectrum, non-persistent) intended for vegetation removal while preparing seed beds and for maintenance during establishment period and recommended surfactants and adjuvants.

PART 3 EXECUTION

3.1 WEED CONTROL

A. On a daily basis, prior to entering the project site all equipment to be used at the project shall be sprayed clean of all dirt, sod, or foreign matter with high-pressure water in an upland location outside of the project site that does not drain to the site or in Contractor's shop. Equipment cleaned shall include, but is not limited to, all dozers, scrapers, backhoes, trucks, shovels, picks, and hand tools that enter the project site. Special care shall be taken to cleanse the underbody, suspension, tracks, wheels, tires, and wheel wells of all motorized equipment. If necessary, hand tools, brushes, or scrapers may be required to remove heavy accumulations of debris from any item. After a thorough cleaning and inspection, each item of equipment shall be allowed to enter and be used on the project site. If it is necessary for the equipment to leave and reenter the project site, each item shall be cleaned and inspected.

3.2 PREPARATION

A. Complete grading, shouldering, topsoiling before permanent seeding. Just before seeding, work the area with discs, harrows or other appropriate equipment to obtain a reasonably even and loose seedbed.

B. No seeding shall occur on frozen ground or at temperatures lower than 32° F (0° C).

C. For spring planting mow vegetation to 4 inches or less in height 4-6 weeks before seeding. Ten days after mowing, spray vegetation with a broad spectrum, non-persistent glyphosate-based herbicide per manufacturer's instructions. Retreat vegetation with broad spectrum, non-persistent glyphosate-based herbicide after initial application if live vegetation persists. Seeding or planting should occur after time period specified by manufacturer.

D. 3.3For fall planting mow vegetation to 4 inches or less in height 4-6 weeks before seeding. Ten days after mowing, spray vegetation with a broad spectrum, non-persistent glyphosate-based herbicide per manufacturer's instructions. Retreat vegetation with broad spectrum, non-persistent glyphosate-based herbicide after initial application if live vegetation persists. Seeding or planting should occur after time period specified by manufacturer.

3.3 SOWING

A. Sow the selected seed mixture with a No-Till type drill with one or more seed boxes that can be calibrated independently to deliver different sized seeds uniformly at the required rate equipped with area-mounted press wheel for each seed drop tube or by scattering it uniformly over the areas to be seeded. If seeding into existing vegetation use a rangeland type drill with a no-till attachment that can cut through the thatch in front of the V disc and seed drop tube. If the configuration of the area to be seeded allows, apply at ½ the specified seed rate and apply the second ½ in a perpendicular direction.

B. Hand broadcast seeding may be used for small areas with difficult access on prepared seedbeds. Follow by light raking or dragging to cover the seed with approximately ¼ inch of soil. If the seedbed is too loose or if the seedbed contains clods that might reduce seed germination lightly roll or compact the areas using suitable equipment, preferably the cultipacker type. Do not roll slopes steeper than 1:3.

3.4 SEEDING RATES

A. Use the following seed rates for seeds in pounds per 1000 square feet of area: ¼ lb per 1000 square feet (approximately 8-10 lb per acre).

3.5 MULCHING AND EROSION CONTROL

A. A covering of 1-2 inches of weed-free straw or marsh hay after seeding holds moisture and increases germination. This is particularly important on dry sandy soils and heavy clay soils. Straw should completely cover the soil surface. Chop and blow straw onto the area. On steep slopes and windy sites applying a erosion control blanket instead of straw mulch.

B. Erosion control blanket or mat shall be installed on slopes of 30% or greater and other locations where indicated.

3.6 CLEANING AND REPAIR

A. Waste and excess material from the seeding operation shall be promptly removed. Adjacent paved areas are to be cleaned, and any damage to existing adjacent turf areas shall be repaired.

3.7 GENERAL MAINTENANCE

A. Immediately reseed areas which do not show a developing stand of cover. Reseeding shall be the same as that originally specified for that particular area. As native mixtures are difficult to assess the first year of growth, satisfactory establishment of the cover crop and general erosion control in these mixes shall constitute baseline establishment. Development of native seeds will be assessed as noted below.

B. Correct damage resulting from erosion, gullies, rills, or other causes by filling with topsoil, tamping, and reseeding if damage occurs prior to end of warranty period.

3.8 MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable Native Seeding is established.

B. Maintain Native Seeding for the first growing season following initial acceptance and through the **second** growing season.

C. Maintain by mowing the planting when the nurse cover or weed vegetation reaches a height of 10”-12”. Mow to a height of 6” except for first mowing which shall be to a 4” height. Mowing can be expected approximately every 3-4 weeks the first season depending on the weed species present. Raking and removal of clippings shall occur when greater than 50% of the plant height is removed.

D. Water just enough to keep the soil moist, every other day for 15 minutes to half an hour to maintain adequate surface soil moisture for proper seed germination. Watering shall continue for not less than 30 days following seeding. After the first eight weeks water only if it does not rain for one week, continue watering until final acceptance.

E. During the second and third growing seasons one mowing is required in early June, mow to a 6” height. Mow using a flail type mower, which will finely chop and not smother the new seedlings.

F. Selectively treat with a broad spectrum, non-persistent glyphosate-based herbicide aggressive weeds such as Canada Thistle and Horsenettle. Treat only on cool windless days preferably by gloved hand wiping method.

G. Prior to Initial Acceptance and during the Warranty period beginning with the Initial Acceptance:

1. Weeding Inspection: Inspect the seeded areas at a sufficient frequency to ensure that weeds do not re-seed themselves. Minimum inspection frequency shall include a spring, summer, and fall inspection.

2. Notify the Owner and Architect/Engineer of the inspection no less than 48 hours prior to an inspection. The inspections shall be performed with Owner and Architect/Engineer in attendance. A report of the findings will be sent to the Contractor including agreed upon maintenance required.

3. Implement the appropriate weed control approach(es) within 7 calendar days of the inspection, as conditions allow. If weather and/or site conditions would cause unnecessary damage to the site,

4. Notify the Owner and Architect/Engineer and provide a schedule for implementing the maintenance protocols.

5. Maintain the weed coverage at less than 10 percent of the seeded area. Weed control methods shall be approved by Owner and the Architect/Engineer.

6. Track maintenance activities performed (including herbiciding, weeding, seeding, and watering) and provide a written report to the Owner at the end of the first full growing season documenting the completed activities.

7. Other maintenance activities may be completed at the Contractor’s discretion to meet the Warranty performance criteria. Notify the Owner of planned additional maintenance activities prior to implementation.

3.9 WARRANTY

A. Contractor shall warranty all seeding for a period of one full growing season, beginning with the Initial Acceptance.

B. After one full growing season, all areas receiving seed:

1. The seeded species including cover crop shall provide at least 65% coverage with no area devoid of the seeded species greater than 9 square feet.

2. The weed coverage shall be less than 25%.

3. Notify Owner and Architect/Engineer to set up an end of first full growing season warranty inspection.

C. If the Contractor fails to meet the Warranty performance criteria at the end of the first full growing season, the Owner, Architect/Engineer and Contractor shall agree to an approach for increasing the density of the seeded species and/or decreasing the density of weeds, which may include but not be limited to:

1. Herbiciding portions of or the entire seeded area.

2. Re-seeding portions of or the entire seeded area.

3. Selective use of live plants.

D. If over 25 percent of the seeded area requires non-selective herbiciding and re-seeding at the end of one full growing season, the Contractor shall provide additional Maintenance for one full growing season following the Warranty period for the re-seeded areas.

3.10 WARRANTY INSPECTIONS

A. Owner, Architect/Engineer will perform a warranty inspection at the end of the first full growing season.

B. The inspection will consist of visual inspection of each predefined seeded areas.

C. The visual inspection will be used to determine conformance with warranty provisions.

D. After the warranty inspection, a written inspection report will be provided to the Contractor documenting the findings and listing the suggested approach for meeting warranty provisions.

END OF SECTION

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SECTION 32 93 00
PLANTS

PART 1 GENERAL

1.1 SECTION SUMMARY

1. Scope
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6. Inspection
7. Substitutions
8. Delivery, Storage and Handling
9. Planting Schedule
10. Job Conditions
11. Guarantee
12. Materials
13. Preparation
14. Planting of Trees and Shrubs
15. Finishing
16. Staking
17. Planting of Ground Covers, Perennials, Annuals and Bulbs
18. Inspection and Acceptance
19. Cleaning
20. Pruning
21. Maintenance

1.2 SUMMARY OF WORK

A. These specifications, along with contract drawings and lists of plant materials, apply to those items necessary for and incidental to the preparation, execution, completion and maintenance of the landscape planting activities (excluding lawn areas) specified in the contract. The scope includes the planting of trees, shrubs, ground covers, perennials, annuals, and bulbs, and the maintenance activities of fertilizing, pruning and watering.

1.3 RELATED WORK

A. Section 32 92 20 – Native Seeding

1.4 REFERENCES

A.	ANSI Z60.1	American Standards for Nursery Stock
B.	ANSI A300	American National Standard for Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance-Standard Practices
C.	WisDOT	Standard Specifications for Highway and Structure Construction Standardized Plant Names, Second Edition (1942). American Joint Committee on Horticulture Nomenclature, Horace McFarland Company, Harrisburg, PA.

1.5 QUALITY ASSURANCE

A. All plant material shall conform to the *American Standards for Nursery Stock*, unless noted otherwise herein.

B. All plant material shall be true to the species and variety/hybrid/cultivar specified, and nursery-grown in accordance with good horticultural practices, and under climatic conditions similar to those of the site location. Nursery dug specimens to be replanted shall have been freshly dug and properly prepared for planting.

C. Trees and shrubs shall be trained in development and appearance as to be superior in form, compactness and symmetry. Trees with multiple leaders, unless specified otherwise, and shrubs with damaged or cut main stem(s), will be rejected.

D. Trees and shrubs with a damaged, cut or crooked leader, abrasion of bark, sunscald, frost crack, disfiguring knots, insects (including eggs and larvae) or insect damage, cankers/cankerous lesions or fungal mats, mold, prematurely-opened buds, or cuts of limbs over 3/4" (1.9 cm) diameter that are not completely callused will be rejected.

E. Trees and shrubs shall have healthy, well-developed root systems, and be free from physical damage or other hindrances to healthy growth.

F. Balled and burlapped plants shall be dug with solid balls of a diameter not less than that recommended by the *American Standards for Nursery Stock*, and of sufficient depth to include both fibrous and feeding roots. Balls shall be securely wrapped with burlap, and tightly bound with rope or twine. No plant shall be bound with rope or wire in such manner as to damage bark or break branches. The root flare should be within the top 2" (5.1 cm) of the soil ball.

G. Balled and burlapped plants will not be accepted if the ball is dry, cracked, or broken before or during planting.

H. Containerized plants are to be well-established within the container, with a root system sufficiently developed to retain its shape and hold together when removed from the container. Soil within the container should be held together by the roots, in form and whole. Plants shall not be pot-bound, nor have kinked, circling, or bent roots.

I. Bare root plants are to have a healthy, well-branched, and adequately spreading root system characteristic of the species.

J. Herbaceous perennials, annuals and bulbs shall only be supplied from nurseries certified by state plant inspectors. Substitutes or collected material may be used if approved by Owner or Architect/Engineer.

K. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed

L. For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

1. Testing methods and written recommendations shall comply with USDA's Handbook No. 60.
2. The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Architect. A minimum of [**three**] [ ] representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.

3. Report suitability of tested soil for plant growth.

4. Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

5. Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

1.6 MEASUREMENT

A. Plants shall conform to the measurements specified within the contract documents. Specified height and spread dimensions will refer to the main body of the plant, and not from branch tip to branch tip. Plants meeting a specified measurement, but judged to lack the balance between height and spread characteristic of the species will be rejected.

B. Plants shall be measured when branches are in their normal position.

C. No plant shall be less than the minimum size specified, and no less than fifty (50) percent of the plants shall be as large as the maximum size specified.

D. Measure trees and shrubs with branches and trunks or canes in their normal position. Take height measurements from or near the top of the root flare for field-grown stock and container grown stock. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip to tip. Take caliper measurements 6 inches above the root flare for trees up to 4-inch caliper size, and 12 inches above the root flare for larger sizes.

E. Containerized shrubs shall be measured by height and width for conformity with the plant list.

F. Herbaceous perennials shall be measured by pot size, not by top growth.

G. All other measurements, such as number of canes, ball sizes, and quality designations, shall conform to *American Standards for Nursery Stock.*

1.7 INSPECTIONS

A. Plant materials shall be subject to pre-delivery inspection and approval by the Owner or Architect/Engineer at a nursery or some other site where they are growing, this to judge conformity with specified requirements. Upon securing all plant materials, the Contractor shall submit to Owner a written request for inspection at least five (5) working days prior to the proposed date. After approval by the Owner or Architect/Engineer, the plant is to be tagged for delivery.

B. Tagged plants are to be inspected on delivery to the project site, and the Owner or Architect/Engineer may reject any specimens no longer meeting the specified standards or that have been damaged in transit.

C. A representative of the Contractor shall be present at all inspections by the Owner or Architect/Engineer.

1.8 SUBSTITUTIONS

A. The substitution of plant materials is not permitted unless authorized in writing by Owner. If written proof is submitted by the Contractor that a plant of specified species, variety or size is unavailable, consideration will be given towards the nearest available size or variety, or towards an alternate species selection, with a corresponding adjustment of the contract price.

B. Larger plants than those specified can be used upon approval of the Owner or Architect/Engineer. The use of larger plants shall not increase the contract price. The root ball, root spread and container size of the larger specimen shall be proportionally increased, relative to the specified size.

1.9 DELIVERY, STORAGE AND HANDLING

A. The Contractor is to arrange for the acceptance and unloading of plants at the project site.

B. All plants are to be labeled by plant name and size. Labels shall be attached securely to all plants, bundles, and containers of plant materials when delivered. Labels shall be durable and legible, with information given in weather-resistant ink or embossed process lettering.

C. All plant materials, shipments and deliveries shall comply with current state and federal laws and regulations governing the inspection, shipping, selling and handling of plant stock. If required by law or regulation, a certificate of inspection, or a copy thereof, for injurious insects, plant diseases, and other plant pests shall accompany each shipment or delivery of

plant material. The certificate shall bear the name(s) and address(es) of the source of the plant stock.

D. During transport, no plant shall be bound with rope or wire in a manner that damages trunks or breaks branches. Plants shall also not be dragged, lifted or pulled by the trunk, branches or foliage in a damaging way. No plant shall be thrown off of a truck or loader to the ground.

E. Prior to installation, all plants must be protected from sun and drying winds.

F. Containerized or balled and burlapped plants not being installed immediately must be kept in a shaded area, well-covered with wood chips, soil, or other approved material, and kept well-watered. Install all plants within three (3) days of delivery.

G. Cover roots of bare root plants with a moist tarp, burlap, sphagnum moss, or mulch while being transported to, or while being held at the project site. Soak the bare roots overnight in water before planting. Just before planting, extend the roots carefully into a natural position, free of bunching, kinking or circling. Cut back all broken or damaged roots to a point clean and free of rot. No additional root pruning is allowed. Carefully work backfill mix among the roots while simultaneously watering.

H. Fertilizer shall be delivered to the site in original, sealed containers, and stored in a waterproof space. Containers shall bear the manufacturer's name, analysis, trademark and guarantee as per standards of the Wisconsin Department of Agriculture.

1.10 PLANTING SCHEDULE

A. Planting of perennials shall be completed by June 30th for spring planting and between September 1 and October 30th for fall planting.

1.11 JOB CONDITIONS

A. Protect all plants, lawns, and grass areas from damage at all times. Damaged plants, lawns or grass areas shall be replaced or treated as required to conform with specifications herein for fresh stock.

B. Work areas shall be kept clean and orderly during the installation period. Under no condition shall debris from planting activities result in a safety hazard on-site or to adjacent off-site property.

C. Damage to lawns or grass areas incurred as a result of replacement operations shall be repaired by Contractor at no cost to Owner.

1.12 WARRANTY

A. All plants shall be warranted to be in healthy and flourishing condition by June 30 after the end of one full growing season. The warranty shall not cover damage from vandalism, animals, freezing rains, or winds of sixty (60) miles per hour or greater, if the Contractor burlaps or otherwise protects any plants that he/she feels could be damaged during the warranty period.

B. At any time during the warranty period, the Contractor shall remove or replace, without cost to the Owner, and within a specified planting period, all plants not in a healthy and flourishing condition as determined by the Owner or Architect/Engineer.

C. Replacement plants shall be subject to the same specified requirements of the contract. The warranty of replacement plants shall extend until June 30 after the end of one full growing season. In the event that a replacement plant is not acceptable during, or at the end, of the said warranty extension period, Owner may choose between subsequent replacement or credit for that item.

D. Include the following remedial actions as a minimum:
   1. Immediately remove dead plants and replace unless required to plant in the succeeding planting season.

2. Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

3. A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.

4. Provide extended warranty for period equal to original warranty period, for replaced plant material.

PART 2 PRODUCTS

2.1 MATERIALS

A. Plant Materials: A complete list of plant materials, including a schedule of quantities, sizes, quality and source location, shall be included in the contract documents. If discrepancies occur between the printed plant list, and the drawings, the printed list will take precedent.

B. Owner may request a written list of the proposed sources of nursery stock at the preconstruction meeting. This list may not be added to or otherwise altered without the consent of Owner.

C. Topsoil: Naturally fertile, agricultural soil, capable of sustaining vigorous growth, of uniform composition throughout, without admixtures of subsoil, free of clay, stones larger than 1" inch diameter, roots, trash and debris of any kind, supplied by Contractor at his/her expense, and subject to approval by the Owner or Architect/Engineer.

D. Organic Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through **3/4-inch** sieve; soluble salt content of **5 to 10** decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings. Organic Matter Content: **50 to 60** percent of dry weight.

E. Planting Mixture: Material used in tamping around balls and roots during the planting operation shall be prepared on site.

1. Ratio of Loose Compost to Topsoil by Volume: **1:4** parts native topsoil from project site to organic compost. Conform to alternate mixes as specified for beds of certain ornamental plants. All mixing shall be done by mechanical means subject to the approval of the Project Representative or Landscape Architect.

F. Fertilizer: Granular, non-burning product composed of not less than fifty (50) percent organic slow-acting, guaranteed analysis professional fertilizer. Commercial fertilizer shall conform to Wisconsin State Statutes, Section 94.64, and meet the standards of the Wisconsin Department of Agriculture as to registration and labeling. Fertilizer shall be specified in the contract documents as to composition, but is subject to revision to suit project site conditions.

G. Mineral Mulch: R**iver Stone Gravel** ranging in size from **1"- 1 ½"** in diameter, clean and free of organic matter. Color: [ ] Provide sample to Owner or Architect/Engineer for approval.

H. Weed Control Fabric: Spun-bonded, rot-resistant polypropylene fabric, water and air permeable, and unaffected by freezing and thawing, or by deterioration from fertilizers or pesticides.

I. Landscape Edging:

1. Aluminum Edging: Standard-profile extruded-aluminum edging, ASTM B 221 (ASTM B 221M), Alloy 6063-T6, fabricated in standard lengths with interlocking sections with loops stamped from face of sections to receive stakes].

2. Edging Size: **1/4 inch wide by 5 inches deep.**

J. Mycorrhizal Fungi: Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, with a maximum of 5.5 percent inert material

PART 3 EXECUTION

3.1 PREPARATION

A. Receive Owner or Architect/Engineer approval of staking layout prior to excavation.

B. Stake all planting areas and notify Digger's Hotline (1-800-242-8511 statewide) to verify location of all underground utilities prior to excavation.

C. Excavate planting areas as shown in the contract drawings.

D. Notify the Owner in writing of any soil conditions, obstructions, or concerns about water drainage deemed detrimental to healthy plant growth. These conditions or obstructions shall be detailed, along with any suggestions for correction, removal or relocation. Where soil conditions, poor drainage or other obstructions are encountered that cannot be easily remedied, the Owner will designate alternate locations, and will bear the additional costs of such relocation.

E. The planting pit for containerized plants shall be at least 2.5 times the diameter of the soil ball, or to a dimension otherwise specified.

F. Loosen the soil beyond the edge of the planting pit. The soil at the base of the planting pit is to remain undisturbed, the depth of which shall correspond to the distance from the bottom of the soil ball to the root flare, or slightly less.

G. Planting pits for bare root plants shall be only broad enough to receive the full extension of the roots when the plant is set, and only deep enough to set the uppermost roots just below existing grade.

H. Application of Mycorrhizal Fungi: At time directed by Architect/Engineer, broadcast dry product uniformly over prepared soil at application rate recommended by manufacturer.

3.2 PLANTING OF PERENNIALS IN BIOSWALE

A. Perennials should be planted after the native seeding is completed and erosion mat applied. Perennials to be planted through the erosion mat.

B. Loosen soil of the planting area to a depth of **6"** by hand tilling while soil is dry.

C. After soil is loosened, till organic compost into the soil across the planting bed to a uniform depth of **2"** for compost.

D. Space as described in the landscape plan.

E. Unless otherwise specified, install plants no closer than 12" to the trunks of trees or shrubs.

F. Prior to planting, biodegradable plant containers shall be split and non-biodegradable containers removed. The root systems of all such plants shall be split or crumbled by hand.

3.2 MAINTENANCE BORDER

A. When applying mineral mulch lay weed control fabric over grade prior to mulching as per manufacturer's recommendations. Secure to slopes with "T"-shaped pin anchors.

B. Apply approved mulch uniformly across the entire planting bed to a depth of **2"-3"**.

C. Install edging where indicated according to manufacturer's written instructions. Anchor with stakes spaced approximately **36 inches** apart, driven below top elevation of edging.

D. Separate mulched areas from turf areas with a 45-degree, 4- to 6-inch- deep, shovel-cut edge.

3.3 INSPECTION AND ACCEPTANCE

A. Owner and the Agency Contact responsible for maintenance following acceptance shall perform inspections with the Contractor of all plant material at one (1) week and three (3) week intervals (or other specified interval) after the original planting to note and correct any discrepancies from the contract. Plants that are alive and healthy following the three (3) week (or other time frame specified) inspection shall be accepted.

B. Acceptance of plant material by Owner shall reflect general conformity with the *American Standards for Nursery* Stock as to specified size, character and quality. Acceptance shall not relieve the Contractor of responsibility for full conformity to the contract documents and the guarantee period. Any defects or imperfections appearing in whole or any part of the work caused by or due to any fault or negligence on the part of the Contractor shall be corrected before the work is accepted.

C. Planting work may be accepted in stages when the Contractor and Owner deem that practice to be in their mutual interest. Approval must be given in writing by Owner to the Contractor verifying that work may be completed in stages. Acceptance of planting work in stages shall not waive any other provisions of the contract.

3.4 CLEANING

A. Soil, branches, binding and wrapping material, rejected plants, or other debris resulting from plant installation shall be promptly cleaned up and removed. New landscape construction in and around the planting areas are to be especially well-cleaned.

3.5 MAINTENANCE

A. Any and all chemical applications of fertilizer are to be performed in accordance with current federal, state and local laws, through EPA-registered materials and application techniques, and performed under the supervision of a licensed certified applicator. Apply fertilizer to planted areas at the specified rate, and as per manufacturer's recommendations.
All plant materials installed under the contract shall be watered within the first 24 hours of initial planting and not less than twice weekly until final acceptance by Owner.

B. Water used shall be of sufficient quality for irrigation and free of materials harmful to plant growth.

C. Any use of pesticides during the contracted maintenance period, as determined by the Owner, shall utilize the minimum amount of approved pesticide needed to control pests on plant materials installed under the contract. Pesticide applications are to be performed in accordance with current federal, state and local laws, through EPA-registered materials and application techniques, and performed under the supervision of a licensed certified applicator. Apply at the specified rate, and as per manufacturer's recommendations.

END OF SECTION