



RFB NO. 321011

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. 321011 HUMAN SERVICES PARKING LOT RECONSTRUCTION NORTHPORT OFFICE 1202 NORTHPORT DRIVE MADISON , WISCONSIN

Due Date / Time: **TUESDAY, JUNE 22, 2021 / 2:00 P.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:

STEVE RICHARDS, PROJECT MANAGER
TELEPHONE NO.: 608/516-8367
FAX NO.: 608/267-1533
E-MAIL: RICHARDS.STEVE@COUNTYOFDANE.COM

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END OF SECTION

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INVITATION TO BID

LEGAL NOTICE

Dane County Dept. of Public Works, Hwy & Transp., Waste & Renewables, 1919 Alliant Energy Center Way, Madison, WI 53713, will receive sealed Bids until:

2:00 P.M., TUESDAY, JUNE 22, 2021

RFB NO. 321011

HUMAN SERVICES PARKING LOT RECONSTRUCTION

NORTHPORT OFFICE

1202 NORTHPORT DRIVE, MADISON, WI

Dane County is inviting Bids for construction services for the reconstruction of the parking lot at the Northport Office. Project consist of stripping existing pavement, grading, repaving, and striping. Only firms with capabilities, experience & expertise with similar projects should obtain this Request for Bids (RFB) document & submit Bids.

RFB document may be obtained by downloading it from bids-pwht.countyofdane.com. Please call Steve Richards, Project Mgr., at 608/516-8367, or our office at 608/266-4018, for any questions or additional information.

All Bidders must be qualified as a Best Value Contractor before Bid Due Date / Time. Complete Pre-qualification Application for Contractors at publicworks.countyofdane.com/bvc or obtain one by calling 608/267-0119.

A pre-bid site tour will be held Tuesday, June 15, 2021 at 1:00 p.m. at Northport Office, 1202 Northport Dr., Madison. Attendees shall meet in the parking lot on the north side of the facility near the loading dock. Bidders are strongly encouraged to attend this tour. See RFB for mandatory disease transmission prevention practices.

PUBLISH: JUNE 1, 2021 & JUNE 8, 2021 - WISCONSIN STATE JOURNAL

JUNE 2, 2021 & JUNE 9, 2021 - THE DAILY REPORTER

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INSTRUCTIONS TO BIDDERS

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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 Tuesday, 2021 at 1:00 p.m. at Northport Office, 1202 Northport Drive, Madison. Attendees shall meet on the north side of the facility by the loading dock. Attendance by all bidders is optional, however bidders and subcontractors are strongly encouraged to attend.
- D. Visits at other times may also be arranged. Coordinate site access activities with Public Works Project Manager, Steve Richards, 608/516-8367.
- E. 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 Contract, are enumerated in Document Index of these Construction Documents.
- B. Complete sets of Drawings and Specifications for all trades will be available 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 five (5) calendar 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 Consultant 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. Contractor and subcontractors shall meet all applicable Best Value Contractor requirements.
- B. County's Public Works Project Manager 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 Manager or designee all such information and data for this purpose as County's Public Works Project Manager 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) business 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) business 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) calendar 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 section, 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 Specialist within ten (10) business days of 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 ten (10) business days 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 may solicit bids from *Dane County Targeted Business Directory* by going to this website. Do not click as a link; copy & paste address into a web browser.
<https://equity.countyofdane.com/documents/PDFs/Targeted-Business-Directory.xlsx>
- G. **DBE Listing.** Bidders may also solicit bids from *State of Wisconsin DOT Disadvantaged Business Enterprise Unified Certification Program (DBE / UCP) Directory* by going to this website. These are not only transportation-related designers & contractors. Do not click as a link; copy & paste address into a web browser.
<https://wisconsindot.gov/Documents/doing-bus/civil-rights/dbe/dbe-ucp-directory.xlsx>
- H. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Report to Dane County Contract Compliance Program.
- I. **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.

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

OEI@countyofdane.com

or

Dane County Contract Compliance Specialist
City-County Building, Room 356
210 Martin Luther King, Jr. Blvd.
Madison, WI 53703
608/266-4192

K. **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 Specialist 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.

L. **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) business 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 Specialist within twenty-four (24) hours after Bid Due Date.

M. **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. Refer to Section 01 10 00 – Summary for additional information.

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 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. Wisconsin Statute 77.54 (9m) allows building materials that become part of local unit government facilities to be exempt from sales & use tax. Vendors & materials suppliers may not charge Bidders sales & use tax on these purchases. This does not include highways, streets or roads. Any other Sales, Consumer, Use & other similar taxes or fees required by law shall be included in Bid.
- 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 the 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. Use the "Public Works Bids & Proposals" drop box if you choose to hand deliver. Bids received after time of closing will be rejected and returned to bidder unopened.
- H. Current public health conditions prevent public bid openings.
- I. Bids dropped off at Public Works' physical address should be placed in the "Public Works Bids & Proposals" drop box placed outside or just inside the building's front vestibule.
- J. Bid will be opened on listed due date & time & results should be available within 24 hours at bids-pwht.countyofdane.com.
- K. Bid will be considered invalid and will be rejected if bidder has not signed it.
- L. Faxed or emailed Bids will not be accepted.
- M. Bidder's organization shall submit completed with Bid, Fair Labor Practices Certification form, included in these Construction Documents.

14. SUBCONTRACTOR LISTING

- A. Bidders are required to submit Section 00 43 36, Proposed Subcontractors Form listing all subcontractors for this project including committed prices for each subcontractor. Project Manager must receive Form no later than when successful Bidder submits their signed Contract. Failure to submit may delay progress payments.

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. Not applicable.

17. UNIT PRICES

- A. Provide unit prices where requested on Bid Form. Unit prices will include all costs for materials, labor, insurance, taxes, overhead and profit necessary to perform specified work. Estimated quantities are approximate only. Payment will be based upon actual quantities placed, provided or installed. Failure to provide requested unit prices may result in rejection of entire Bid.
- B. Owner reserves right to accept or reject any unit prices as given in Bid.
- C. Bidder shall refer to Bid Form and applicable specification section to determine basis of unit measure and detailed information related to each unit price item requested.

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. Not Applicable.

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 ten (10) days after Bid Due Date.

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

BIDDER INFORMATION

COMPANY NAME: _____

ADDRESS: _____

TELEPHONE NO.: _____

CONTACT PERSON: _____

EMAIL ADDRESS: _____

FORM B

Page ___ of ___

DANE COUNTY

(Copy this Form as necessary to provide complete information)

EMERGING SMALL BUSINESS REPORT - INVOLVEMENT

COMPANY NAME: _____

PROJECT NAME: _____

BID NO.: _____ BID DUE DATE: _____

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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

ESB NAME: _____

CONTACT PERSON: _____

ADDRESS: _____

PHONE NO & EMAIL.: _____

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.: _____ BID DUE DATE: _____

	<u>ESB FIRM NAME CONTACTED</u>	<u>DATE</u>	<u>PERSON CONTACTED</u>	<u>DID ESB BID?</u>	<u>ACC- EPT BID?</u>	<u>REASON FOR REJECTION</u>
1)	_____	_____	_____	_____	_____	_____
2)	_____	_____	_____	_____	_____	_____
3)	_____	_____	_____	_____	_____	_____
4)	_____	_____	_____	_____	_____	_____
5)	_____	_____	_____	_____	_____	_____
6)	_____	_____	_____	_____	_____	_____
7)	_____	_____	_____	_____	_____	_____
8)	_____	_____	_____	_____	_____	_____

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

SECTION 00 31 32

GEOTECHNICAL DATA

SUBSURFACE DRILLING AND SAMPLING INFORMATION

INVESTIGATION DATA

Subsurface investigations have been made and soil boring report by CGC, Inc. (36 pages) are included following this page. This information was obtained for use in preparing the design; however, Bidders shall draw their own conclusions therefrom. No responsibility for subsoil quality or conditions are assumed by Architect / Engineer or Owner.



Construction • Geotechnical
Consulting Engineering/Testing

March 19, 2021
C21093

Mr. Steve Richards
Dane County Department of Public Works, Highway & Transportation
1919 Alliant Energy Center Way
Madison, WI 53713

Re: Geotechnical Exploration Report
Proposed Pavement Rehabilitation
Dane County Human Services – Northport Rd. Office
Madison, Wisconsin

Dear Mr. Richards:

Construction • Geotechnical Consultants, Inc. (CGC) has completed the subsurface exploration program for the above-referenced project. The purpose of this program was to evaluate the subsurface conditions within existing pavement areas and to provide geotechnical recommendations regarding pavement design/reconstruction. We are sending you an electronic copy of this report, and we can provide a paper copy upon request.

SITE AND PROJECT DESCRIPTION

We understand that the existing asphalt access drive and parking areas at the Dane County Human Services campus located at 1202 Northport Drive in Madison, Wisconsin are planned to be rehabilitated to the extent feasible within the project budget, which is anticipated to consist of a combination of milling/overlaying and/or complete reconstruction (dependent upon the existing conditions encountered). The proposed rehabilitation area consists of the entrance drive off of Northport Drive extending north/northeast up the hill past the main building and ending at the existing maintenance building. Finished site grades are anticipated to remain at or near existing grades. Additionally, existing curb and gutter, where present, will remain in-place, with only isolated portions planned to be replaced.

In general, the majority of the existing asphalt pavement was in poor to very poor condition, with isolated areas considered to be in fair condition. Widespread areas of extensive alligator, longitudinal and transverse cracking were observed, as well as isolated sections of rutting, birdbaths and/or potholes. Limited evidence of pavement maintenance, in the form of crack sealing, was observed. The age of the pavement was not known; however, as indicated by Dane County personnel, the pavement is estimated to be over 20 years old.

The Human Services Building is generally situated along the south side of Lake View Hill, with site grades generally sloping downward toward Northport Drive to the south. As an exception, pavement grades within the portion of the parking lot near the main building are fairly flat, as it appears that the parking lot was cut into the hillside. Existing site grades at the boring locations ranged between about EL 989 and 914 ft.

Mr. Steve Richards
Dane County Department of Public Works, Highway & Transportation
March 19, 2021
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SUBSURFACE CONDITIONS

Subsurface conditions on site were explored by drilling 17 Standard Penetration Test (SPT) soil borings to a depth of about 2.5 ft below existing pavement grades at locations selected and located in the field by CGC. The borings were drilled on March 11, 2021 by Badger State Drilling (under subcontract to CGC) using a truck-mounted CME-55 rotary drill rig equipped with hollow-stem augers and an automatic SPT hammer. The boring locations are shown in plan on the Boring Location Exhibit attached in Appendix A. Ground surface elevations at the boring locations were estimated by CGC using a publicly available online topographic site map (Dane County DCi Map, 1-ft contours) and should therefore be considered approximate ($1\pm$ ft).

The pavement, base course and subgrade conditions encountered in the borings varied to some degree, but generally consisted of the following (in descending order):

- About 2 to 5 in. of **asphalt pavement** (with 2 to 3 in. being more typical); over
- About 3 to 8 in. of **base course** (with 5 to 7 in. being more typical), partially intermixed with or underlain by
- Medium stiff to very stiff **lean clay, silt** or medium dense to very dense **sand** or **gravelly clay**, extending to the maximum depths explored. Note that the **gravelly clay** soils have been characterized as *possible weathered bedrock*, based on their appearance and relative density.

It is important to note that concrete pavement was encountered between the surficial asphalt and base course layers at Borings 13 and 14, and measured about 4 and 6 in. in thickness, respectively. Additionally, apparent frost was present within the subgrade soils at Boring 13. Further, the subgrade materials encountered appeared to primarily be natural in appearance; however, at Borings 4 and 8, existing clay and sand *fill* materials, respectively, appear to be present below the existing pavement section.

Natural moisture contents of clay samples ranged between 18.4% and 28%, indicating a moist to very moist conditions. The silt subgrade materials encountered in Boring 9 yielded a moisture content of 15.4%. Calibrated hand penetrometer readings (an estimate of unconfined compressive strength within cohesive soils) obtained within clay subgrade samples ranged between 0.5 to 3.0 tsf (with 0.5 to 1.5 tsf being more typical).

Groundwater was not encountered in the borings during or shortly after drilling. Although groundwater levels can be expected to fluctuate with seasonal variations in precipitation, infiltration, evapotranspiration, and other factors, we expect that groundwater will remain below excavation depths for this project. However, zones of perched or trapped water may be encountered within portions of the existing base course that are underlain by bedrock. A more detailed description of the site soil and groundwater conditions is presented on the Soil Boring Logs attached in Appendix B.

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DISCUSSION AND RECOMMENDATIONS

Subject to the limitations discussed below, it is our opinion that *complete reconstruction*¹ of the existing pavement area should be considered based on the relatively thin existing pavement section thicknesses and subgrade conditions encountered in the borings performed. The existing pavement section encountered in the borings was typically comprised of about 2 to 5 in. of asphalt over 3 to 8 in. of base course (average asphalt and base course thicknesses of 3 in. and 5.9 in., respectively). Based on the subgrade conditions encountered, in conjunction with the anticipate vehicle traffic, the majority of the existing pavement section thicknesses encountered are less than the typically recommended pavement section following the latest Wisconsin Asphalt Pavement Association (WAPA) Asphalt Pavement Design Guide recommendations, which is discussed further in subsequent sections of this report.

Recognizing that complete reconstruction of the existing pavement section over the entire project area may be cost prohibitive, rehabilitation of portions of the project area via *milling and overlaying*² (MAO), or *full depth reclamation*³ (FDR), where possible, will likely be considered. However, each of the alternative rehabilitation options have their limitations. Although MAO is typically less costly than FDR, MAO does not provide an opportunity to view and/or address underlying issues that may be present, such as inadequate base course thickness or subgrade instability/failure. Additionally, with the MAO approach, the remaining pavement may deteriorate further under construction traffic associated with the resurfacing operation (i.e., paver, loaded dump trucks, etc.). The potential for reflective cracking is also typically a concern with the MAO approach, given the full depth cracking that is likely to be present. Conversely, FDR would eliminate the reflective cracking concern associated with MAO, as well as provide a desirable thicker base layer (although not necessarily equal to the recommended thickness for complete reconstruction) for support of a new pavement surface. However, raising of pavement grades will result from FDR, which will need to be accommodated, potentially by replacement of curb and gutter or revising finished pavement grades.

Regardless of the reconstruction alternative considered, we expect that soft/unstable areas will be encountered (and/or may develop during construction) that will need to be undercut/removed to develop a suitable subgrade for subsequent pavement support, based on the subgrade conditions encountered in the borings. *Therefore, we recommend that the project budget include a generous contingency for subgrade improvement, which may become widespread on this project.*

¹ **Complete reconstruction** consists of the removal of the existing asphalt and base course layers, followed by cutting of the underlying subgrade materials to a predetermined depth to allow for placement of the specified new base course and asphalt pavement section.

² **Milling and overlaying** consists of a milling machine grinding down the top course of existing asphalt to a desired depth, and the resulting ground asphalt (millings) loaded into dump trucks via conveyor to then be hauled off-site for recycling. A new layer of asphalt is then paved to the thickness that was removed (or potentially greater).

³ **Full depth reclamation** is a 'green' practice that consists of the uniform pulverization and blending of the full depth of asphalt and a predetermined portion of the underlying base course materials to produce a stabilized base on which to pave.

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Our recommendations for pavement design/reconstruction are presented in the following subsections. Additional information regarding the conclusions and recommendations presented in this report is discussed in Appendix B.

1. Overview of Pavement and Subgrade Conditions

As previously discussed, the average asphalt and base course thicknesses encountered at the boring locations were 3 in. and 5.9 in., respectively. The surface of the existing pavement was observed to contain extensive cracking, as well as other signs of significant distress, with little evidence of pavement maintenance observed. In our opinion, the existing pavement appears to have exceeded its serviceable design life.

The pavement subgrade soils encountered in the borings consisted of lean clay, silt, sand and/or clayey gravel (characterized as possible weathered bedrock). Unconfined compressive strengths within the clay subgrade samples were typically 1.5 tsf or less, and moisture contents were typically fairly high (20% or more). In our experience, clay soils exhibiting unconfined compressive strengths of less than about 1.5 tsf and/or moisture contents of 20% or more are considered marginal for pavement support. Therefore, *we expect that soft/unstable areas will be encountered (or may develop during construction) that will need to be undercut/removed to develop a suitable and stable subgrade. We therefore recommend that the project budget include a generous contingency for subgrade improvement.*

The subgrade materials encountered are primarily comprised of clayey soils, which are sensitive to moisture, freeze/thaw, and resulting instability. The detrimental effects of frost action on the prevalent clayey subgrade materials have likely been manifested by non-uniform heave of pavements during winter months and/or the loss of strength of the subgrade during thawing periods. It is important to also note that the extensive pavement cracking observed has provided a conduit for surface water to migrate into the base course and subgrade materials through the years, likely leading to base course contamination and/or subgrade softening.

2. Pavement Rehabilitation

Complete Reconstruction

Based on the field observations and the subsurface conditions encountered in the borings, it is our opinion that complete reconstruction of the existing pavement should be considered over the project area. For complete reconstruction, we recommend that the existing pavement section (i.e. asphalt and base course layers) be removed in its entirety. After pavement section removal and cutting to

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the design subgrade elevation in order to provide the recommended pavement section (discussed herein), the exposed subgrade is anticipated to be comprised of lean clay, silt and sand. Granular (sand) subgrades should be thoroughly recompacted with a vibratory smooth-drum roller, while silt and/or clay subgrades should be statically compacted (without vibration). Following compaction, the exposed subgrade should be proof-rolled with a loaded tri-axle dump truck to delineate any soft/yielding areas. Note that proof-rolling should not be performed within 48 hours of a rainfall exceeding $\frac{1}{4}$ -in.

Consideration could be given to initially removing only the existing asphalt, followed by thorough compaction of the exposed base course materials and then evaluating the stability of the base course materials via proof-roll in order to delineate any soft, unstable or yielding areas. Under this alternative, a new pavement layer could be re-paved in-kind, which would likely result in pavement thicknesses less than that recommended later in this section (refer to Table 1). In order to provide the recommended asphalt thickness, alterations to site grades would be required to accommodate the increased thickness without removing portions of the existing base course (which is not recommended).

As previously cautioned, we expect that some soft/unstable areas will be encountered during complete reconstruction that will need to be undercut/removed to develop a suitable subgrade. Where soft, loose and/or yielding areas are encountered, these soils should be selectively undercut (e.g., excavation below subgrade, EBS) and replaced with coarse aggregate (e.g., 3-in. dense graded base (DGB) or select crushed material (SCM), WisDOT *Standard Specification for Highway and Structure Construction*, Sections 305 and 312, respectively). The thickness of the undercut/stabilization layer should be determined in the field during proof-rolling; however, *for budgetary purposes, we suggest including an allowance for 12 in. of coarse aggregate in addition to the design base course section within about 40 to 50% of the project area.* It should be noted that the percentage of estimated areas requiring undercutting/stabilization should be considered approximate, and a unit rate for additional (or reduced) undercutting/stabilization should be included in the project documents. If long, continuous sections of soft/yielding soils are encountered, a geogrid (e.g., Tensar Type 1 or 2 (BX 1100 or 1200) or equivalents) could be considered to provide additional reinforcement, and potentially reduce the thickness of the aggregate stabilization layer.

The need for undercutting/stabilization will likely depend on the weather conditions during construction, as the anticipated subgrade soils will be susceptible to disturbance/weakening from precipitation and construction traffic. If construction occurs during fairly wet weather without adequate time to dry, undercutting/stabilization could be more widespread. Conversely, if warm/dry conditions prevail during construction, less undercutting/ stabilization may be necessary.

In order to maintain a relatively dry subgrade condition and reduce the potential for frost action, it is important to control surface water runoff and water seepage. Adequate slope should be provided within and around the pavement areas to minimize surface ponding and to divert surface water away from the pavement subgrade. Regular maintenance, including crack sealing, must also be performed.

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We anticipate that the asphalt pavement within the project area will be primarily exposed to light passenger vehicle traffic. In view of this, we have assumed Traffic Class I following WAPA Asphalt Pavement Design Guide recommendations for completely reconstructed pavement areas that are mainly used by light passenger vehicles. The pavement section summarized in Table 1 below was selected assuming a Soil Support Value “SSV” of about 4.0 for a firm or adequately stabilized cohesive subgrade and a design life of 20 years. It is worth noting that the recommended pavement section in Table 1 is thicker than the existing pavement section encountered at each of the boring locations.

TABLE 1 – Recommended Pavement Section

Material	Thicknesses (in.)	WDOT Specification ¹
	Traffic Class I (Light Duty)	
Bituminous Upper Layer ^{2,3}	1.75	Section 460, Table 460-1
Bituminous Lower Layer ^{2,3}	1.75	Section 460, Table 460-1
Dense Graded Base Course ^{2,4}	10.0	Sections 301 and 305, 3 in. and 1-¼ in.
Total Thickness	13.5	

Notes:

- 1) Wisconsin DOT *Standard Specifications for Highway and Structure Construction*, latest edition, including supplemental specifications, and Wisconsin Asphalt Pavement Association *2020 Asphalt Pavement Design Guide*.
- 2) Compaction requirements:
 - Bituminous concrete: Refer to Section 460-3.
 - Base course: Refer to Section 301.3.4.2, Standard Compaction
- 3) Mixture Type LT bituminous; refer to Section 460, Table 460-2 of the *Standard Specifications*. Mixture type MT is recommended in heavy duty traffic areas.
- 4) The upper 4 in. should consist of 1¼-in. DGB; the bottom part of the layer can consist of 3-in. DGB.

The recommended pavement sections assume regular maintenance (crack sealing, etc.) will occur, as needed. Note that if traffic volumes are greater than those assumed, CGC should be allowed to review the recommended pavement sections and adjust them accordingly. Alternative pavement

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designs may prove acceptable and should be reviewed by CGC. If there is a delay between subgrade preparation and placing the base course, the subgrade should be recompact.

Mill/Overlay (MAO) or Full Depth Reclamation (FDR)

For preliminary estimating purposes, based on the boring information, MAO and/or FDR of the existing pavement area from about Borings 10 and 11 extending eastward could be considered, recognizing the concerns and limitations associated with each alternative. We must reiterate that the fairly thin section of asphalt anticipated to remain in-place following milling operations, in conjunction with the relatively thin base course section and marginal subgrade conditions encountered in several of the borings, may deteriorate further under construction traffic associated with the resurfacing operation (i.e., paver, loaded dump trucks, etc.). Additionally, reflective cracking would also be a concern with the MAO approach.

FDR of the existing asphalt would eliminate the reflective cracking concern associated with MAO, as well as provide a desirable thicker base layer for support of a new asphalt section (which should be at least the recommended thickness provided in Table 1 of this report), *provided that raising of pavement grades can be accommodated*. Pulverization of the existing pavement should be performed with suitable equipment and to a depth that extends through the existing HMA surface and into the existing base course, but not into the underlying subgrade soils. This will likely require adjustment of the pulverizing depth and should be monitored to prevent intermixing the silty and clayey subgrades into the recycled base material. Note that the extents of the concrete pavement encountered below the surficial asphalt in Borings 13 and 14 have not necessarily been defined by the borings performed. If as-built information defining the extents of the concrete pavement are not available, we recommend further exploration be performed, as FDR in areas of existing concrete will not be feasible. Concrete pavement will require removal with an excavator or similar equipment.

After pulverization of the existing pavement, the exposed recycled base materials should be prepared as outlines in Section 211 of WisDOT Standard Specifications. Due to the pulverization and inherent low moisture content of the existing asphalt, the recycled base material must be properly moisture conditioned to within about $3\pm$ percent of optimum. This will likely require the addition of water. The recycled base should then be compacted with a large vibratory smooth drum or sheepsfoot roller until deflection ceases to occur.

With either alternative (i.e. MAO or FDR), it must be recognized that isolated undercutting of areas of instability that develop as a result of construction traffic may be necessary. Undercutting should be performed in a similar fashion to that discussed previously in the Complete Reconstruction section. To reduce the potential for further cracking of the remaining pavement during and following milling operations, or on prepared bases prior to paving, consideration should be given to limiting dump truck loading to about half the normal capacity. Additionally, construction traffic on milled and/or prepared areas should be limited.

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CONSTRUCTION CONSIDERATIONS

Due to variations in weather, construction methods and other factors, specific construction problems are difficult to predict. Soil related difficulties which could be encountered on the site are discussed below:

- Contingencies in the project budget for subgrade stabilization with coarse aggregate should be increased if the project schedule requires that work proceed during adverse weather conditions.
- Pavement reconstruction during the late fall through early spring could be complicated as a result of wet weather and freezing temperatures. During cold weather, exposed subgrades should be protected from freezing before and after footing construction. Fill should never be placed while frozen or on frozen ground.
- Excavations extending greater than 4 ft in depth below the existing ground surface should be sloped or braced in accordance with current OSHA standards.

RECOMMENDED CONSTRUCTION MONITORING

The quality of the pavement subgrades will be largely determined by the level of care exercised during site development. To check that earthwork construction proceeds in accordance with our recommendations, the following operations should be monitored by CGC:

- Subgrade proof-rolling/compaction; and
- Fill/backfill placement and compaction; and
- Asphalt paving



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Dane County Department of Public Works, Highway & Transportation
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* * * * *

It has been a pleasure to serve you on this project. If you have any questions or need additional consultation, please contact us.

Sincerely,

CGC, Inc.

Ryan J. Portman, P.E., CST
Consulting Professional

Alex J. Bina, PE, CST
Project Engineer

- Encl: Appendix A - Boring Location Exhibit
 - Logs of Test Borings (17)
 - Log of Test Boring-General Notes
 - Unified Soil Classification System
- Appendix B - Document Qualifications
- Appendix C - Recommended Compacted Fill Specifications

APPENDIX A

**BORING LOCATION EXHIBIT
LOGS OF TEST BORINGS (17)
LOG OF TEST BORING-GENERAL NOTES
UNIFIED SOIL CLASSIFICATION SYSTEM**



⊕ APPROXIMATE PAVEMENT BORING LOCATION

0 125 250 500 Feet

Notes

1. Soil borings were performed by Badger State Drilling (under subcontract to CGC) on March 11, 2021.
2. Depicted boring locations are approximate.
3. Base map was obtained via DCiMap (2020 Aerial).

Date:
3/2021

Job No.
C21093

CGC, Inc.

BORING LOCATION EXHIBIT
Dane Co. Human Services –
Pavement Reconstruction
1202 Northport Dr., Madison, WI



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-1**
 Surface Elevation (ft) 914.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/5± in. Base Course					
					Medium Stiff, Brown Lean CLAY, Trace to Little Sand (CL - Possible Fill)					
1		18	M	5		(0.75-1.0)	28.0			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-2**
 Surface Elevation (ft) 923.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/6± in. Base Course					
1		18	M/W	7	Medium Stiff, Gray to Brown Lean CLAY, Trace to Little Sand (CL) Note: Subgrade Contamination of Base Course Section Appears to have Occurred (i.e. Gravel Present within Upper Portion of Sample 1).	(0.5-0.75)	26.0			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-3**
 Surface Elevation (ft) 934.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					2± in. Asphalt Pavement/5± in. Base Course					
					Medium Stiff, Brown Lean CLAY, Some Sand and Gravel (CL)					
1		14	M	9	Note: Subgrade Contamination of Base Course Section Appears to have Occurred (i.e. Gravel Present within Upper Portion of Sample 1).	(0.5-1.0)	20.1			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-4**
 Surface Elevation (ft) 945.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					2± in. Asphalt Pavement/5± in. Base Course					
					FILL: Medium Stiff, Dark Brown/Brown Sandy Lean Clay, Intermixed Gravel and Sand Lenses					
1		18	M	9		(0.75)	22.7			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-5**
 Surface Elevation (ft) 955.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					2± in. Asphalt Pavement/6± in. Base Course					
					Medium Stiff to Stiff, Brown Lean CLAY, Some Sand, Trace Gravel (CL)					
1		18	M	8		(1.0-1.5)	18.4			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-6**
 Surface Elevation (ft) 968.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					4± in. Asphalt Pavement/7± in. Base Course					
1	█	18	M	10	Very Stiff, Brown Lean CLAY, Trace to Little Sand (CL)	(2.0-3.0)	19.0			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-7**
 Surface Elevation (ft) 979.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/5± in. Base Course					
					Stiff, Brown Lean CLAY, Some Sand, Trace Gravel (CL)					
1		18	M	7		(1.0-1.5)	20.4			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-8**
 Surface Elevation (ft) 983.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					2± in. Asphalt Pavement/8± in. Base Course					
1		3	M	13	FILL: Medium Dense, Dark Brown Fine to Coarse Sand, Some Silt and Gravel (Poor Sample Recovery)					
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-9**
 Surface Elevation (ft) 986.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/5± in. Base Course					
					Very Stiff, Brown Clayey SILT, Trace Sand (ML/CL-ML)					
1		6	M	7		(3.0)	15.4			
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-10**
 Surface Elevation (ft) 987.0
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/8± in. Base Course					
1	█	18	M	22	Medium Dense, Brown to Tan Clayey GRAVEL, Some Sand (GC - Possible Weathered Bedrock)					
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-11**
 Surface Elevation (ft) 989.0
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					5± in. Asphalt Pavement/6± in. Base Course					
1	█	10	M		50/5"	Very Dense, Brown to Tan Clayey GRAVEL, Some Sand (GC - Possible Weathered Bedrock)				
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-12**
 Surface Elevation (ft) 987.0
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/6± in. Base Course					
1		18	M/W	25	Medium Dense, Brown to Tan Clayey GRAVEL, Some Sand (GC - Possible Weathered Bedrock)					
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. B-13
 Surface Elevation (ft) 987.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					4± in. Asphalt Pavement/4± in. Concrete/3± in. Base Course					
1		18	M	34	Dense, Tan Fine SAND, Some Silt and Gravel (SM) (Frost Present Within Sample; N-Value Likely Elevated as a Result)					
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS

While Drilling NW Upon Completion of Drilling NW
 Time After Drilling _____
 Depth to Water _____
 Depth to Cave in _____

GENERAL NOTES

Start 3/11/21 End 3/11/21
 Driller BSD Chief MC Rig CME-55
 Logger DB/GB Editor RJP
 Drill Method 2.25" HSA; Autohammer

The stratification lines represent the approximate boundary between soil types and the transition may be gradual.



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-14**
 Surface Elevation (ft) 987.0
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/6± in. Concrete/3± in. Base Course					
1		2	-		50/4"	Very Dense, Brown to Tan Clayey GRAVEL, Some Sand (GC - Possible Weathered Bedrock)		23.3		
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-15**
 Surface Elevation (ft) 986.5
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/7± in. Base Course					
1		8	W		50/4"	Very Dense, Gray/Brown Fine to Coarse SAND, Some Silt and Gravel (SM - Possible Fill)				
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-16**
 Surface Elevation (ft) 986.0
 Job No. **C21093**
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/8± in. Base Course					
1		18	M	8	FILL: Loose, Dark Brown Fine to Coarse Sand, Some Silt and Gravel, Intermixed Clay					
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <input type="checkbox"/> <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	



LOG OF TEST BORING

Project Proposed Pavement Rehabilitation
 Dane County Human Services - Northport Rd.
 Location Madison, WI

Boring No. **B-17**
 Surface Elevation (ft) 985.0
 Job No. C21093
 Sheet 1 of 1

2921 Perry Street, Madison, WI 53713 (608) 288-4100, FAX (608) 288-7887

SAMPLE					VISUAL CLASSIFICATION and Remarks	SOIL PROPERTIES				
No.	TYPE	Rec (in.)	Moist	N		Depth (ft)	qu (qa) (tsf)	W	LL	PL
					3± in. Asphalt Pavement/7± in. Base Course					
1		18	M	8	Very Stiff, Brown Lean CLAY, Trace to Little Sand (CL)	(1.5-2.5)				
					End Boring at 2.5± ft Borehole Backfilled with Cuttings and Patched at the Surface with Asphalt					

WATER LEVEL OBSERVATIONS	GENERAL NOTES
While Drilling <input checked="" type="checkbox"/> <u>NW</u> Upon Completion of Drilling <u>NW</u> Time After Drilling _____ Depth to Water _____ Depth to Cave in _____	Start <u>3/11/21</u> End <u>3/11/21</u> Driller <u>BSD</u> Chief <u>MC</u> Rig <u>CME-55</u> Logger <u>DB/GB</u> Editor <u>RJP</u> Drill Method <u>2.25" HSA; Autohammer</u>
The stratification lines represent the approximate boundary between soil types and the transition may be gradual.	

LOG OF TEST BORING
General Notes

DESCRIPTIVE SOIL CLASSIFICATION

Grain Size Terminology

Soil Fraction	Particle Size	U.S. Standard Sieve Size
Boulders	Larger than 12"	Larger than 12"
Cobbles	3" to 12"	3" to 12"
Gravel: Coarse.....	¾" to 3"	¾" to 3"
Fine	4.76 mm to ¾"	#4 to ¾"
Sand: Coarse.....	2.00 mm to 4.76 mm.....	#10 to #4
Medium	0.42 to mm to 2.00 mm	#40 to #10
Fine	0.074 mm to 0.42 mm.....	#200 to #40
Silt.....	0.005 mm to 0.074 mm.....	Smaller than #200
Clay.....	Smaller than 0.005 mm.....	Smaller than #200

Plasticity characteristics differentiate between silt and clay.

General Terminology

Physical Characteristics
 Color, moisture, grain shape, fineness, etc.
Major Constituents
 Clay, silt, sand, gravel
Structure
 Laminated, varved, fibrous, stratified, cemented, fissured, etc.
Geologic Origin
 Glacial, alluvial, eolian, residual, etc.

Relative Density

Term "N" Value
 Very Loose..... . 0 - 4
 Loose..... 4 - 10
 Medium Dense.....10 - 30
 Dense.....30 - 50
 Very Dense.....Over 50

Relative Proportions Of Cohesionless Soils

Proportional Term	Defining Range by Percentage of Weight
Trace.....	0% - 5%
Little.....	5% - 12%
Some.....	12% - 35%
And	35% - 50%

Consistency

Term	q _u -tons/sq. ft
Very Soft.....	0.0 to 0.25
Soft.....	0.25 to 0.50
Medium.....	0.50 to 1.0
Stiff.....	1.0 to 2.0
Very Stiff.....	2.0 to 4.0
Hard.....	Over 4.0

Organic Content by Combustion Method

Soil Description	Loss on Ignition
Non Organic.....	Less than 4%
Organic Silt/Clay.....	4 - 12%
Sedimentary Peat.....	12% - 50%
Fibrous and Woody Peat...	More than 50%

Plasticity

Term	Plastic Index
None to Slight.....	0 - 4
Slight.....	5 - 7
Medium.....	8 - 22
High to Very High ..	Over 22

The penetration resistance, N, is the summation of the number of blows required to effect two successive 6" penetrations of the 2" split-barrel sampler. The sampler is driven with a 140 lb. weight falling 30" and is seated to a depth of 6" before commencing the standard penetration test.

SYMBOLS

Drilling and Sampling

- CS – Continuous Sampling
- RC – Rock Coring: Size AW, BW, NW, 2"W
- RQD – Rock Quality Designation
- RB – Rock Bit/Roller Bit
- FT – Fish Tail
- DC – Drove Casing
- C – Casing: Size 2 ½", NW, 4", HW
- CW – Clear Water
- DM – Drilling Mud
- HSA – Hollow Stem Auger
- FA – Flight Auger
- HA – Hand Auger
- COA – Clean-Out Auger
- SS - 2" Dia. Split-Barrel Sample
- 2ST – 2" Dia. Thin-Walled Tube Sample
- 3ST – 3" Dia. Thin-Walled Tube Sample
- PT – 3" Dia. Piston Tube Sample
- AS – Auger Sample
- WS – Wash Sample
- PTS – Peat Sample
- PS – Pitcher Sample
- NR – No Recovery
- S – Sounding
- PMT – Borehole Pressuremeter Test
- VS – Vane Shear Test
- WPT – Water Pressure Test

Laboratory Tests

- q_a – Penetrometer Reading, tons/sq ft
- q_a – Unconfined Strength, tons/sq ft
- W – Moisture Content, %
- LL – Liquid Limit, %
- PL – Plastic Limit, %
- SL – Shrinkage Limit, %
- LI – Loss on Ignition
- D – Dry Unit Weight, lbs/cu ft
- pH – Measure of Soil Alkalinity or Acidity
- FS – Free Swell, %

Water Level Measurement

- ▽ - Water Level at Time Shown
- NW – No Water Encountered
- WD – While Drilling
- BCR – Before Casing Removal
- ACR – After Casing Removal
- CW – Cave and Wet
- CM – Caved and Moist

Note: Water level measurements shown on the boring logs represent conditions at the time indicated and may not reflect static levels, especially in cohesive soils.

CGC, Inc.

Madison - Milwaukee

Unified Soil Classification System

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS

(more than 50% of material is larger than No. 200 sieve size)

Clean Gravels (Less than 5% fines)



GW

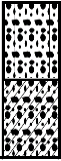
Well-graded gravels, gravel-sand mixtures, little or no fines



GP

Poorly-graded gravels, gravel-sand mixtures, little or no fines

Gravels with fines (More than 12% fines)



GM

Silty gravels, gravel-sand-silt mixtures



GC

Clayey gravels, gravel-sand-clay mixtures

GRAVELS
More than 50% of coarse fraction larger than No. 4 sieve size

Clean Sands (Less than 5% fines)



SW

Well-graded sands, gravelly sands, little or no fines



SP

Poorly graded sands, gravelly sands, little or no fines

SANDS
50% or more of coarse fraction smaller than No. 4 sieve size

Sands with fines (More than 12% fines)



SM

Silty sands, sand-silt mixtures



SC

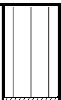
Clayey sands, sand-clay mixtures

FINE-GRAINED SOILS

(50% or more of material is smaller than No. 200 sieve size.)

SILTS AND CLAYS

Liquid limit less than 50%



ML

Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity



CL

Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays



OL

Organic silts and organic silty clays of low plasticity

SILTS AND CLAYS

Liquid limit 50% or greater



MH

Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts



CH

Inorganic clays of high plasticity, fat clays



OH

Organic clays of medium to high plasticity, organic silts

HIGHLY ORGANIC SOILS



PT

Peat and other highly organic soils

LABORATORY CLASSIFICATION CRITERIA

GW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

GP Not meeting all gradation requirements for GW

GM Atterberg limits below "A" line or P.I. less than 4

Above "A" line with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

GC Atterberg limits above "A" line or P.I. greater than 7

SW $C_u = \frac{D_{60}}{D_{10}}$ greater than 4; $C_c = \frac{D_{30}}{D_{10} \times D_{60}}$ between 1 and 3

SP Not meeting all gradation requirements for GW

SM Atterberg limits below "A" line or P.I. less than 4

Limits plotting in shaded zone with P.I. between 4 and 7 are borderline cases requiring use of dual symbols

SC Atterberg limits above "A" line with P.I. greater than 7

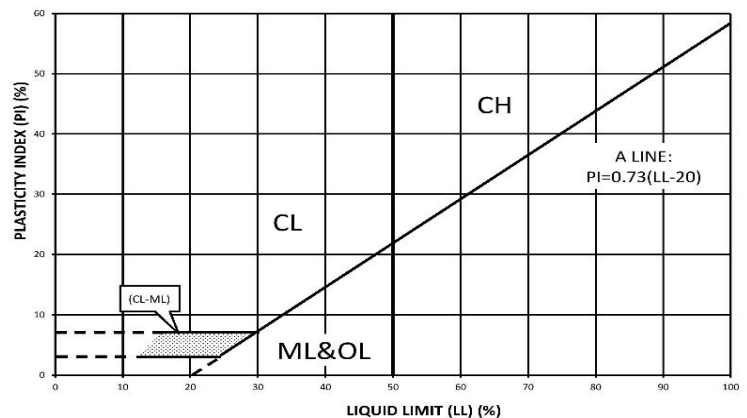
Determine percentages of sand and gravel from grain-size curve. Depending on percentage of fines (fraction smaller than No. 200 sieve size), coarse-grained soils are classified as follows:

Less than 5 percent GW, GP, SW, SP

More than 12 percent GM, GC, SM, SC

5 to 12 percent Borderline cases requiring dual symbols

PLASTICITY CHART



APPENDIX B
DOCUMENT QUALIFICATIONS

APPENDIX B DOCUMENT QUALIFICATIONS

I. GENERAL RECOMMENDATIONS/LIMITATIONS

CGC, Inc. should be provided the opportunity for a general review of the final design and specifications to confirm that earthwork and foundation requirements have been properly interpreted in the design and specifications. CGC should be retained to provide soil engineering services during excavation and subgrade preparation. This will allow us to observe that construction proceeds in compliance with the design concepts, specifications and recommendations, and also will allow design changes to be made in the event that subsurface conditions differ from those anticipated prior to the start of construction. CGC does not assume responsibility for compliance with the recommendations in this report unless we are retained to provide construction testing and observation services.

This report has been prepared in accordance with generally accepted soil and foundation engineering practices and no other warranties are expressed or implied. The opinions and recommendations submitted in this report are based on interpretation of the subsurface information revealed by the test borings indicated on the location plan. The report does not reflect potential variations in subsurface conditions between or beyond these borings. Therefore, variations in soil conditions can be expected between the boring locations and fluctuations of groundwater levels may occur with time. The nature and extent of the variations may not become evident until construction.

II. IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes. While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. *No one except you* should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one - not even you* - should apply the report for any purpose or project except the one originally contemplated.

READ THE FULL REPORT

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, *do not rely on a geotechnical engineering report* that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes - even minor ones - and request an assessment of their impact. *CGC cannot accept responsibility or liability for problems that occur because our reports do not consider developments of which we were not informed.*

SUBSURFACE CONDITIONS CAN CHANGE

A geotechnical engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

MOST GEOTECHNICAL FINDINGS ARE PROFESSIONAL OPINION

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgement to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ - sometimes significantly - from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most

effective method of managing the risks associated with unanticipated conditions.

A REPORT'S RECOMMENDATIONS ARE NOT FINAL

Do not over-rely on the confirmation-dependent recommendations included in your report. *Those confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgement and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *CGC cannot assume responsibility or liability for the report's confirmation-dependent recommendations if we do not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical engineering report. Confront that risk by having CGC participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

DO NOT REDRAW THE ENGINEER'S LOGS

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

GIVE CONSTRUCTORS A COMPLETE REPORT AND GUIDANCE

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

READ RESPONSIBILITY PROVISIONS CLOSELY

Some clients, design professionals, and constructors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic

expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineer's responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

ENVIRONMENTAL CONCERNS ARE NOT COVERED

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

OBTAIN PROFESSIONAL ASSISTANCE TO DEAL WITH MOLD

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention.* *Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

RELY ON YOUR GEOTECHNICAL ENGINEER FOR ADDITIONAL ASSISTANCE

Membership in the Geotechnical Business Council (GBC) of Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with CGC, a member of GBC, for more information.

Modified and reprinted with permission from:

Geotechnical Business Council
of the Geoprofessional Business Association
8811 Colesville Road, Suite G 106
Silver Spring, MD 20910

APPENDIX C

RECOMMENDED COMPACTED FILL SPECIFICATIONS

APPENDIX C

CGC, INC.

RECOMMENDED COMPACTED FILL SPECIFICATIONS

General Fill Materials

Proposed fill shall contain no vegetation, roots, topsoil, peat, ash, wood or any other non-soil material which by decomposition might cause settlement. Also, fill shall never be placed while frozen or on frozen surfaces. Rock, stone or broken concrete greater than 6 in. in the largest dimension shall not be placed within 10 ft of the building area. Fill used greater than 10 ft beyond the building limits shall not contain rock, boulders or concrete pieces greater than a 2 sq ft area and shall not be placed within the final 2 ft of finish subgrade or in designated utility construction areas. Fill containing rock, boulders or concrete pieces should include sufficient finer material to fill voids among the larger fragments.

Special Fill Materials

In certain cases, special fill materials may be required for specific purposes, such as stabilizing subgrades, backfilling undercut excavations or filling behind retaining walls. For reference, WisDOT gradation specifications for various types of granular fill are attached in Table 1.

Placement Method

The approved fill shall be placed, spread and leveled in layers generally not exceeding 10 in. in thickness before compaction. The fill shall be placed at moisture content capable of achieving the desired compaction level. For clay soils or granular soils containing an appreciable amount of cohesive fines, moisture conditioning will likely be required.

It is the Contractor's responsibility to provide all necessary compaction equipment and other grading equipment that may be required to attain the specified compaction. Hand-guided vibratory or tamping compactors will be required whenever fill is placed adjacent to walls, footings, columns or in confined areas.

Compaction Specifications

Maximum dry density and optimum moisture content of the fill soil shall be determined in accordance with modified Proctor methods (ASTM D1557). The recommended field compaction as a percentage of the maximum dry density is shown in Table 2. Note that these compaction guidelines would generally not apply to coarse gravel/stone fill. Instead, a method specification would apply (e.g., compact in thin lifts with a vibratory compactor until no further consolidation is evident).

Testing Procedures

Representative samples of proposed fill shall be submitted to CGC, Inc. for optimum moisture-maximum density determination (ASTM D1557) prior to the start of fill placement. The sample size should be approximately 50 lb.

CGC, Inc. shall be retained to perform field density tests to determine the level of compaction being achieved in the fill. The tests shall generally be conducted on each lift at the beginning of fill placement and at a frequency mutually agreed upon by the project team for the remainder of the project.

**Table 1
Gradation of Special Fill Materials**

Material	WisDOT Section 311	WisDOT Section 312	WisDOT Section 305			WisDOT Section 209		WisDOT Section 210
	Breaker Run	Select Crushed Material	3-in. Dense Graded Base	1 1/4-in. Dense Graded Base	3/4-in. Dense Graded Base	Grade 1 Granular Backfill	Grade 2 Granular Backfill	Structure Backfill
Sieve Size	Percent Passing by Weight							
6 in.	100							
5 in.		90-100						
3 in.			90-100					100
1 1/2 in.		20-50	60-85					
1 1/4 in.				95-100				
1 in.					100			
3/4 in.			40-65	70-93	95-100			
3/8 in.				42-80	50-90			
No. 4			15-40	25-63	35-70	100 (2)	100 (2)	25-100
No. 10		0-10	10-30	16-48	15-55			
No. 40			5-20	8-28	10-35	75 (2)		
No. 100						15 (2)	30 (2)	
No. 200			2-12	2-12	5-15	8 (2)	15 (2)	15 (2)

Notes:

1. Reference: Wisconsin Department of Transportation *Standard Specifications for Highway and Structure Construction*.
2. Percentage applies to the material passing the No. 4 sieve, not the entire sample.
3. Per WisDOT specifications, both breaker run and select crushed material can include concrete that is 'substantially free of steel, building materials and other deleterious material'.

**Table 2
Compaction Guidelines**

Area	Percent Compaction (1)	
	Clay/Silt	Sand/Gravel
<u>Within 10 ft of building lines</u>		
Footing bearing soils	93 - 95	95
Under floors, steps and walks		
- Lightly loaded floor slab	90	90
- Heavily loaded floor slab and thicker fill zones	92	95
<u>Beyond 10 ft of building lines</u>		
Under walks and pavements		
- Less than 2 ft below subgrade	92	95
- Greater than 2 ft below subgrade	90	90
Landscaping	85	90

Notes:

1. Based on Modified Proctor Dry Density (ASTM D 1557)

Name of Bidding Firm: _____

SECTION 00 41 13

BID FORM

BID NO. 321011

**PROJECT: HUMAN SERVICES PARKING LOT RECONSTRUCTION
NORTHPORT OFFICE**

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

**NOTE: WISCONSIN STATUTE 77.54 (9M) ALLOWS FOR NO SALES & USE TAX ON
THE PURCHASE OF MATERIALS FOR COUNTY PUBLIC WORKS PROJECTS. THIS
DOES NOT APPLY TO HIGHWAYS, STREETS AND ROADS PROJECTS.**

BASE BID - UNIT PRICING:

Project consists of the reconstruction of the Human Services Parking Lot to include stripping of existing asphalt, grading, repaving, and striping. 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 unit pricing as follows:

Parking Lot Base Bid:

- General Conditions (Overhead, profit, bonds, insurance, mob/demobilization, etc) – 1 Lump Sum: @ \$ _____/L.S. = _____
- Remove asphalt pavement – 8,000 Sq Yd: @ \$ _____/Sq Yd = _____
- Unclassified excavation – 1 Lump Sum: @ \$ _____/L.S. = _____
- Crushed aggregate base course (10-inch) - 8,000 Sq yd: @ \$ _____/Sq Yd = _____
- Finish base course grading – 8,000 Sq Yd @ \$ _____/Sq Yd = _____
- HMA 4LT 58-28S Surface Course (1 3/4") – 825 Ton: @ \$ _____/Ton = _____
- HMA 4LT 58-28S Surface Course (1 3/4") – 825 Ton: @ \$ _____/Ton = _____
- Pavement Markings – 1 Lump Sum @ \$ _____/L.S. = _____

Total: \$ _____
Numeric Price

_____ and ___ /100 Dollars
Written Price

ALTERNATE BID 1 - UNIT PRICING:

Provide unit pricing for alternate method for pavement removal consisting of pulverizing asphalt pavement for extents shown Sheet C2.0:

- Pulverize Asphalt Pavement – 3,600 Sq Yd: @ \$ _____/Sq Yd. = _____

UNIT PRICING:

Provide unit pricing to furnish & install the following as directed by Public Works Project Manager:

- Remove Concrete Pavement: @ \$ _____/Sq Yd
- Excavation Below Subgrade/ Breaker Run (12") : @ \$ _____/CY
- Spot Concrete Curb Removal/Replacement: @ \$ _____/LF

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

Addendum No(s). _____ through _____

Dated _____

Dane County Facilities Management must have this project completed by September 30, 2021. Assuming this Work can be started by August 9, 2021, what dates can you commence and complete this job?

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

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 is qualified as a Best Value Contractor or has proven their exemption. Qualification or exemption shall be complete before Bid Due Date / Time.

The undersigned further agrees to honor the Base Bid and the Alternate Bid(s) for sixty (60) calendar 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: _____

END OF SECTION

THIS PAGE IS FOR BIDDERS' REFERENCE
DO NOT SUBMIT WITH BID FORM.

BID CHECK LIST:

These items **must** be included with Bid:

- Bid Form
- Fair Labor Practices Certification
- Bid Bond

DANE COUNTY BEST VALUE CONTRACTING QUALIFICATION

General Contractors & all Subcontractors must be qualified as a Best Value Contractor with the Dane County Public Works Engineering Division. Qualification & listing is not permanent & must be renewed every 36 months. Complete a *Best Value Contracting Application* online at:

publicworks.countyofdane.com/bvc

DANE COUNTY VENDOR REGISTRATION PROGRAM

All bidders are strongly encouraged to be a registered vendor with Dane County. Registering allows vendors an opportunity to receive notifications for RFBs & RFPs issued by the County and provides the County with up-to-date company contact information. Complete a new form or renewal online at:

danepurchasing.com/Account/Login?

SECTION 00 43 36

PROPOSED SUBCONTRACTORS FORM

General Contractor Name: _____ Bid No: _____

Instructions:

1. Complete all information in table below.
2. Include this Form with signed Construction Contract (Section 00 52 96).
3. General contractors & subcontractors must be qualified & registered as Best Value Contractor (Dane County Ordinances, Chapter 40.07). General contractors must be qualified & registered before bids are due. Subcontractors must be qualified & registered 10 working days before performing any work related to Construction Contract. No contractor can perform work without being qualified & registered.
4. Sample Best Value Contracting Application is included in this RFB package for informational purposes; fill out form online (publicworks.countyofdane.com/bvc).

SUBCONTRACTOR NAME	ADDRESS & PHONE NO.	DIVISION OF WORK	\$\$ AMOUNT OF CONTRACT

Check box if there is another form page attached to include additional subcontractors.

The undersigned, for and on behalf of the General Contractor named herein, certifies the information on this Form is accurate.

Officer or Authorized Agent Signature

Date

Printed or Typed Name and Title

SUBCONTRACTOR NAME	ADDRESS & PHONE NO.	DIVISION OF WORK	\$\$ AMOUNT OF CONTRACT

END OF SECTION

COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 321011

Authority: 2020 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

WITNESSETH:

WHEREAS, COUNTY, whose address is c/o Deputy Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR furnish Human Services Parking Lot Reconstruction at Northport Office ("the Project"); and

WHEREAS, CONTRACTOR, whose address is _____ is able and willing to construct the Project, in accordance with the [Construction Documents, Scope of Work document, site meeting, etc.];

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 General Engineering Company and CGC, Inc. (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. 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 Specialist in accord with Chapter 19 of the Dane County Code of Ordinances. CONTRACTOR must file such plan within fifteen (15) business 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 Office of Equity & Inclusion, 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 furnish all information and reports required by COUNTY'S Contract Compliance Specialist 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.

7. 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.

8. 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.

9. CONTRACTOR must be qualified as a Best Value Contractor or have proven their exemption with Dane County Public Works Engineering Division before Bid Due Date / Time. All contractors and subcontractors must be qualified as a Best Value Contractor or have proven their exemption to perform any 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

SAMPLE
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 Deputy Public Works Director.

FOR COUNTY:

Joseph T. Parisi, County Executive Date

Scott McDonell, County Clerk Date

AIA[®] Document A310[™] – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

BOND AMOUNT:**PROJECT:**

(Name, location or address, and Project number, if any)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner 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. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this _____ day of _____

_____	(Contractor as Principal)	_____	(Seal)
(Witness)		_____	(Title)
		_____	(Surety)
_____		_____	(Seal)
(Witness)		_____	(Title)

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.

AIA[®] Document A312[™] – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 16

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

SURETY

Company: _____
(Corporate Seal)

Signature: _____

Name _____
and Title: _____

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name _____
and Title: _____

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

§ 1 The Contractor and 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 when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. 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;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

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

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

§ 5.3 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 a 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 Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right 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, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven 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 Section 5.4, and the Owner refuses the payment 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.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, 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. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .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 Section 5; and
- .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.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 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, successors and assigns.

§ 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 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 a declaration of 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.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **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.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 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: _____
Name and Title: _____
Address _____

Signature: _____
Name and Title: _____
Address _____

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.



AIA[®] Document A312[™] – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

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

AIA Document A312–2010 combines two separate bonds, a Performance Bond and a Payment Bond, into one form. This is not a single combined Performance and Payment Bond.

CONSTRUCTION CONTRACT

Date:

Amount:

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount:

Modifications to this Bond: None See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name _____
and Title: _____

Signature: _____

Name _____
and Title: _____

(Any additional signatures appear on the last page of this Payment Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

(Architect, Engineer or other party:)

§ 1 The Contractor and 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, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 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 Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 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 the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 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.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, 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.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 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. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 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 Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. 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.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

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

CONTRACTOR AS PRINCIPAL

Company: _____

(Corporate Seal)

SURETY

Company: _____

(Corporate Seal)

Signature: _____

Name and Title: _____

Address _____

Signature: _____

Name and Title: _____

Address _____

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.

SECTION 00 72 12

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 Consultant 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 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 Consultant 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 Consultant's approval, one (1) copy shall remain in Consultant'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 Consultant 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 Consultant'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 Consultant in writing of any deviation in Shop Drawings or Samples from requirements of Construction Documents. Consultant will not consider partial lists.
- E. Consultant will review and approve or reject Shop Drawings with reasonable promptness to cause no delay. Consultant'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 Consultant 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 times 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. Consultant 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 Consultant 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.
- C. Contractor & subcontractors shall follow all current *Public Health - Madison & Dane County* procedures & recommendations including the mandatory use of face masks while inside any County facility. County Project Manager shall clarify these procedures & recommendations at pre-construction meeting.

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 Consultant, 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 Consultant 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 Consultant, of equal substance and function. Consultant 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 Consultant 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 Consultant'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, Consultant or any other separate Contractor.
 3. It shall be understood that use of materials or equipment other than those specified, or approved equal by Consultant and Department, shall constitute violation of Contract, and that Consultant 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. Consultant'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 Consultant'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, Consultant 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 and pay associated fees , 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 does not need to pay State and local sales & use taxes on building materials that become part of local unit government facilities. See Wisconsin Statute 77.54 (9m). This does not include materials for highways, streets or roads. Contractor shall pay any other Sales, Consumer, Use & other similar taxes or fees required by law.
- E. Contractor shall promptly notify Consultant 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, Consultant 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 Consultant and Department.
- F. Remove from project or take other corrective action upon notice from Consultant or Department for Contractor's employees whose work is considered by Consultant 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 Consultant 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 Consultant 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 Consultant 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 Consultant and / or Department, in emergency that threatens loss or injury of property, or safety of life. Contractor shall notify Consultant and / or Department immediately thereafter. Promptly submit any claim for compensation by Contractor due to such extra work to Consultant 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, Consultant's, or Public Works Project Manager's instructions require any work to be specially tested or approved, Contractor shall give Consultant 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. Consultant 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 Consultant 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 Consultant, 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 Consultant 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 Consultant 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 Consultant'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) business 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 Consultant'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 Consultant and Public Works Project Manager of such conditions before they are disturbed. Consultant will thereupon promptly investigate conditions, and if Consultant finds that they materially differ from those shown on Drawings or indicated in Specifications, Consultant 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) business 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) business 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) business 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 Consultant 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 Consultant, 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 Consultant and approval of Department.
- D. Contractor shall submit for approval first to Consultant, 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) business days from receipt of payment.

- F. Payments by County will be due within forty-five (45) business 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, anytime after fifty percent (50%) of the Work has been furnished and installed at site, County will make remaining payments in full if Consultant and Public Works Project Manager find that progress of the Work corresponds with Construction Schedule. If Consultant 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) calendar days after final completion of the Work, and will constitute acceptance thereof.
- 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.

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 (5th) business 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 Consultant 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) business 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. 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. CONSULTANT'S AUTHORITY

- A. Consultant is retained by, and is responsible to Department acting for County.
- B. Consultant 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. Consultant 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. Consultant shall provide responsible observation of construction. Consultant has authority to stop the Work whenever such stoppage may be necessary to insure proper execution of Construction Documents.
- E. Consultant shall be interpreter of conditions of Construction Documents and judge of its performance.
- F. Within reasonable time, Consultant shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.
- G. Consultant 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 Consultant’s and Public Works Project Manager.
- D. Where guarantees or warranties 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 not 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 twenty (20) or more employees and receives \$20,000.00 or more in annual aggregate contracts with County. Contractor shall file and Affirmative Action Plan with Dane County Contract Compliance Specialist in accord with Chapter 19 of Dane County Code of Ordinances. Such plan must be filed within fifteen (15) business 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 Office of Equity & Inclusion, 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 Specialist at Dane County Office of Equity & Inclusion, 210 Martin Luther King, Jr. Blvd., Room 356, Madison, WI 53703, 608/266-4192.
 - 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 Specialist 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 Specialist, within ten (10) business 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 Specialist 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 Specialist 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. 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.

46. CLAIMS

- A. No claim may be made until Department's Deputy Public Works Director has reviewed Consultant's decision as provided for in Article 35 of General Conditions of Contract. If any claim remains unresolved after such review by Department's Deputy 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.

47. 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.

48. 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 than \$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 Consultant 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 Consultant from all damages caused by or as result of Contractor's operations" and each shall be listed as additional insured on Contractor's and subcontractors' insurance policies.
 - c) Obligations of Contractor under Article 50.A.2.b) shall not extend to liability of Consultant, 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 Consultant, 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) business days written notice has been received by Risk Manager."

B. Builder's Risk:

- 1. County shall provide Builder's Risk insurance coverage for its insurable interests in construction or renovation projects with completed value of \$1,000,000 or less. Therefore, if project completed value is more than \$1,000,000, Contractor shall obtain and maintain in force, at its own expense, Builder's Risk Insurance on all risks for amount equal to full completed value of covered structure or replacement value of alterations or additions. Any deductible shall not exceed \$25,000 for each loss. Policy shall include occupancy clause and list Dane County as loss payee.

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 Consultant, 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 Consultant, 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.

49. 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.

END OF SECTION

SECTION 00 73 00

BEST VALUE CONTRACTING

1. CONTRACTORS / LICENSURE APPLICANTS

The Dane County Department of Public Works requires contractors & subcontractors to be a Best Value Contractor (BVC) before being hired. Contractor & subcontractor application documents should be turned in immediately. Contractor approval or exemption must be complete prior to Bid Due Date / Time. All subcontractors must also be approved or prove their exemption ten (10) business or more days before performing any work under a County contract. 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 qualification status will retain that status for a period of three (3) 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 application or status. Failure to do so could result in suspension, revocation of the contractor’s 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: <https://dwd.wisconsin.gov/apprenticeship/>.

Fill out the BVC Application at the Public Works Engineering Division web site (publicworks.countyofdane.com/bvc). This document is only provided in the RFB for reference. The following page shows what the questions are on the application.

2. EXEMPTIONS TO QUALIFICATION

Contractors performing work that does not apply to an apprenticeable trade, as outlined in Item 4. Apprenticeable Trades, is the only reason for claiming an exemption if not an active Wisconsin Trades Trainer. See Question 18A.

3. APPLICATION QUESTIONS

NO.	PROOF OF RESPONSIBILITY	CHECK IF APPLICABLE
1	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 qualified with the County or become so ten (10) or more days before beginning any work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
2	Does your firm possess 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, qualified subcontractors?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
3	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: <input type="checkbox"/> No: <input type="checkbox"/>

4	Will your firm meet all bonding requirements as required by applicable law or contract specifications?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
5	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: <input type="checkbox"/>	No: <input type="checkbox"/>
6	Will your firm maintain a substance abuse policy for employees hired for public works contracts that comply with Wis. Stats. Sec. 103.503?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
7	Will your employees who will perform work on a Public Works project all be covered under a current workers compensation policy and be properly classified under such policy?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
8	Will your employees who will perform work on a Public Works project have the opportunity to enroll in minimum essential coverage and not be subject to an enrollment period of more than 60 days per the federal Affordable Care Act, Sec. 1513?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
9	Will your firm fully abide by the equal opportunity and affirmative action requirements of all applicable laws, including County ordinances?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/>
10	Has your firm been the subject of any order or judgement from any State or Federal Agency or court concerning employment practice, including but not limited to: classification of employees under state unemployment or workers compensation laws; minimum wage, overtime pay, recordkeeping, and child labor standards imposed by federal or state law; and employment discrimination or unfair labor practices prohibited by federal or state law. (Attach copies of any order or judgement)	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
11	Is your firm authorized or registered to transact business in the state by the Department of Financial Institutions in compliance with Wis. Stat. Chaps. 178, 179, 180, 181, or 183?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
12	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: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
13	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: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
14	In the past three (3) years, has your firm been debarred by any federal, state or local government agency?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
15	In the past three (3) years, has your firm defaulted or failed to complete any contract?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
16	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: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
17	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: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.
18	Is your firm an active Wisconsin Trade Trainer as determined by the Wisconsin Bureau of Apprenticeship Standards?	Yes: <input type="checkbox"/>	No: <input type="checkbox"/> If Yes, attach details.

18A	Is your firm claiming an exemption to qualification?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
19	Contractor has been in business less than one year?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>

4. APPRENTICEABLE TRADES:

- Bricklayer
- Boilermaker
- 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

END OF SECTION

SECTION 00 73 11

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.nlr.gov and werc.wi.gov.

For reference, Dane County Ordinance 25.09 is as follows:

(1) 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 Controller 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.

END OF SECTION

SECTION 01 00 00

GENERAL REQUIREMENTS

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
1. Summary
 2. Summary of the Work
 3. Contractor Use of Premises
 4. Applications for Payment
 5. Change Procedures
 6. Alternates
 7. Lump Sum Allowances for Work
 8. Coordination
 9. Cutting and Patching
 10. Conferences
 11. Progress Meetings
 12. Job Site Administration
 13. Submittal Procedures
 14. Shop Drawings
 15. Product Data
 16. Manufacturers' Certificates
 17. Quality Assurance / Quality Control of Installation
 18. Protection of Installed Work
 19. Parking
 20. Staging Areas
 21. Protection
 22. Product Options
 23. Contract Closeout Procedures
 24. Final Cleaning
 25. Operation and Maintenance Data
 26. Spare Parts and Maintenance Materials

1.2 SUMMARY OF THE WORK

- A. Work by Owner: Not applicable
- B. Permits: Prior to commencement of the Work, Contractor to secure any and all necessary permits for completion of the Work and facility occupancy. Provide Public Works, Project Manager with copies of all permits.
- C. Diggers Hotline:
1. It is General Contractor's responsibility to contact Diggers Hotline to have all utility locations marked prior to excavation and planning excavation so as not to delay the Work.

2. Diggers Hotline shall also be used to obtain information on safe working clearances from overhead lines.
3. Completely comply with all requirements of each affected utility company.
4. It is General Contractor's responsibility to contact & hire private utility locating services if necessary.

1.3 CONTRACTOR USE OF PREMISES

- A. Limit use of premises to allow work by Contractors or Subcontractors and access by Owner.
- B. Contractors or Subcontractors shall not visit the site if they are or have recently been ill.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit each Application for Payment on AIA G702™ and G703™ forms or approved contractors invoice form. Contractor shall have these forms notarized and signed.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly.
- D. Submit Applications for Payment to Public Works Project Manager for approval & processing for payment.

1.5 CHANGE PROCEDURES

- A. Contractor's costs for Products, delivery, installation, labor, insurance, payroll, taxes, bonding, equipment rental, overhead and profit will be included in Change Orders authorizing expenditure of funds from contingency allowance.
- B. Change Order Forms: Dane County Contract Change Order

1.6 ALTERNATES

- A. Alternates quoted on Bid Form shall be reviewed and accepted or rejected at Owner's option.
- B. Coordinate related work and modify surrounding work as required.
- C. Schedule of Alternates: there are no alternates proposed for this project.
- D. Schedule of Alternates:
 1. Alternate Bid 1 Title.
 - a. Describe Alternate Bid 1.
 2. Alternate Bid 2 Title.
 - a. Describe Alternate Bid 2.

1.7 LUMP SUM ALLOWANCES FOR WORK

- A. Not Applicable.

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. Contractor shall provide Public Works Project Manager with work plan that ensures the Work will be completed within required time of completion.

1.9 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching new work; restore work with new Products.
- B. Fit work tight to adjacent elements. Maintain integrity of structures adjacent to cutting or patching. Fill all voids.
- C. Refinish surfaces to match adjacent finishes.

1.10 CONFERENCES

- A. Project shall have pre-bid conference; see Instructions to Bidders.
- B. Owner will schedule preconstruction conference after Award of Contract for all affected parties.
 - 1. Contractor shall submit Construction Schedule at pre-construction meeting.
- C. Safe distancing & face masks are required for all conference attendees. Conferences will be limited to 10 people; please limit number of attending staff & subcontractors. If there are more than 10 people, group will be split & there will be two or more conferences. Allow sufficient time if you do not make it in to first group.

1.11 PROGRESS MEETINGS

- A. Owner shall schedule and administer meetings throughout progress of the Work as deemed necessary.

- B. Owner shall preside at meetings, record minutes, and distribute copies within two (2) business days to those affected by decisions made.
- C. Attendance at progress meetings by General Contractor, subcontractors, or their authorized representative, is mandatory.
- D. Contractors shall give verbal reports of progress on the Work, discuss schedule for upcoming period and present all conflicts, discrepancies or other difficulties for resolution.

1.12 JOB SITE ADMINISTRATION

- A. Contractor shall have project superintendent on site during progress of the Work.
- B. Contractor shall not change their project superintendent or project manager for duration of the Work without written permission of Public Works Project Manager.

1.13 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.

1.14 SHOP DRAWINGS

- A. Submit number of copies that Contractor requires, plus three (3) copies that shall be retained by Public Works Project Manager.

1.15 PRODUCT DATA

- A. Submit number of copies that Contractor requires, plus two (2) copies that shall be retained by Public Works Project Manager.
- 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 MANUFACTURERS' CERTIFICATES

- A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project Manager 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.

1.17 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.

1.18 PROTECTION OF INSTALLED WORK

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

1.19 PARKING

- A. All contractors and their employees shall cooperate with Facilities Management and others in parking of vehicles to avoid interference with normal operations and construction activities.
- B. Do not obstruct existing service drives and parking lots with equipment, materials and / or vehicles. Keep accessible for Owner's use at all times.

1.20 STAGING AREAS

- A. Coordinate staging areas with Public Works Project Manager prior to starting the Work.

1.21 PROTECTION

- A. Contractor shall protect from damage / injury all trees, shrubs, hedges, plantings, grass, mechanical, electrical & plumbing equipment, walks and driveways and pay for any damage to same resulting from insufficient or improper protection.
- B. Maintain areas free of waste materials, debris, and rubbish. Maintain site in clean and orderly condition.

1.22 PRODUCT OPTIONS

- A. Where definite material is specified, it is not intentional to discriminate against "equal" product made by another manufacturer. Intention is to set definite standard of material quality. Should bidder choose to bid materials other than those specified, bidder shall submit said materials specifications to Public Works Project Manager for approval at least seven (7) business days prior to Bid Due Date.
- B. Products and materials that are not specified, but have been approved for use by Public Works Project Manager shall be identified in addenda to all bidding contractors.

1.23 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 Public Works Project Manager's inspection.
- B. Submit final Application for Payment identifying total adjusted Contract Sum / Price, previous payments, and amount remaining due.

1.24 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.

1.25 OPERATION AND MAINTENANCE MANUAL

- A. Provide two (2) bound, hard-copy operation and maintenance manuals that include all systems, materials, products, equipment, mechanical and electrical equipment and systems supplied and installed in the Work. Provide electronic version of operation and maintenance manual also.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

SECTION 01 10 00

SUMMARY

PART 1 - GENERAL

1.01 Summary

- A. Section Includes:
 - a. Project Information
 - b. Authority
 - c. Unit Quantities
 - d. Measurement of Quantities
 - e. Measurement and Payment
 - f. Defect Assessment
 - g. Non-Payment for Rejected Products

1.02 Project Information

- A. Project Identification: Human Services Parking Lot Reconstruction
 - a. Project Location: 1202 Northport Dr. Madison WI, 53704
- B. Owner: Dane County Facilities Management
 - a. Owner Representative:
 - i. Steve Richards, Public Works Project Manager
 - 1. 608-516-8367
 - b. Facilities Management:
 - i. Amanda DePagter, Director of Facilities and Services
 - ii. Steve Hutchinson, Facilities Manager
- C. Engineering Consultants:
 - a. General Engineering Company (GEC)
 - b. CGC, Inc.

1.03 Authority

- A. Measurement methods delineated within the individual specification sections or within the Bid Form are intended to compliment the criteria of this section. In the event of conflict, the requirements of the individual specification section or Bid Form shall govern.
- B. Engineer will verify all quantities.

1.04 Unit Quantities

- A. Quantities indicated within the Bid Form are for bidding and contract purposes only. Quantities supplied or placed in the Work and verified by the Engineer shall determine payment.
- B. If the actual work requires greater or fewer quantities than indicated within the Bid Form, provide the actual quantities at the contract unit prices.

1.05 Measurement of Quantities

- A. Measurement by volume: Measured by cubic dimension using length, width, and height or thickness.

- B. Measurement by area: Measured by square dimension using length and width.
- C. Measurement by length: Measured by linear dimension along the centerline.
- D. Measurement by weight: Measured by weight with a scale.
- E. Measurement by unit: Measured by completed item.

1.06 Measurement and Payment

- A. Remove Asphalt Pavement:
 1. Remove Asphalt Pavement will be measured by area.
 2. Payment will be made at the contract unit price per square yard and shall include all labor, and equipment necessary to remove existing asphalt pavement and haul the material to the disposal site.
- B. Unclassified Excavation
 1. Unclassified Excavation will be measured as a completed unit.
 2. Payment will be made at the contract lump sum price and shall include all labor, materials, and equipment necessary to complete the specified unclassified excavation including removing and disposing of existing asphalt pavement, concrete pavement, curb and gutter, sidewalk, stripping and stockpiling topsoil, clearing, grubbing and disposal of plant material, cutting and filling to the required subgrade contours and sections, compacting, compaction testing, proof rolling, and disposition of excess soil material.
 3. Removing existing asphalt pavement, concrete pavement, curb and gutter, sidewalk, saw cutting, stripping and stockpiling topsoil, clearing and grubbing, and finish grading of street subgrade are incidental to the unclassified excavation unless separate bid items are included on the Bid Form.
- C. Crushed Aggregate Base Course (10"):
 1. Crushed aggregate base course (10") will be measured by area.
 2. Payment will be made at the contract unit price per square yard and shall include all labor, materials, and equipment necessary to furnish and place crushed aggregate base course under the street and curb and gutter including crushed aggregate, placement, compaction (including water if necessary), proof rolling, and finish grading.
 3. Finish base course grade (red tops) will not be provided for streets with curb and gutter. If the Contractor requires redtops, the survey cost will be charged to the Contractor.
 4. Finish grading may be included as a separate item.
- D. Finish Base Course Grading:
 1. Finish base Course Grading will be measured by area.
 2. Payment will be made at the contract unit price per square yard and shall include all labor, materials, and equipment necessary to finish grade the crushed aggregate base course to the final grade, elevation and cross section including grading, compaction, water if necessary, and proof rolling.
- E. HMA 4LT 58-28S Binder Course, 1-3/4-Inch:
 1. HMA 4LT 58-28S Binder Course, 1-3/4-Inch, will be measured by weight.
 2. Payment will be made at the contract unit price per ton and shall include all labor, materials, and equipment necessary to furnish and install AC pavement including asphaltic material, placement, compaction, and testing.
- F. HMA 4LT 58-28S Surface Course, 1-3/4-Inch:
 1. HMA 4LT 58-28S Surface Course, 1-3/4-Inch, will be measured by weight.

2. Payment will be made at the contract unit price per ton and shall include all labor, materials, and equipment necessary to furnish and install AC pavement including asphaltic material, placement, compaction, and testing.
- G. Pavement Markings:
1. Pavement Markings, will be measured as a completed unit.
 2. Payment will be made at the contract lump sum price and shall include all labor and equipment necessary to mark the parking stalls, handicap symbols, and arrows as indicated or as directed by the Engineer including layout, traffic paint, and marking.
- H. Unit Pricing - Remove Concrete Pavement:
1. Remove Concrete Pavement will be measured by area.
 2. Payment will be made at the contract unit price per square yard and shall include all labor, and equipment necessary to remove existing concrete pavement and haul the material to the disposal site.
- I. Unit Pricing - Excavation Below Subgrade/Breaker Run (12"):
1. Excavation Below Subgrade/Breaker Run (12") will be measured by volume.
 2. Payment will be made at the contract unit price per cubic yard and shall include all labor, materials, and equipment necessary to excavate below subgrade and place 3" breaker run material including excavation, disposal of excavated material, breaker run material, compaction, and proof rolling. The volume in cubic yards will be the product of the area that receives breaker run material times the compacted thickness.
- J. Unit Pricing - Spot Concrete Curb and Gutter Removal/Replacement:
1. Spot Concrete Curb and Gutter Removal/Replacement, length will be measured by length along the flowline of the gutter.
 2. Payment will be made at the contract unit price per linear foot and shall include all labor, materials, and equipment necessary to install concrete curb and gutter including removal of existing, crushed aggregate base preparation, forming, concrete, expansion joints, reinforcement where required, finishing, curing, and testing. Crushed aggregate base is not included.

1.07 Defect Assessment

- A. Replace the work, or portions of the Work, not conforming to the specified requirements.
- B. If, in the opinion of the Engineer, it is not practical to remove and replace the Work, the Engineer will direct one of the following remedies.
 1. The defective Work may remain, but the unit sum/price will be adjusted to a new sum/price, at the discretion of the Engineer.
 2. The defective Work will be partially repaired to the instruction of the Engineer, and the unit sum/price adjusted to a new sum/price, at the discretion of the Engineer.
- C. The individual specification sections may modify these remedies.
- D. The authority of the Engineer to assess the defect and identify payment adjustments, is final.

1.08 Non-Payment for Rejected Products

- A. Product: Any natural, processed, manufactured, or fabricated material incorporated into the Work.
- B. Payment will not be made for any of the following:
 1. Products wasted.
 2. Products determined to be unacceptable before or after placement.
 3. Products not completely unloaded from the transporting vehicle.
 4. Products placed beyond the lines and levels required for the Work.

5. Products remaining on hand after completion of the Work.
6. Loading, hauling, and disposing of rejected products.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 01 35 29

ENVIRONMENTAL POLLUTION, SAFETY, AND ACCESS

PART 1 - GENERAL

1.01 Section Includes

- A. Requirements for preventing and/or reducing environmental pollution.
- B. Safety during construction operations.
- C. Public and private access to construction site.

1.02 Environmental Pollution

- A. General: Maintain all work areas on and off the site free from environmental pollution that would be in violation of any Federal, State or local regulation.
- B. Protection of Sewers: Do not impair the operation of existing sanitary sewers. Prevent construction material, pavement, concrete, soil or other debris from entering a sewer or sewer structure. When it is necessary to divert wastewater flow to accomplish the construction work, divert the flow to sewers draining to the treatment facilities. Under no circumstances shall wastewater be allowed to flow onto the ground or into surface waters.
- C. Erosion Control: Sediment from the project site shall not be allowed to be deposited off the site or into surface waters on or off the site. Provide erosion control facilities and measures to prevent erosion.
- D. Air Quality: Minimize air pollution during construction. Wet bare soils during dry weather to minimize dust. Dust prevention is particularly important on unpaved streets and haul roads. Provide dust prevention treatments or watering to reduce dust. Provide and maintain combustion emission control devices on construction equipment and shut down motorized equipment not in use. Trash burning at the construction site will not be permitted.
- E. Noise Control: Conduct the construction operations to cause the least amount of noise. Provide intake silencers on compressors and exhaust silencers or mufflers on internal combustion engines. Do not operate construction vehicles and equipment between the hours of 8:00 P.M. and 7:00 A.M. without written permission from the Engineer.
- F. Spills: Spills of hazardous materials shall be immediately contained and cleanup provided by qualified persons. Report the spill to the applicable authority.

1.03 Safety

- A. Contractor's Responsibility: The Contractor shall be solely and completely responsible for safety as set forth in Sections 6.13, 6.14, and 6.15 of the General Conditions. This requirement shall apply continuously and not be limited to normal working hours. Neither the Owner nor the Engineer nor their representatives are responsible for safety.
- B. Safety Measures and Equipment: Maintain at the job-site safety equipment and apparatus applicable to the work and as prescribed by governing codes.

Provide equipment and supplies necessary to give first aid to injured persons. Establish a procedure for immediate transporting of injured persons to local hospital or medical clinic.

Take necessary precautions to protect the general public from hazards including, but not limited to, surface irregularities or unramped grade changes in pedestrian walkways, trenches and excavations. Provide barricades, lights and signs as necessary to ensure safety to the public.

Performance of the work with respect to ladders, platforms, structure openings, temporary railings, scaffolding, shoring, lagging and machinery guards shall be in conformance with applicable

governing codes.

Maintain temporary fencing, railings, barricades or steel plates as applicable at all openings, trenches or excavations. Provide lights or reflectors as necessary or required by governing codes.

- C. Accident Reports: Immediately report all serious injuries and property damage to the Engineer. Promptly provide a written report of the incident to the Engineer giving full details of the accident including a description of the injury or damage, persons injured or involved and statements of witnesses.

If a claim is made by anyone against the Contractor or any subcontractor resulting from an accident, promptly report the facts in writing to the Engineer giving full details of the claim including investigation and restitution.

- D. Traffic Safety: Comply with all laws regarding closing or restricting the use of public streets and comply with any specific requirements indicated in other Sections or in highway permits specific to the work. Provide traffic control devices in accordance with the Manual of Uniform Traffic Control Devices. Provide properly equipped flaggers as necessary or when required by the contract documents.
- E. Fire Prevention: Execute the work in a manner that minimizes the potential for a fire. Provide fire extinguishers in construction vehicles and equipment. Provide personnel with information on reporting a fire.
- F. Use of Explosives: The use of explosives shall be in accordance with Wisconsin Administrative Code COM 7. Contractor is responsible for obtaining any required permits. For work outside of Wisconsin, comply with the applicable codes of the state in which the work is located.

1.04 Site Access

- A. Access to Property: No public or private road shall be closed except by the express permission of the Engineer or Owner. Conduct the work to ensure the least possible obstruction to traffic and normal commercial pursuits. Construct and maintain such facilities as may be required to provide access to properties. Pedestrian access to properties shall be provided at all times. Vehicle access to properties shall be maintained during all non-working hours.
- B. Where traffic will pass over backfilled areas prior to paving, the roadway shall be maintained in a manner that will allow normal vehicular traffic. Temporary driveway access shall be provided.
- C. Emergency and Public Vehicle Access: Notify the local fire and police departments and public and school transportation companies at least 24 hours prior to closing any street or portion thereof. No street closing shall be made without the concurrence of the fire and police departments. Notify the fire and police when the streets are passable for emergency vehicles. Maintain vehicle access to consecutive arterial crossings or dead end streets in excess of 300 feet unless written permission is obtained from the fire and police departments.

Provide non-working hours telephone number(s) to the fire and police departments to allow contact for emergencies.

Maintain postal service to properties affected by the construction.

END OF SECTION

SECTION 01 71 33

RESTORATION

PART 1 - GENERAL

1.01 Section Includes

- A. Restoration of site following construction.
- B. Items disturbed as a result of activities performed as part of the Work shall be restored include, but are not limited to, the following:
 - 1. Asphalt, concrete or gravel roadways
 - 2. Driveways
 - 3. Sidewalks and curb & gutter
 - 4. Fences and retaining walls
 - 5. Lawns, grassed areas, trees and shrubbery
 - 6. Culverts and ditches
 - 7. Property corners and survey monuments
- C. Specific items of restoration may be noted on the drawings or included elsewhere in the specifications.

1.02 Quality

- A. Restoration, when completed, shall equal or surpass the conditions existing before construction.
- B. When specifications are included for specific items of restoration, the work shall be performed in accordance with the applicable specification.

PART 2 - PRODUCTS

2.01 Materials

- A. Materials shall be in accordance with specifications when the restoration item is covered by a specification. This includes such items as paving and concrete work.
- B. When there is no specification to cover a particular restoration item, materials used shall be the same as the existing or similar if existing material is unavailable.

PART 3 - EXECUTION

3.01 Roadways

- A. Roadways shall be restored in kind unless otherwise specified.
- B. Pavement
 - 1. Unless noted on the drawings or otherwise specified, the Contractor is required to restore only the pavement removed or damaged during construction.
 - 2. The edges of all asphalt and concrete pavements shall be saw-cut to produce a clean, straight, vertical edge for abutting new pavement.
 - 3. Unless otherwise specified, depth of pavement shall equal that existing prior to construction.
- C. Shoulders
 - 1. Unless otherwise noted, the following conditions shall govern shoulders:
 - a. In residential areas where turf is maintained to the edge of the pavement, the shoulders shall be topsoiled and seeded.
 - b. In rural areas or in residential areas where turf is not maintained to the edge of the pavement, gravel shoulders shall be constructed. Unless otherwise noted, gravel shoulders shall have a minimum compacted thickness of 4" and width of 4 feet.

3.02 Driveways

- A. Driveways shall be restored in kind to the width of the existing drive.

- B. Minimum material thickness shall be as follows:
 - 1. Concrete: 6" with 3" compacted gravel.
 - 2. Gravel: 6" compacted thickness.
 - 3. Asphalt:
 - Residential – 2" with 6" compacted gravel.
 - Commercial – 3" with 8" compacted gravel.

3.03 Sidewalks and Curb & Gutter

- A. Sidewalk
 - 1. Replace to original width.
 - 2. Thickness:
 - a. Standard: 4"
 - b. At drives: 6"
- B. Curb & Gutter
 - 1. Replace to original grade and cross section.

3.04 Fences and Retaining Walls

- A. Repair any damage and replace at original location.

3.05 Lawns, Grassed Areas, Trees and Shrubbery

- A. Lawns and Grassed Areas
 - 1. Restore in accordance with Section 32 92 19.
- B. Trees
 - 1. Replace trees damaged or destroyed which are located outside of easements or rights-of-ways.
- C. Shrubbery
 - 1. Remove and replant whenever possible.
 - 2. Replace damaged or destroyed shrubbery located outside of easements or right-of-ways.

3.06 Culverts and Ditches

- A. All existing culverts shall be reopened and natural drainage restored. Restore culverts broken or damaged during construction to their original condition, size, and location. The Contractor shall notify Engineer of any previously damaged culverts prior to construction activities or as soon as the damaged condition is known.
- B. Restore all drainage ditches destroyed, damaged or otherwise modified during construction. Ditches so reconstructed shall be built in their original locations and cross section or as otherwise shown on the Drawings.

3.07 Property Corners & Survey Monuments

- A. Restore and/or replace all survey monuments and property corners destroyed, damaged, or disturbed during construction. All work under this section must be completed by a Registered Land Surveyor and must be completed in accordance with applicable state and/or local statutes, codes, and guidelines.

END OF SECTION

SECTION 01 74 19

CONSTRUCTION WASTE MANAGEMENT, DISPOSAL & RECYCLING

PART 1 GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Summary
 - 2. Waste Management Goals
 - 3. Construction and / or Demolition Waste Management
 - 4. Waste Management Plan
 - 5. Reuse
 - 6. Recycling
 - 7. Materials Sorting and Storage On Site
 - 8. Lists of Recycling Facilities Processors and Haulers
 - 9. Waste Management Plan Form

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 Dane County Green Building Policy, Resolution 299, 1999-2000.

1.3 CONSTRUCTION AND / OR DEMOLITION WASTE MANAGEMENT

- A. All construction and demolition waste suitable for recycling may go to Dane County Construction & Demolition Recycling Facility located at 7102 US Hwy 12, Madison, located across from Yahara Hills Golf Course. This facility can receive mixed loads of construction and demolition waste. For complete list of acceptable materials, see landfill.countyofdane.com/services/construction.
- B. Dane County Landfill, also at 7102 US Hwy 12, Madison, must receive all other waste from this project. landfill.countyofdane.com/services/landfill.

1.4 WASTE MANAGEMENT PLAN

- A. Contractor shall develop Waste Management Plan (WMP) for this project. Contact the Dane County Special Projects & Materials Manager with questions. 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.
- B. Contractor shall complete WMP and include cost of recycling / reuse in Bid. Submit WMP to Public Works Project Manager within fifteen (15) business days of Bid Due 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.

1.5 REUSE

- A. Contractors and subcontractors are encouraged to reuse as many waste materials as possible. Investigate salvage for materials not reusable on site.

1.6 RECYCLING

- A. These materials may be recycled at Dane County Construction & Demolition Recycling Facility:
 1. Wood.
 2. Wood Pallets.
 3. PVC Plastic (pipe, siding, etc.).
 4. Asphalt & Concrete.
 5. Bricks & Masonry.
 6. Vinyl Siding.
 7. Cardboard.
 8. Metal.
 9. Unpainted Gypsum Drywall.
 10. Shingles.
- B. These materials can be recycled elsewhere in Dane County area:
 1. Fluorescent Lamps.
 2. Foam Insulation & Packaging (extruded and expanded).
 3. Carpet Padding.
 4. Barrels & Drums.
- C. All materials must be recycled at WDNR permitted waste processing facilities that adhere to all State Statutes.

1.7 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.
- C. Dane County allows mixed loads of recycled materials only per instructions at landfill.countyofdane.com/services/construction.

1.8 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

- A. Refer to landfill.countyofdane.com/services/construction for information on Dane County Construction & Demolition Recycling Facility.
- B. Web site landfill.countyofdane.com/recycle-locations lists current information for Dane County Recycling Markets. Contractors can also contact Allison Rathsack, 608/266-4990, or local city, village, town recycling staff listed at site landfill.countyofdane.com/resources/local-contacts. Statewide listings of recycling / reuse markets are available from UW Extension at uwgb.edu/solid-hazardous-waste-education-center/.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

WASTE MANAGEMENT PLAN FORM



Contractor 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: _____
Wood	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Wood Pallets	_____ units	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
PVC Plastic	_____ 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: _____
Vinyl Siding	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Cardboard	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Metals	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Unpainted Gypsum / Drywall	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Shingles	_____ cu. yds. _____ tons	_____ 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: _____
Carpet Padding	_____ cu. ft. _____ lbs.	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Barrels & Drums	_____ units	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____
Glass	_____ cu. yds. _____ tons	_____ Recycled _____ Reused _____ Landfilled _____ Other	Name: _____

WASTE MANAGEMENT PLAN FORM

Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____
Other	_____	<input type="checkbox"/> Recycled <input type="checkbox"/> Reused <input type="checkbox"/> Landfilled <input type="checkbox"/> Other	Name: _____

SECTION 03 31 01
SITWORK CONCRETE

PART 1 - GENERAL

1.01 Section Includes

- A. Cast-in-place concrete for curb and gutter, sidewalk, exterior slabs, and other similar exterior concrete. Does not include concrete pavement.

1.02 Related Sections

- A. Section 01 71 33 - Restoration
- B. Section 32 13 13 – Concrete Curb and Gutter.

1.03 References

- A. ACI 301 - Specifications for Structural Concrete.
- B. ACI 305R - Hot Weather Concreting.
- C. ACI 306R - Cold Weather Concreting.
- D. ACI 308 - Standard Practice for Curing Concrete.
- E. ASTM A185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
- F. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- G. ASTM C31 - Making and Curing Concrete Test Specimens in the Field.
- H. ASTM C33 - Standard Specification for Concrete Aggregates.
- I. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- J. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
- K. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
- L. ASTM C150 - Standard Specifications for Portland Cement.
- M. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
- N. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete.
- O. ASTM C260 - Air Entraining Admixtures for Concrete.
- P. ASTM C494 - Chemical Admixtures for Concrete.
- Q. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- R. ASTM C618 - Coal Fly Ash and Raw or Calcinated Natural Pozzolan for Use as a Mineral Admixture in Portland Cement.
- S. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds having Special Properties for Curing and Sealing.
- T. ASTM D1751 - Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- U. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.04 Quality Assurance

- A. Perform concrete work in accordance with ACI 301.
- B. Conform to ACI 305R when concreting in hot weather and ACI 306R when concreting in cold weather.

1.05 Submittals

- A. Concrete Mix Design
 - 1. Provide dry weight of cement, saturated-surface dry weight of aggregate, brand name, type, and quantity of admixtures, and pounds of water per cubic yard of concrete.
 - 2. Test data supporting the portions of the design mixes based on laboratory trial batches in accordance with ACI 318. Test data supporting the proportions of the design mixes based on past field experience in accordance with ACI 318 may be provided in lieu of the laboratory data.
- B. Admixtures: Submit manufacturer's literature and certifications.
- C. Delivery Tickets: Provide for each load of concrete delivered; include the following information: Name of ready-mix batch plant, serial number of ticket, date, truck number, name of contractor, name and location of job, class of concrete, amount of concrete in cubic yards, time loaded or of first mixing of cement and aggregate, water added at jobsite and initials of person authorizing addition, admixtures, if added.
- D. Test Results.

PART 2 - PRODUCTS

2.01 Reinforcement

- A. Reinforcing Steel: ASTM A615; Grade 60, deformed, unfinished.
- B. Welded Steel Wire Fabric: ASTM A185: flat sheets, unfinished.

2.02 Concrete Materials

- A. Portland Cement: ASTM C150, Type 1.
- B. Aggregate: ASTM C33.
- C. Water: Clean and not detrimental to concrete.
- D. Flyash: ASTM C618, Class C.

2.03 Concrete Admixtures

- A. Air Entrainment: ASTM C260.
- B. Water Reducing: ASTM C494; Type A, Water Reducing.
- C. Retarding: ASTM C494. Type D, Water Reducing and Retarding.
- D. Accelerating: ASTM C494 Type C Accelerating (non-chloride); Type E, Water Reducing and Accelerating (non-chloride).

2.04 Accessories

- A. Curing Material: Liquid membrane curing compound; ASTM C309, Type 2, white pigmented.
- B. Curing/Sealing Material:
 - 1. An acrylic resin curing, sealing, and hardening compound for exterior freshly placed concrete that provides a durable, long-lasting moisture impermeable finish that improves resistance to

- chemicals, grease, and de-icing salts.
- 2. Meet requirements of ASTM C1315, Type 1, Class B and ASTM C309, Type 1, Classes A and B.
- 3. Manufacturer: AS-1 Achro Seal 1315 OTC, TK Products; Seal Cure 309-30, W.R. Meadows; or equal.

C. Prefomed Expansion Joint Fillers: ASTM D1751 or ASTM D1752.

2.05 Concrete Mix Design

- A. Mix and deliver concrete in accordance with ASTM C94.
- B. Select proportions in accordance with ACI 301.
- C. Provide concrete in accordance with the following requirements:
 - a. Concrete Mixes

Concrete Mixes		
Class	Compressive Strength at 28 days, psi	Max. Water-Cement Ratio By Weight
Air-Entrained Concrete		
D	4,000	0.48

- 2. Air Content: Total air content (entrained and entrapped) for air-entrained concrete shall be in accordance with the following table:

Air Content	
Nominal Max. Size Aggregate	Air Content
3/4"	6% ± 1
1"	6% ± 1
1 1/2"	5% ± 1

- 3. In any mix, up to 20 percent of the cement (on a pound per pound basis) may be replaced with flyash.

D. Slump: 3 inches plus or minus 1 inch.

PART 3 - EXECUTION

3.01 Preparation for Concrete Placement

- A. Check grades and placement of forms.
- B. Remove debris, water, excess form oil etc. from forms.
- C. Verify that anchors, seats, plates, reinforcement, inlet castings, and other items to be cast into concrete are accurately placed, and anchored securely.
- D. Provide a minimum cover of 1-1/2 inch for reinforcing bars.
- E. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
- F. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert dowels and pack solid with non-shrink grout.

3.02 Delivery

- A. Deliver and discharge concrete within 90 minutes or before 300 drum revolutions, whichever comes first, after the addition of water to the cement.
- B. Do not add water to the mix after the initial introduction of water without the approval of the Engineer. If water is added at the jobsite, the concrete shall be mixed a minimum of 30 drum revolutions. Any water added shall not bring the total water in the mix to an amount above the specified water-cement ratio.

- C. The temperature of the concrete as delivered shall not exceed a temperature of 90°F.
- D. When the average of the highest and lowest temperature during the period from midnight to midnight is expected to drop below 40°F for more than three successive days, concrete shall be delivered to meet the following temperature immediately after placement:

Minimum Concrete Temperature	
Section Size	Min. Temperature
<12"	55°F
12"-36"	50°F
36"-72"	45°F
>72"	40°F

3.03 Placing Concrete

- A. Place concrete in accordance with ACI 318.
- B. Notify Engineer a minimum of 24 hours prior to concrete placement.
- C. Ensure reinforcement, inserts, embedded parts, formed expansion joints and contraction joints are not disturbed during concrete placement.
- D. Deposit concrete as close as practical to its final position. Do not drop concrete more than five feet vertically.
- E. Place concrete continuously between predetermined construction joints.
- F. Do not interrupt the placement. Do not permit cold joints.
- G. Thoroughly consolidate concrete by suitable means during placement. Thoroughly work concrete around reinforcement and embedded items and into corners of forms.

3.04 Joints

- A. Construction Joints: Joints that are placed at the end of a days work. In slabs they may be placed to permit movement and/or to transfer load.
- B. Expansion Joints: Joints that separate or isolate slabs from other parts of the structure such as walls, footings, columns, and equipment bases and drives and sidewalks from stairs, walls, light poles and other obstructions. Separate slabs on grade from vertical concrete surface with 1/2- inch preformed joint filler. Filler shall extend the full depth of the concrete with the top slightly lower than the concrete surface.
- C. Control Joints: Joints in slabs to create planes of weakness so that cracks will occur at desired locations.
 1. Provide joints to form panels or patterns as indicated on the Drawings. If joints are not shown, consult Engineer for joint placement.
 2. Inserts: Form 1/4 inch wide joints, one-fourth the depth of the slab thickness (one inch minimum) by inserting pre-molded hardboard or fiberboard strips into the fresh concrete. The top surface of the strip shall be flush with the slab surface. After concrete has cured for a minimum of seven days remove inserts and clean loose debris from the joints.
 3. Sawed Joints (Normal): Saw joints as soon after concrete is set sufficiently to preclude raveling during sawing and before shrinkage cracking takes place. Saw joints no later than 24 hours after concrete placement. Joints shall be 1/8 inch wide and one-fourth the slab thickness (one inch minimum).
 4. Sawed Joints (Early Entry): Saw joints using the "SOFF-CUT System" or equal. Cut as soon as the slab will support the weight of the saw and the operator (normally within two hours). Joints shall be 1/8 inch wide and ten percent of the slab thickness (depth shall be at least equal to the largest aggregate size).

3.05 Concrete Finishing

- A. Provide finish in accordance with ACI 301, Section 5.

- B. Unless indicated otherwise, provide a broom finish for concrete for curb and gutter, sidewalk, and exterior slabs. Immediately after the concrete has been floated, give the surface a course scored texture using a broom.

3.06 Curing and Protection

- A. General:
 - 1. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
 - 2. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 3. Cover concrete with polyethylene if rain is eminent.
 - 4. Cure concrete in accordance with ACI 308.
- B. Liquid Membrane-Forming Curing Compound (Curb and Gutter):
 - 1. Apply after finishing as soon as the free water on the surface has disappeared and no water sheen is visible, but not so late that the curing compound will be absorbed into the concrete.
 - 2. Apply at a uniform rate of 200 sq. ft. per gallon. When feasible, apply in two applications at right angles to each other with the second coat being applied within 30 minutes of the first.
 - 3. Coat edges within 30 minutes of form removal.
- C. Curing/Sealing Compound (Sidewalk):
 - 1. Cure and seal concrete with a uniform coating of membrane curing/sealing compound.
 - 2. Apply with sprayer in accordance with the manufacturer's printed instructions.
 - 3. Apply two coats at right angles to each other.
 - 4. Do not apply if the temperature of the concrete is less than 40°F.
 - 5. Protect concrete from all traffic for three days and from vehicular traffic for seven days.

3.07 Field Quality Control

- A. Sampling and testing shall be the responsibility of the Contractor. See Section 01 45 16 Testing Requirements.
- B. Provide free access to Work and cooperate with testing personnel.
- C. Four concrete test cylinders will be taken for every 75 or less cubic yards of each class of concrete placed in one day. Test cylinders will be lab cured. One test cylinder will be broken at 7 days, two at 28 days and one will be held.
- D. Engineer may require the casting additional test cylinders for field curing when cold or hot weather may affect curing.
- E. One slump test, one air test and concrete temperature will be taken for each set of test cylinders.
- F. Sampling and testing will be performed in accordance with the following:
 - 1. Concrete samples: ASTM C172.
 - 2. Test cylinders: ASTM C31.
 - 3. Slump tests: ASTM C143.
 - 4. Air test: ASTM C231.
- G. In addition to providing test results to the Engineer, provide the test results to the concrete supplier.

3.08 Patching

- A. Allow Engineer to inspect concrete surfaces immediately upon removal of forms.
- B. Honeycomb, embedded debris, and tie holes are not acceptable.
- C. Patch imperfections in accordance with ACI 301, Section 5.

3.09 Defective Concrete

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.

B. Repair or replacement of defective concrete will be determined by the Engineer.
END OF SECTION

SECTION 31 22 00

SITE PREPARATION AND EARTHWORK

PART 1 - GENERAL

1.01 Section Includes

- A. Clearing site of debris, grass, trees and other plant life in preparation for construction.
- B. Protection of existing structures, trees or vegetation to remain.
- C. Stripping of topsoil from areas to be incorporated into the work.
- D. Excavation, filling and compaction for site grading and paved surface subgrade preparation.

1.02 Related Sections

- A. Section 01 45 16 – Testing Requirements.

1.03 References

- A. ASTM D 1557 - Standard Test Methods Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- B. ASTM D2487 - Classification of Soils for Engineering Purposes.
- C. ASTM D2922 - Density of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth).
- D. ASTM D3017 - Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth).

1.04 Submittals

- A. Submit compaction test reports.

PART 2 - PRODUCTS

2.01 Materials

- A. Common Fill: On-site or off-site natural soil free from organic matter, debris, vegetation, stones larger than 6" and frozen material and classified in ASTM D2487 as follows:
 - GW - Well-graded gravels, gravel-sand mixtures, little or no fines.
 - GP - Poorly-graded gravels, gravel-sand mixtures, little or no fines.
 - GM - Silty gravels, gravel-sand-silt mixtures.
 - GC - Clayey gravels, gravel-sand-clay mixtures.
 - SW - Well-graded sands, gravelly sands, little or no fines.
 - SP - Poorly-graded sands, gravelly sands, little or no fines.
 - SM - Silty sands, sand-silt mixture.
 - SC - Clayey sands, sand-clay mixtures.
 - ML - Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
 - CL - Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.

- B. Breaker Run: Crushed stone meeting the following gradation:

5-Inch Breaker Run	
Sieve Size	% Passing by Weight
5 inch	90 - 100
1-1/2 inch	20 - 50
No. 10	0 - 10

3-Inch Breaker Run	
Sieve Size	% Passing by Weight
3 inch	90 - 100
1-1/2 inch	60 - 85
3/4 inch	40 - 65
No. 4	15 - 40
No. 10	10 - 30
No. 40	5 - 20
No. 200	2 - 12

- C. Geotextile: A geotextile fabric woven from polyester or polypropylene. The geotextile shall be insect, rodent, mildew, rot, and UV resistant. The geotextile shall have the following minimum requirements:

Geotextile Properties		
Property	Test Method	Requirement*
Grab Tensile Strength, lbs.	ASTM D4632	200
Elongation, %	ASTM D4632	15
Puncture, lbs.	ASTM D4833	120
Trapezoidal Tear, lbs.	ASTM D4533	80

*Minimum average roll value

Mirafi 500X, TenCate Geosynthetics; 80EX, Thrace-LINQ, Inc; Soiltex ST205N, Geo-Synthetics, Inc. or equal.

PART 3 - EXECUTION

3.01 Protection

- A. Locate and identify existing utilities that are to remain and protect them from damage.
- B. Protect trees, plants, structures, site improvements and features designated to remain.
- C. Protect bench marks, property corners and other survey monuments from damage or displacement.

3.02 Clearing

- A. Clear area within the clearing limits shown on the Drawings. If no clearing limits are shown, clear five feet outside of the grading limits, but not beyond project property boundaries.
- B. Remove trees, saplings, shrubs, bushes, vines and undergrowth within the clearing limits to the height above ground as follows:
 1. Trees over six inch diameter; six inches.
 2. Trees, shrubs and bushes under six inch diameter; three inches.
 3. Vines and undergrowth; two inches.

3.03 Grubbing

- A. Remove all stumps, main root balls and root systems to the minimum depths indicated:
 1. Beneath footings: 18 inches.
 2. Beneath paved roads, parking areas and walks: 24 inches below sub-grade.
 3. Beneath turf: 12 inches.
 4. In fill areas: 12 inches.

3.04 Topsoil Excavation

- A. Cut heavy growths of grass from areas to be stripped.
- B. Strip topsoil from all areas to be excavated, regraded or landscaped to a depth that prevents the intermingling of the topsoil with the subsoil.
- C. Topsoil is defined as surficial soil containing organic matter that sustains plant life.

- D. Stockpile the stripped topsoil on the site for reuse. If stockpile location is not shown on the Drawings, coordinate the location with the Engineer.
- E. Provide erosion protection for all stockpiled topsoil.

3.05 Pavement Removal

- A. Remove existing pavement and dispose of off-site. Removal of pavement will be considered incidental to the work unless indicated otherwise.
- B. Provide a straight, clean, vertical saw cut joint between pavement being removed and pavement to remain. Use power saw for cutting. Steel disk cutters mounted on power shovel bucket are not acceptable.

3.06 Lines and Grade

- A. Streets
 1. Construct the finish subgrade to the line, grade, and cross section as shown on the Drawings.
 2. The Engineer will provide grade stakes at a minimum distance of 50 feet along the centerline. Provide Engineer with a minimum of 48 hours notice of the need for grade stakes.
 3. Contractor may use slope meters or GPS type controls on machines for grade control. However, the contractor is responsible for verifying the finish grade elevations with a level at a minimum of every 50 feet along the centerline.
- B. Site Grading
 1. Construct the finish subgrade to contours shown on the Drawings.
 2. The Engineer will provide grade stakes as appropriate for the Work.
 3. Contractor may use slope meters or GPS type controls on machines for grade control. However, the contractor is responsible for verifying the finish grade elevations.

3.07 Grading and Subgrade Preparation

- A. Cut and fill to the required grades and cross section and contours.
- B. Scarify surface of cut areas and compact to the degree required for subsequent backfill.
- C. Place fill material in continuous layers not exceeding 8" compacted thickness.
- D. For proposed streets and parking lots, roll the surface with a steel drum roller to provide a relatively impervious surface where additional filling or excavation is necessary or placement of base course will be delayed.
- E. Maintain surface drainage during construction.
- F. Remove excess material from site. If borrow is needed, provide material meeting requirements of 2.01 for common fill.
- G. Grading contractor shall grade roads and other surfaces to be paved to rough subgrade elevation prior to installation of utilities. After utility installation, the grading contractor shall grade to finish subgrade elevation.
- H. Prior to placement of topsoil, areas that have been compacted by construction traffic shall be scarified to a minimum depth of 12 inches using a chisel plow or ripper arms on a dozer. Scarifying shall be performed along the contour.

3.08 Compaction

- A. Adjust moisture content of fill material to accomplish the required degree of compaction.
- B. Use a sheepsfoot roller for cohesive soils and a smooth drum vibratory roller for granular soils.
- C. Compact to the percent of maximum dry density as listed below in accordance with ASTM D1557.

Compaction Requirements		
Area	Cohesive Soils	Granular Soils
Beneath Turf	85%	85%
Beneath Walks & Curbs	90%	95%
Beneath Paving	90%	95%
Building Pad Area	90%	95%
Storm Water/Treatment Pond Berms	90%	95%

3.09 Proof Rolling

- A. Proof roll the finished pavement subgrade in the presence of the Engineer. Provide 24-hour notice to the Engineer as to when the proof-rolling will be performed.
- B. Prior to proof rolling, the entire roadway subgrade shall have a relatively smooth surface, suitable for observing soil reaction during proof rolling.
- C. Provide a loaded tri-axle dump truck with a minimum gross weight of 30 tons.
- D. Proof rolling shall be accomplished in a series of traverses parallel to the centerline of the street or parking area. The truck shall traverse the length of the street or parking area once for each 12 feet of width. Additional passes may be directed by the Engineer.
- E. Soft areas, yielding areas, cracked areas, or areas where rolling or wave action is observed shall be considered indicative of unsatisfactory subgrade. Such areas shall be undercut, replaced with suitable fill material, and recompacted.
- F. Once the subgrade has been proof rolled and approved, protect the soils from becoming saturated, frozen, or adversely affected.

3.10 Subgrade Stabilization

- A. If ordered by the Engineer or if indicated in the Contract Documents, subgrade material that cannot be adequately compacted shall be removed and replaced with breaker run material and/or geotextile.
- B. The depth of the undercut, breaker run size, and/or geotextile requirement will be at the discretion of the Engineer.
- C. Unless otherwise indicated within the contract documents, subgrade stabilization with breaker run material will be paid for by the in-place cubic yard including excavation, furnishing and placement of breaker run material, and disposal of undercut material.

3.11 Geotextile Placement

- A. Clear area of sharp objects, stumps, and large stones that would puncture geotextile.
- B. Roll geotextile onto the subgrade by hand in the longitudinal direction. Overlap adjacent strips two feet.
- C. Back-dump aggregate onto the geotextile beginning at a point just before the fabric and on firm soil. No vehicular traffic will be allowed directly on the geotextile. Spread the aggregate with a bulldozer. The first lift shall be as thick as possible to prevent over-stressing of the subgrade.
- D. Take care during aggregate placement to prevent damage to the geotextile. Repair damages or tears by placing a piece of geotextile over the damaged area. Overlap the repair piece onto the undamaged area a minimum of three feet.
- E. Compaction: Perform initial compaction with bulldozers while spreading. Perform final compaction with a vibratory compactor, first without vibration for several passes, followed with vibration. Do not grade down ruts; fill with additional aggregate and compact.

3.12 Tolerances

- A. Top Surface of Road Subgrade:
 - 1. Rough Grade: Plus or minus 0.25 ft.
 - 2. Finish Subgrade: Plus or minus 0.05 ft.
- B. Top Surface of General Grading: Plus or minus 0.1 ft.

3.13 Field Quality Control

- A. Field inspection will be performed by an authorized representative of the Owner.
- B. Contractor is responsible for meeting the compaction requirements. The Contractor shall hire and pay for an independent testing firm to perform compaction tests to confirm the in-place density.
- C. For general grading, perform one test per 9,000 square yards or part thereof of fill placed per lift. In addition, perform one test per building lot where fill is placed. For streets perform one test per 1,000 square yards or part thereof of fill placed per lift. Engineer or Owner's Representative will direct location of tests.
- D. Additional tests may be required if compaction requirements are not being met. The cost of these additional tests are the responsibility of the Contractor.
- E. Determination of moisture content shall be in accordance with ASTM D3017. Determination of density shall be in accordance with ASTM D2922.

3.14 Disposal

- A. Dispose of all plant material off-site at a location meeting state landfill requirements.
- B. Burning at the site will not be permitted.
- C. Dispose of excess soil materials or unsuitable material off-site unless on-site disposal is indicated, or approved by Owner.

END OF SECTION

SECTION 31 25 00

CONSTRUCTION SITE EROSION CONTROL

PART 1 - GENERAL

1.01 Section Includes

- A. Furnishing, installing, maintaining, and removing erosion and sediment control facilities and measures.
- B. The contractor is responsible for providing all erosion control facilities and measures necessary to control erosion and sedimentation at the work site. These facilities and measures may or may not be shown on the Drawings and their absence on the Drawings does not alleviate the contractor from providing them. Any measures and facilities shown on the Drawings are the minimum actions required.

1.02 References

- A. WDNR Technical Standards - See DNR website @ <http://dnr.state.wi.us/org/water/wm/nps/stormwater/techstds.htm>.
- B. Wisconsin Department of Transportation, Erosion Control, Product Acceptability Lists for Multi-Modal Applications PAL, Current Edition.

1.03 General

- A. Requirements of WDNR Technical Standards shall be followed at all times.
- B. Use surface water and erosion control facilities and measures throughout the duration of the construction activity to control the movement of surface water and to reduce the potential for erosion. Maintain the facilities and measures until permanent vegetation is established.
- C. Eroded soil material shall not be allowed to leave the construction site or to enter a waterway, lake, or wetland.
- D. The Contractor shall be responsible for furnishing, installing, and maintaining the erosion control facilities, and in general, shall use construction practices that minimize erosion.
- E. Eroded material that has left the construction site shall be collected and returned to the site by the Contractor.
- F. Prevent construction site tracking with graveled roads, access drives, and parking areas of sufficient width and length to prevent sediment from being tracked onto public and private roadways. Any sediment reaching a public or private road shall be removed by street cleaning (not flushing) before the end of each workday.

1.04 Sequencing and Scheduling

- A. Construct and stabilize erosion control measures for diversions or outlets prior to any grading or disturbance of the construction site.
- B. Install filter fabric and straw bale fences and barriers prior to disturbing the area.
- C. Turf areas that have been completed to finish grade shall be stabilized with permanent seeding within seven days. Turf areas where activity has ceased and that will remain exposed for more than 20 days before activity resumes and soil stockpiles shall be stabilized with temporary seeding or soil stabilizer.
- D. Other erosion control measures shall be in place prior to disturbance of the construction site, as applicable.

PART 2 - PRODUCTS

2.01 Silt Fence

- A. Fabric shall be a woven or nonwoven polyester, polypropylene, stabilized nylon, or polyethylene geotextile with the following minimum properties:

Property	Test Method	Requirement*
Grab tensile strength, lbs min. Machine direction Cross direction	ASTM D4632	120 100
Max. Apparent opening size, US Sieve	ASTM D 4751	No. 30
Permittivity, sec ⁻¹ , min.	ASTM D4491	0.05
Min. UV stability at 500 Hrs, %	ASTM D4355	70%

* Minimum or maximum average roll values.

2.02 Straw Bales

- A. Straw or hay bales in good condition with nominal dimensions of 14"W x 18"H x 30"L.
- B. Stakes: Wood stakes with minimum nominal dimension of 2" x 2" x 30".

2.03 Sediment Logs

- A. Wood excelsior log wrapped in biodegradable fabric or mesh and listed in the Erosion Control Product Acceptability Lists.
- B. Stakes: Wood stakes with minimum nominal dimension of 1" x 1" x 24".

2.04 Temporary Seed

- A. Areas needing protection during periods when permanent seeding is not applied shall be seeded with annual species for temporary protection. Provide species as follows:

Species	% Purity
Oats	98
Cereal Rye	97
Winter Wheat	95
Annual Ryegrass	97

- B. Provide oats for spring and summer. Provide cereal rye, winter wheat, or annual ryegrass for fall seeding.

2.05 Erosion Mat

- A. All erosion mat products shall be of the class and type indicated and shall be chosen from the Erosion Control Product Acceptability Lists.
- B. Class I: A short-term duration (six months or greater), light duty, organic mat. Netting shall be non-organic, photodegradable or biodegradable netting. The weight of the netting shall not exceed 15% of the total blanket weight. The netting shall be sufficiently bonded to the parent material to prevent separation for the life of the product.
 - 1. Type A: A netted product for use on slopes 2.5 to 1 or flatter with a minimum product permissible shear stress of 50 Pa (1.0 lbs/ft²). Not to be used in channels.
 - 2. Type B: A double netted product for use on slopes 2 to 1 or flatter or in channels with a minimum product permissible shear stress of 70 PA (1.5 lbs/ft²).
- C. Class II: A long-term duration (3 years or greater), organic mat. The weight of the netting shall not exceed 15% of the total blanket weight. The netting shall be bonded sufficiently to the parent material to prevent separation of the net from the parent material for the life of the product.
 - 1. Type A: Jute fiber only to be used for reinforcing sod.
 - 2. Type B: For use on slopes 2:1 or flatter, or in channels with a minimum product permissible shear stress of 95 Pa (2.0 lbs/ft²). Non-organic, photodegradable, or biodegradable netting

- 3. allowed.
- 3. Type C: For use on slopes 2:1 or flatter, or in channels with a minimum product permissible shear stress of 95 Pa (2.0 lbs/ft²). Only 100% organic fibers allowed. Woven mats are allowed with a maximum opening of ½ inch. Use in environmentally sensitive areas that have a high probability of entrapping animals in the plastic netting.
- D. Staples: U-shaped No. 11 gauge or greater wire with a span width of one to two inches and a length of not less than 6 inches for firm soil and 12 inches for loose soil.

2.06 Soil Stabilizer

- A. Soil stabilizer shall be a polyacrylamide (PAM) and calcium solution intended to reduce the erodibility of bare soils. The product shall achieve an 80% reduction in soil loss induced by a two inch per hour rainfall simulator.
- B. PAM mixtures shall be environmentally benign, harmless to fish, aquatic organisms, wildlife, and plants. Only anionic PAM will be permitted.
- C. Anionic PAM, in pure form shall have no more than 0.05% free acrylic monomer by weight, as established by the Food and Drug Administration and the Environmental Protection Agency. The anionic PAM in pure form shall not exceed 200 pounds per batch.
- D. The product provided shall be listed in the WisDOT PAL for Type B Soil Stabilizer.

2.07 Inlet Protection

- A. Type A: Use around field inlets until permanent stabilization methods have been established. Use on pavement inlets prior to installation of curb and gutter or pavement.
- B. Type B: Use on inlets without curb head after casting and grate are in place.
- C. Type C: Use on street inlets with curb head.
- D. Type D: Use in areas where other typed of inlet protection are incompatible with roadway and traffic conditions causing possible safety hazards when ponding occurs at inlet.
- E. Geotextile: Type FF meeting the requirements of the latest edition of WisDOT PAL.

PART 3 - EXECUTION

3.01 Installation of Diversions

- A. Temporary diversions shall be designed and installed in accordance with WDNR Conservation Practice Standard, Construction Site Diversion (1066).

3.02 Installation of Silt Fence and Straw Bale Barriers

- A. Install straw bale barriers and sediment logs in accordance with the Drawings and WDNR Conservation Practice Standard, Sediment Bale Barrier (1055).
- B. Install silt fence in accordance with the Drawings and WDNR Conservation Practice Standard, Silt Fence (1056).
- C. Silt fence and straw bale barriers shall be placed on the contour to the extent practicable. Place fences parallel to the slope with the ends of the fence turned upslope a distance of one to two feet. The parallel spacing shall not exceed the maximum slope lengths as indicated in the following Table:

Fence and Barrier Spacing	
Slope	Spacing
<2%	100'
2 - 5%	75'
5 - 10%	50'
10 - 33%	25'

>33%	20'
------	-----

3.03 Temporary Seeding

- A. Provide a seedbed of loose soil to a minimum depth of 2 inches.
- B. Apply seed evenly at the rate shown in the following table. Rake or drag to cover the seed to a depth of 1/4 inch.

Species	Lbs./Acre
Oats	131
Cereal Rye	131
Winter Wheat	131
Annual Ryegrass	80

3.04 Erosion Mat Installation

- A. Remove stones, clods, sticks, or other foreign material that would damage the mat or interfere with the mat bearing completely on the surface.
- B. Install erosion mat in accordance with the manufacturer's recommendations.
- C. After seeding has been completed, roll blankets out parallel to the direction of water flow, with the netting on top. Spread the blankets without stretching, making sure the fibers are in contact with the soil. Overlap adjacent strips in accordance with the manufacturer's recommendations. Overlap strip ends a minimum of 10 inches with the upgrade strip on top. Bury the upgrade end of each strip in a vertical trench at least 6 inches deep.
- D. Staple the mat strips in accordance with the manufacturer's recommendations. Staple longitudinal overlaps and outer edges at maximum intervals of 3 feet. Staple strip ends at maximum intervals of 16 inches. Place staples throughout the mat at maximum 3-foot intervals. Insert staples flush with the ground surface.

3.05 Soil Stabilizer

- A. The manufacturer shall provide detailed written instructions on the storage, mixing, and application procedures.
- B. The soil stabilizer may be applied by spraying or by dry spreading.
- C. Application Rates: Apply at the rate recommended by the manufacturer.
- D. Do not apply within 30 feet of body of water (i.e. lake, river, stormwater pond).

3.06 Ditch Erosion Control

- A. The following erosion control measures are minimum requirements for all ditches. The Drawings may include more specific measures.

Ditch Erosion Control		
Slope Range	Method	Bale Checks
0 - 1%	Seed and mulch	None
1% - 4%	Seed and mulch with erosion mat	1% - 2%; Every 200' 2% - 4%; Every 100'
4% - 6%	Staked sod	Every 75'
>6%	Staked sod and/or riprap as specified by Engineer on Drawings	Every 75' for sod

- B. Stone Ditch Checks: Unless otherwise indicated on the Drawings, install stone ditch checks at intervals of one ditch check for every two feet of drop in channel grade.

3.07 Installation of Sod in Ditches

- A. Lay sod so that joints of abutting ends of strips are not continuous. Lay each strip snugly against previously laid strips.
- B. Roll or firmly tamp sod to press the sod into the underlying soil.
- C. Turn the upper edges of the strips into the soil.
- D. Stake strips along the longitudinal axis at 18-inch intervals and near the top edge of the strip. Provide wood lath or similar stakes, 12 inches long. Leave top of stake approximately 1/2 inch above sod surface.

3.08 Installation of Other Facilities

- A. Inlet protection barriers, channel stabilization, grassed waterways, rock lined waterways, sediments traps, sediment basins, and other forms of erosion control measures shall be designed and installed in accordance with *WDNR Technical Standards*.

3.09 Maintenance

- A. Inspect diversions within 24 hours after each rainfall or daily during periods of prolonged rainfall, until the vegetative cover is stabilized. Make necessary repairs immediately.
- B. Inspect filter fabric fences and barriers within 24 hours after each rainfall or daily during periods of prolonged rainfall. Necessary repairs or replacement shall be made immediately. Remove sediment deposits when deposits reach one-half the height of the fence. Follow manufacturer's recommendations for replacing fabric due to weathering.
- C. Inspect straw bale fences and barriers within 24 hours after each rainfall or daily during periods of prolonged rainfall. Necessary repairs or replacement shall be made immediately. Remove sediment deposits when deposits reach one-third the height of the bales. Replace bales after three months.
- D. Inspect all seeding, sod, mulches, mats and nets within 24 hours after each rainfall or daily during periods of prolonged rainfall. Additional mulch, netting or matting shall be applied immediately when necessary to maintain suitable coverage. Make inspections until vegetative cover is established. Water seeding and sod when necessary to promote establishment.
- E. All other soil erosion control measures should be inspected and repaired immediately, if required, within 24 hours after storm event or daily during periods of prolonged rainfall.

3.10 Removal

- A. After final vegetation is established, remove bales, silt fences, ditch checks, diversions, and other erosion control facilities. Restore areas disturbed by the removals.

3.11 Monitoring for WPDES Permit

- A. Unless indicated otherwise within the Contract Documents, the Contractor shall be responsible for the monitoring requirements of the WPDES permit for storm water discharges associated with construction activities.
- B. Erosion and sediment controls shall be routinely inspected at least every seven days, and within 24 hours after a precipitation event of 0.5 inches or greater. Weekly written reports of all inspections shall be maintained and submitted to the Engineer. The reports shall contain the following information:
 - 1. Date, time, and exact place of inspection.
 - 2. Name(s) of individual(s) performing inspection.
 - 3. An assessment of the condition of erosion and sediment controls.
 - 4. A description of any erosion and sediment control implementation and maintenance performed.
 - 5. A description of the sites present phase of construction.

- C. The Engineer will provide the Contractor with the appropriate DNR form (see section 00 62 30) to use for the inspections.

END OF SECTION

SECTION 32 11 23

CRUSHED AGGREGATE BASE COURSE

PART 1 - GENERAL

1.01 Section Includes

- A. Furnishing and placing crushed aggregate base course as a foundation for asphaltic concrete pavement or Portland cement concrete pavement.

1.02 Related Sections

- A. Section 01 45 16 – Testing Requirements.

1.03 References

- A. ASTM C136 - Sieve Analysis of Fine and Coarse Aggregate.
- B. ASTM D1557 - Standard Test Methods Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft³ (2,700 kN-m/m³)).
- C. Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction, Current Edition (WisDOT).

1.04 Submittals

- A. Submit aggregate gradation; ASTM C136.
- B. Submit truck weight slips. Include as a minimum, truck number, date, time, gross weight, tare weight and net weight.

PART 2 - PRODUCTS

2.01 Crushed Aggregate

- A. Meet material requirements of WisDOT.
- B. Gradation
1. Except for reclaimed asphaltic pavement, conform to the gradations listed in the following table:

Sieve Size	Percentage Passing By Weight		
	3-Inch Base	1 1/4-Inch Base	3/4-Inch Base
3-Inch	90 - 100	---	---
1 1/2-Inch	60 - 85	---	---
1 1/4-Inch	---	95 - 100	---
1-Inch	---	---	100
3/4-Inch	40 - 65	70 - 93	95 - 100
3/8-Inch	---	42 - 80	50 - 90
No. 4	15 - 40	25 - 63	35 - 70
No. 10	10 - 30	16 - 48	15 - 55
No. 40	5 - 20	8 - 28	10 - 35
No. 200	2 - 12	2 - 12 ^{a, c}	5 - 15 ^b

- a. Limited to a maximum of 8 percent in base course placed between new and old pavement.
 - b. 8 - 15 percent passing when base is \geq 50% crushed gravel.
 - c. 4 - 10 percent passing when base is \geq 50% crushed gravel.
2. Use 1 1/4-Inch Base in top 4 or more inches of base. Use 3-Inch Base or 1 1/4-Inch Base in the lower base layers.
 3. Use 3/4-Inch Base in the top 3 inches of unpaved portion of the shoulder. Also, if using 3-Inch Base in the lower base layers, use 3/4-Inch Base in the top 3 inches of the shoulder foreslopes. Use 3/4-Inch Base or 1 1/4-Inch Base elsewhere in shoulders.

2.02 Reclaimed Asphaltic Pavement

- A. If Contract Documents allow reclaimed asphaltic pavement, the material shall conform to the following:
 - 100 percent passing a 1 1/4-inch sieve.
 - 75 percent or less passing a No. 4 sieve.
 - Asphalt content between 3 and 6.5 percent.

PART 3 - EXECUTION

3.01 Preparation

- A. Check subgrade for conformity with grade and cross section.
- B. Remove depressions and ruts that may have been caused after subgrade completion.
- C. Proof-roll subgrade prior to placing aggregate with a loaded tandem-axle dump truck under the observance of the Engineer. Subgrade shall not rut or displace significantly under the weight of the loaded truck. Soft or unstable areas that cannot be improved by additional compaction shall be undercut, replaced with suitable fill material, and recompacted.

3.02 Lines and Grade

- A. Construct the base course to the line, grade and cross section as shown on the Drawings or as directed by the Engineer.
- B. For streets without curb and gutter, the Engineer will provide grade stakes at a minimum distance of 50 feet along the centerline. For streets with curb and gutter, the Engineer will stake the curb and gutter and will provide centerline cuts and fills from the curb stakes. Provide Engineer with a minimum of 48 hours notice of the need for grade stakes.
- C. Contractor may use slope meters or GPS type controls on machines for grade control. However, the contractor is responsible for verifying the finish grade elevations with a level at a minimum of every 50 feet along the centerline.

3.03 Equipment

- A. The weight, type, capacity and method of operation of all hauling and spreading equipment shall be appropriate for the work and shall not damage the subgrade or previously laid base course. Spreading equipment shall be designed and operated to spread the material in uniform layers without significant segregation.
- B. Motor graders used for mixing and shaping shall have weight, rigidity and design suitable for the work.
- C. Compaction equipment shall be of the rolling type, vibratory type or combination thereof. Tamping rollers shall exert a weight of not less than 150 pounds per square inch of tamping surface on each tamping foot in a transverse row. Pneumatic-tire rollers or other equipment shall have a weight of not less than 150 pounds per linear inch of overall rolling width.

3.04 Placing Base Course

- A. Place material in a manner to minimize segregation and to facilitate spreading in a uniform layer.
- B. Place material in maximum 6-inch thick compacted layers. If material is placed in more than one layer, each layer shall be approximately the same thickness.
- C. Compact each layer to 95 percent of the maximum dry density in accordance with ASTM D1557. If material is deficient in moisture content for readily attaining the required density, moisten the material as necessary.
- D. All material placed on the subgrade or previous layer shall be spread, shaped and compacted on the same day.

3.05 Tolerances

- A. Smoothness: Maximum variation of 3/8 inch when measured with a 10-foot straight edge.
- B. Compacted Thickness: Plus or minus 1/4 inch.

3.06 Proof Rolling

- A. Proof roll the completed base course with a loaded tri-axle dump truck with a minimum gross weight of 30 tons. The surface shall not rut, displace, or roll under the weight of the loaded truck. Soft or unstable areas that cannot be improved by additional compaction shall be replaced and recompacted. Proof rolling shall be done in the presence of the Engineer.

3.07 Field Quality Control

- A. Contractor is responsible for meeting the compaction requirements. The Engineer or authorized representative of the owner has the option to require the Contractor to hire an independent testing firm, at the Contractor's expense, to perform compaction tests to confirm the in-place density.
- B. Field inspection will be performed by the Engineer or an authorized representative of the Owner.
- C. Determination of moisture content shall be in accordance with ASTM D3017. Determination of density shall be in accordance with ASTM D2922.
- D. If tests indicate the work does not meet the specified requirements, remove and replace the work.

END OF SECTION

SECTION 32 12 16

ASPHALTIC CONCRETE PAVEMENT

PART 1 - GENERAL

1.01 Section Includes

- A. Construction of a one or two course asphaltic concrete pavement to the thickness and cross-section indicated on the Drawings or in the written Bid Documents.
- B. Provide the mix indicated on the Drawings or in the written Bid Documents.

1.02 Related Sections

- A. Section 01 45 16 – Testing Requirements.

1.03 References

- A. State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, Current Edition (WisDOT).

1.04 Submittals

- A. Preconstruction Submittals
 - 1. Submit mix design, meeting all necessary criteria for all mixtures to be used on the project. Conduct the mix design in accordance with WisDOT 460.
- B. Construction Submittals:
 - 1. Submit density testing records.
 - 2. Submit truck weight slips.

1.05 Quality Assurance

- A. Qualifications of Asphalt Producer: Use only materials which are furnished by a bulk asphalt concrete producer regularly engaged in the production of hot-mix, hot-laid asphalt concrete.
- B. Qualifications of Testing Agency: Use only recognized commercial-testing laboratory experienced in testing asphalt concrete materials.

1.06 Job Conditions

- A. Weather Limitations
 - 1. Asphalt concrete surface course material shall not be placed during the calendar period between November 1st and April 15th except with written approval of Engineer of a cold weather paving plan provided by the Contractor.
 - 2. Asphalt concrete material shall not be placed when air temperature is less than 36°F as measured 3 feet above the ground in the shade and away from the effects of artificial heat.
 - 3. Asphalt concrete materials shall not be placed on frozen or excessively wet base course or when it is raining.
- B. Traffic Control
 - 1. Maintain vehicular and pedestrian traffic during paving operations as required for other construction activities.
 - 2. Provide flagmen, barricades, warning signs and lights as needed to provide for safety and movement of traffic.

PART 2 - PRODUCTS

2.01 Asphaltic Mixture Design

- A. Conduct the asphaltic mixture design in accordance with WisDOT Table 460-2. Mixture requirements are as follows:

Mixture Type	LT	MT
ESALs x 10 ⁶ (20 yr design life)	< 2	2 to < 8
LA Wear (AASHTO T 96)		
100 revolutions (max % loss)	13	13
500 revolutions (max % loss)	50	45
Soundness (AASHTO T 104) (sodium sulfate, max % loss)	12	12
Freeze/Thaw (AASHTO T 103) (specified counties, max % loss)	18	18
Fractured Faces (ASTM D5821) (one face/2 face, % by count)	65 / ___	75 / 60
Thin or elongated (ASTM D4791) (max % by weight)	5 (5:1 ratio)	5 (5:1 ratio)
Fine Aggregate Angularity (AASHTO T 304, Method A, min)	40	43
Sand Equivalency (AASHTO T 176, min)	40	40
Gyratory Compaction		
Gyrations for N _{ini}	6	7
Gyrations for N _{des}	40	75
Gyrations for N _{max}	60	115
Air Voids, %V _a	4.0 ⁽⁶⁾	4.0 ⁽⁶⁾
% G _{mm} @ N _{des}	96.0	96.0
% G _{mm} @ N _{ini}	≤91.5 ⁽¹⁾	≤89.0 ⁽¹⁾
% G _{mm} @ N _{max}	≤98.0	≤98.0
Dust to Binder Ratio ⁽²⁾ (% passing 0.075/P _{be})	0.6 - 1.2	0.6 - 1.2
Voids filled with Binder (VFB or VFA, %)	60 - 80 (4, 5)	65 - 75 (3, 4)
Tensile Strength Ratio - TSR (ASTM D4867)		
no antistripping agent	0.75	0.75
with antistripping agent	0.80	0.80
Draindown at Production Temperature (%)	-----	-----

- (1) The percent maximum density at initial compaction is only a guideline.
- (2) For a gradation that passes below the boundaries of the caution zone (ref. AASHTO MP3), the dust to binder ratio limits are 0.6 - 1.6.
- (3) For 9.5 mm and 12.5 mm nominal maximum size mixtures, the specified VFB range is 70 - 76%.
- (4) For 25.0 mm nominal maximum size mixtures, the specified VFB lower limit is 67%.
- (5) For 37.5 mm nominal maximum size mixtures, the specified VFB lower limit is 67%.
- (6) Shall conform to current WisDOT ASP 6, 460.2.1, which includes the regression of air voids from 4.0% to 3.0% with asphalt cement.

2.02 Aggregate

- A. Provide aggregate conforming to WisDOT Table 460-1. Aggregates shall consist of hard durable particles and shall not contain more than a combined total of one percent, by mass, of lumps of clay, loam, shale, soft particles, organic matter, adherent coatings, and other deleterious matter. The composite aggregates shall conform to the requirements of the Mixture Requirements Table and the Aggregate Gradation Table.

Aggregate Gradation Percent Passing By Weight				
Sieve Size	25.0 mm (#2)	19.0 mm (#3)	12.5 mm (#4)	9.5 mm (#5)
37.5 mm	100	---	---	---
25.0 mm	90 - 100	100	---	---
19.0 mm	90 max	90 - 100	100	---
12.5 mm	---	90 max	90 - 100	100
9.5 mm	---	---	90 max	90 - 100
4.75 mm	---	---	---	90 max
2.36 mm	19 - 45	23 - 49	28 - 58	20 - 65
75 um	1 - 7	2 - 8	2 - 10	2 - 10
% Min VMA	12.0	13.0	14.0	15.0

- B. Unless otherwise designated in the contract, the nominal size of aggregate used in the mixture shall conform to the following:

Pavement Thickness	Aggregate Size	
	Binder	Surface
3"	12.5 mm	9.5 mm
3 1/2"	12.5 mm	12.5 mm
4"	19.0 mm	12.5 mm
4 1/2"	19.0 mm	12.5 mm
5"	19.0 mm	12.5 mm

2.03 Asphalt Cement

- A. PG 58-28 S or H.
 B. Tack Coat: Emulsified asphalt - Grade SS-1; WisDOT 455.2.5

2.04 Recycled Asphaltic Materials

- A. Recycled Asphalt Shingles can be used as follows: 5-7% binder, 2% surface. WisDOT 460.2.5

2.05 Recovered Asphaltic Binders

- A. WisDOT 460.2.6

PART 3 - EXECUTION

3.01 Lines and Grade

- A. Lines and grade shall be as shown on the drawings or as given by the Engineer.
 B. When curb & gutter is in place, the Contractor shall use the curb & gutter for line and grade. For streets without curb and gutter, the Engineer will provide grade stakes at a minimum distance of 50 feet along the centerline. Provide the Engineer with a minimum 48 hours' notice of the need for grade stakes.
 C. Parking lots will be staked as required.

3.02 Surface Preparation

- A. Proof Roll
 1. Proof-roll prepared base surface using heavy rubber-tired roller or loaded tandem-axle dump truck under the observance of the Engineer. Aggregate surface shall not rut or displace significantly under the weight of the equipment. Soft or unstable areas that cannot be improved by additional compaction shall be undercut, replace with suitable fill material, and recompact.
 2. Do not begin paving until necessary corrections are made.

- B. Loose and Foreign Material
 1. Remove loose and foreign materials from compacted base or old surface course immediately before paving.
 2. Use power brooms or blowers and hand brooming as required.
- C. Tack Coat (WisDOT 455.3.2.1)
 1. Dilute material with equal parts of water and apply to contact surfaces of previously constructed asphalt concrete or Portland cement concrete and similar surfaces.
 2. Apply at a rate of 0.05-0.07 gallons per square yard of surface with a power distributor.
 3. Apply only when air temperature is 36° F or higher.
 4. Apply tack coat by brush to contact surfaces of curbs, gutters, manholes and other structures projecting into or abutting asphalt concrete pavement.
 5. Apply tack coat between all layers. This work shall be incidental to the asphalt paving.
- D. Existing Pavement Correction
 1. Fill potholes, sags and depressions.
 2. Material may be placed by hand.

3.03 Frame Adjustments

- A. Prior to paving, set frames of subsurface structures to final grade. Covers shall be one-half inch below surface of adjacent pavement with the tops of manholes the same slope as the surrounding pavement.

3.04 Preparing the Mixture

- A. Comply with applicable sections of WisDOT 450 for material storage, control, mixing and for plant equipment and operation.

3.05 Equipment

- A. Provide size and quantity of equipment to complete the work specified within the project time schedule.
- B. Paving shall be placed with a self-propelled spreading and finishing machine that spreads the hot-asphalt concrete mixture without tearing, shoving or gouging the surface and that controls pavement edges to true lines without use of stationary forms.
- C. Rolling equipment shall be self-propelled steel-wheel rollers of the three-wheel, tandem or three-axle tandem type. Three-wheel and tandem rollers shall be rated at not less than 8 tons. Three-axle tandem rollers shall be rated at not less than 12 tons.

3.06 Placing the Mix

- A. Do not place asphaltic mixture when the air temperature approximately three feet above grade, in shade, and away from artificial heat source is less than 36°F.
- B. Place asphalt concrete mixture on prepared surface, spread and strike off using paving machine.
- C. Spread mixture at a temperature between 250°F and 350°F.
- D. Inaccessible and small areas may be placed by hand.
- E. Place each course at thickness so that when compacted, it will conform to the indicated grade cross section, finish thickness and density specified.

F. Compacted Thickness of Individual Layers:

Pavement Thickness	Layer Thickness	
	Binder	Surface
3"	1 1/2"	1 1/2"
3 1/2"	1 3/4"	1 3/4"
4"	2 1/4"	1 3/4"
4 1/2"	2 3/4"	1 3/4"
5"	3"	2"

- G. Paver Placing
 1. Unless otherwise directed, begin placing along centerline of areas to be paved on crowned section and at high side of sections on one-way slope and in direction of traffic flow.
 2. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips.
 3. Complete binder course for a section before placing surface course.
- H. Hand Placing
 1. Spread, tamp and finish mixture using hand tools in areas where machine spreading is not possible.
 2. Place mixture at a rate that will ensure handling and compaction before mixture becomes cooler than acceptable working temperature.
- I. Joints
 1. Carefully make joints between old and new pavements or successive day's work to ensure a continuous bond between adjoining work.
 2. Clean contact surfaces free of sand, dirt or other objectionable material, and apply tack coat.
 3. Cut back edge of previously placed course to expose an even, vertical surface for full course thickness.

3.07 Compacting the Mix

- A. While the mixture is still hot, compact thoroughly and uniformly by rolling. Provide sufficient number of rollers to obtain the required density and accomplish the rolling.
- B. Begin rolling operations as soon after placing as the mixture will bear weight of roller without excessive displacement.
- C. Do not permit heavy equipment, including rollers, to stand on finished surface before it has thoroughly cooled or set.
- D. Compact mixture with hot hand tampers or vibrating plate compactors in areas inaccessible to rollers.
- E. Start rolling longitudinally at extreme lower side of sections and proceed toward center of pavement. Roll to slightly different lengths on alternate roller runs.
- F. Do not roll centers of sections first.
- G. Breakdown Rolling
 1. Accomplish breakdown or initial rolling immediately following rolling of transverse and longitudinal joints and outside edge.
 2. Check crown grade and smoothness after breakdown rolling.
 3. Repair displaced areas by loosening at once with lutes or rakes and filling, if required, with hot loose material before continuing rolling.
- H. Second Rolling
 1. Follow breakdown rolling as soon as possible while mixture is hot and in condition for compaction.
 2. Continue second rolling until mixture has been thoroughly compacted.
- I. Finish Rolling
 1. Perform finish rolling while mixture is still warm enough for removal of roller marks.
 2. Continue rolling until roller marks are eliminated and course has attained specified density.

3.08 Pavement Density

- A. Pavements shall be built with the Maximum Density Method, WisDOT 460.3.3, unless otherwise specified.
- B. Ordinary Compaction: Compact leveling, wedging, patching layers, driveways, and other non-traffic areas to the degree that no further appreciable consolidation is evidenced under the action of the compaction equipment. Comply with WIDOT 450.3.2.6.

- C. Maximum Density Method: All courses or layers thereof of plant mixed asphaltic mixtures for which the Maximum Density Method is used shall be compacted to a density not less than the percentage shown in the Table of Maximum Required Density, WisDOT Table 460-3, for the applicable mixture and course.

3.09 Pavement Density Determination

A. General

1. Density testing shall be performed by an independent testing firm, hired by the contractor or by a trained and qualified employee of the Contractor if approved by the Engineer. Densities may be determined on the basis of cored/sawed holes or nuclear methods.
2. Density determination will be made as soon as practical after placement and compaction and prior to placement of subsequent layers. Do not re-roll compacted mixtures represented by samples or tests having deficient densities. Do not operate below the specified maximum density on a continuing basis. Stop production until the source of the problem is determined and corrected.
3. A lot shall represent 1500 lineal feet of mixture, or the quantity placed in one day if less than 1500 lineal feet, for each density requirement. Densities of binder and surface course mixtures shall be determined on the basis of nuclear methods. Random testing locations will be established by the Engineer.

- B. Tests: Five random tests will be taken on each lot. The lot density shall be the average of all samples taken.

- C. Compact all layers to the percent of the target maximum density as shown in the following table.

Minimum Required Density ⁽¹⁾		
Location	Layer	% of Target Maximum Density
		Mixture Type
		LT and MT
Traffic Lanes ⁽²⁾	Lower	93.0 ⁽³⁾
	Upper	93.0
Shoulders and Appurtenances	Lower	91.0
	Upper	92.0

- (1) The table values are for average lot density. If any individual test result falls more than 3% below the minimum required target maximum density, the engineer may investigate the acceptability of that material.
- (2) Includes parking lanes as determined by engineer.
- (3) Minimum reduced by 2% when the first lift of lower layer constructed on crushed aggregate or recycled base courses.

- D. Density Deficiency: When the density of a lot of compacted binder or surface course is less than the specified minimum, payment will be adjusted in accordance with the following table:

Adjusted Payment Schedule	
Percent Lot Density Below Specified Minimum	Percent of Contract Price
From 0.5 to 1.0 inclusive	98
From 1.1 to 1.5 inclusive	95
From 1.6 to 2.0 inclusive	91
From 2.1 to 2.5 inclusive	85
From 2.6 to 3.0 inclusive	70
More than 3.0	*

- * The lot shall be removed and replaced with a mixture at the specified density and, when acceptably replaced, will be paid for at the contract price; or the engineer may permit the unacceptable material to remain in place with a 50 percent reduction in payment.

3.10 Surface and Thickness Requirements

A. Surface Requirements

1. Provide final surface of uniform texture conforming to required grade and cross-section.

2. Test finished surface of each asphalt concrete course for smoothness using a 10-foot straightedge applied parallel to and at right angles to centerline of paved area.
 3. Check surface areas at intervals directed by Engineer.
 - a. Binder course: 1/4 inch in 10 feet.
 - b. Surface course: 1/4 inch in 10 feet.
- B. Thickness Requirements
1. If the Engineer believes that the thickness of the compacted base or surface course is not at the specified thickness, the Contractor may be required to obtain 4-inch diameter samples to verify the thickness. The samples shall be obtained by sawing or coring and all sample holes shall be repaired with fresh mix and compacted.
 2. If the thickness is not as specified it will be the Engineer's option to adjust the contract price, require an overlay, or require some other remedial action.

3.11 Patching

- A. Remove and replace defective areas.
1. Cut out and fill with fresh hot-asphalt concrete.
 2. Compact by rolling to specified density and surface smoothness.
 3. Remove deficient areas for full depth of course.
 4. Cut sides perpendicular and parallel to direction of traffic with edges vertical.
 5. Apply tack coat to exposed surfaces before placing new asphalt concrete mixture.

3.12 Cleaning and Protection

- A. After final rolling, do not permit vehicular traffic on asphalt concrete pavement until it has cooled and hardened and, in no case, sooner than 6 hours.
- B. Provide barricades and warning devices as required to protect pavement and the general public.

END OF SECTION

SECTION 32 16 13
CONCRETE CURB AND GUTTER

PART 1 - GENERAL

1.01 Section Includes

- A. Subgrade preparation.
- B. Aggregate base course.
- C. Furnishing, placement and finishing of concrete curb, gutter and curb and gutter as directed by PW Project Manager to replace existing curb found to be in disrepair. See Unit Pricing.

1.02 Related Sections

- A. Section 03 31 01 – Sitework Concrete

1.03 References

- A. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- B. ASTM A616 - Rail-Steel Deformed and Plain Bars for Concrete Reinforcement.
- C. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- D. ASTM D1557 - Test Method for Moisture-Density Relations of Soil and Soil-Aggregate Mixtures Using 10-lb. (4.5-kg) Rammer and 18-in. (457 mm) Drop.
- E. ASTM D 1751 - Performed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types).
- F. ASTM D 1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- G. ASTM D2487 - Classification of Soils for Engineering Purposes.
- H. Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction, Current Edition, (WisDOT).

1.04 Submittals

- A. Concrete delivery tickets.

1.05 Weather Limitations

- A. Cold Weather Placement
 1. Do not place concrete when air temperature is 40 degrees F and falling. Placement may commence when air temperature is 35 degrees F and rising.
 2. Insulate concrete to maintain a minimum temperature of 50 degrees F for not less than 72 hours and a temperature above freezing for the remainder of the curing period.
 3. The subgrade shall be free of frost.
 4. Water and aggregates may be heated prior to mixing so that the temperature of the in-place concrete is between 50 and 85 degrees F.
- B. Warm Weather: Temperature of in-place concrete shall not exceed 85 degrees F except where an approved retarder is used. In no case shall the in-place temperature exceed 95 degrees F.
- C. Do not place during rain, sleet or snow.

1.06 Equipment

- A. Equipment, machines and tools shall have the capability of producing the required product, meeting grade controls, thickness control and smoothness requirements.
- B. Curb forming machines shall be self-propelled, automatically controlled, crawler mounted, and capable of spreading, consolidating and shaping the plastic concrete to the desired cross section in one pass.

PART 2 - PRODUCTS

2.01 Materials

- A. Concrete: Class D, air entrained concrete. See Section on concrete.
- B. Reinforcing Steel: ASTM A615 or A616, Grade 60, deformed bars.
- C. Curing Material: ASTM C309, Type 2, white pigmented.
- D. Preformed Expansion Joint Fillers: ASTM D1751 or ASTM D1752.
- E. Crushed Aggregate Base: Provide crushed aggregate base meeting gradation requirements of WisDOT 305.

Sieve Size	Percentage Passing By Weight	
	1 1/4-Inch Base	3/4-Inch Base
1 1/4-Inch	95 - 100	- - -
1-Inch	- - -	100
3/4-Inch	70 - 93	95 - 100
3/8-Inch	42 - 80	50 - 90
No. 4	25 - 63	35 - 70
No. 10	16 - 48	15 - 55
No. 40	8 - 28	10 - 35
No. 200	2 - 12	5 - 15

- a. Limited to a maximum of 8 percent in base course placed between new and old pavement.
- b. 8 - 15 percent passing when base is \geq 50% crushed gravel.
- c. 3 - 10 percent passing when base is \geq 50% crushed gravel.
- F. Common Fill: Natural soil free from organic matter, debris, vegetation, stones larger than six inches, and frozen material and classified as GW, GP, GM, GC, SW, SP, SC, ML or CL in ASTM D2487.

PART 3 - EXECUTION

3.01 Lines and Grade

- A. Construct curb and gutter to lines and grade shown on the Drawings or as given by the Engineer.
- B. Engineer will provide grade stakes at 50-foot intervals on straight sections, at 25-foot intervals on curves, and at tangent points.
- C. Inform Engineer at least 48 hours in advance of the need for grade stakes.

3.02 Subgrade Preparation

- A. Excavate to required subgrade and compact to 95 percent of the maximum dry density in accordance with ASTM D1557.
- B. Use common fill for areas needing fill. Place in maximum 8-inch compacted layers. Compact to 95 percent of the maximum dry density in accordance with ASTM D1557.

3.03 Base

- A. Place crushed aggregate base material on prepared subgrade to a minimum compacted thickness,

as shown on the Drawings. Compact to 95 percent of the maximum dry density.

3.04 Forms

- A. Wood or metal forms, straight, and of sufficient strength to resist placement during pouring. Wood forms shall be surfaced plank, 2-inch nominal thickness. Steel forms shall be channel-formed sections with a flat top surface. On sharply curved sections of curb, use appropriate metal or wood materials.
- B. Outside forms shall have a height equal to the full-depth of the curb and gutter. The inside form of the curb shall be securely fastened to and supported by the outside form.
- C. Clean and oil forms prior to use.

3.05 Placing and Finishing

- A. Place, consolidate and shape the concrete by hand or with a forming machine.
- B. Finish surface with a smooth wood float until the surface is true to grade and section and uniform in texture. Brush floated surface with broom or brush.
- C. Remove face forms for finishing the curb face and fillets as soon as the concrete will retain its shape. Do not remove back forms until the concrete has been in place for at least six hours.
- D. Back edge of curb, edge of gutter adjacent to curb, edges next to expansion joints, and edges next to contraction joints formed with separator plates shall be rounded with a 1/4 inch radius edger.
- E. Surface and edges shall be true and free from tool marks.
- F. After forms are removed, paint honey-combed areas with mortar.

3.06 Contraction Joints

- A. Provide contraction joints at intervals of not less than 6 feet or more than 15 feet. Place joints opposite joints in adjacent concrete pavement.
- B. Form joints by cutting the concrete to a minimum depth of 2 inches with a pointed trowel or other suitable tool. Finish edges with a 1/4-inch radius tool. Joint shall have a minimum thickness of 1/8 inch.

3.07 Expansion Joints

- A. Form expansion joints with 3/4 inch thick preformed fillers cut and shaped to the cross section of the curb and gutter. Filler shall extend to within 1/8 inch of the surface.
- B. Locate joints where tangent and radial curb and gutter meet; on either side of inlets approximately three feet from the inlet, but not closer than six feet from another joint; between curb and abutting sidewalk; and on tangent sections at maximum intervals of 300 feet.

3.08 Curing and Protection

- A. Cure concrete with a uniform coating of white-pigmented membrane-curing compound. Apply the compound as soon after finishing as the free water has disappeared from the surface. Apply to formed surfaces within 30 minutes after the forms are removed. Apply with a hand-operated pressure sprayer at a rate of one gallon per 200 square feet.
- B. Protect concrete from all traffic for three days and from vehicular traffic for seven days.

3.09 Reinforcement

- A. Provide reinforcement when crossing sewer, water, and lateral trenches and as indicated.

3.10 Handicap Ramps and Driveways

- A. Provide handicap ramps at all intersections. Provide handicap ramps at other locations, as indicated on the Drawings or as directed by the Engineer.
- B. Construct driveway sections at existing driveways and as directed by the Engineer.

3.11 Defects

- A. If curb and gutter cracks between contraction joints, settles, or spalls within one year of placement, Engineer may require the defective concrete to be removed and replaced at no expense to the Owner.
- B. A minimum of six feet of curb and gutter shall be removed.
- C. Provide two No. 4 epoxy coated dowel bars 12 inches long on both ends of the repair. Drill existing curb to a depth of 7 inches. Provide a tight driven fit.

END OF SECTION

SECTION 32 17 23.14

PAVEMENT MARKING

PART 1 - GENERAL

1.01 Section Includes

- A. Traffic control markings for pavement.

1.02 References

- A. State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, Current Edition (WisDOT).

PART 2 - PRODUCTS

2.01 Paint

- A. A fast-drying, waterborne paint formulated for traffic markings meeting the requirements of WisDOT 646.

2.02 Line Types

- A. Line types shall have the width and color as follows:
 1. Centerline: 4-inch, yellow, solid.
 2. No Passing: 4-inch, yellow, dashed.
 2. Lane Line: 4-inch, white, solid.
 3. Edge Line: 4-inch, white, solid.
 4. Stop Line: 12-inch, white, solid.
 5. Crosswalk: 6-inch, white, solid.
 6. Parking Stalls: 4-inch, white, solid.

PART 3 - EXECUTION

3.01 Preparation

- A. Pavement shall be dry and free from frost.
- B. Remove dust, dirt, glaze, oil, grease, loose paint, gravel, debris or other materials that may prevent proper bonding.
- C. Accurately layout the markings.

3.02 Application

- A. Do not apply below the minimum pavement temperature recommended by the manufacturer.
- B. Place markings as indicated on the Drawings or as directed by the Engineer.
- C. Applied lines shall have a uniform width.
- D. Applied lines and symbols shall have a uniform color. Edges of lines and symbols shall have a reasonably sharp cutoff.
- E. Apply paint at a rate of 17.6 gallons per mile of 4-inch wide line.

3.03 Protection

- A. Protect painted markings from traffic until paint is sufficiently dry to preclude pickup under traffic.

END OF SECTION