

RFB NO. 318062



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. 318062 CAPITAL CITY TRAIL REHABILITATION - PHASE 2 5603 LONGFORD TERRACE FITCHBURG, WISCONSIN

Due Date / Time: **TUESDAY, MAY 14, 2019 / 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:

RYAN SHORE, PROJECT MANAGER
TELEPHONE NO.: 608/266-4475
FAX NO.: 608/267-1533
E-MAIL: SHORE@COUNTYOFDANE.COM

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LEGAL NOTICE

INVITATION TO BID

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

2:00 P.M., TUESDAY, MAY 14, 2019

RFB NO. 318062

CAPITAL CITY TRAIL REHABILITATION - PHASE 2

CAPITAL CITY TRAIL

5603 LONGFORD TERRACE

FITCHBURG, WI

Dane County is inviting Bids for construction services for Phase 2 of the Capital City Trail Rehabilitation project. This project will include removal and replacement of asphalt pavement, bridge installation, shoulder work and site restoration. Only firms with capabilities, experience & expertise with similar projects should obtain this Request for Bids document & submit Bids.

Request for Bids document may be obtained after **2:00 p.m. on April 9, 2019** by downloading it from bids-pwht.countyofdane.com. Please call Ryan Shore, Project Manager, at 608/266-4475, or our office at 608/266-4018, for any questions or additional information.

All Bidders must be pre-qualified as a Best Value Contractor before award of Contract. Complete Pre-qualification Application for Contractors at countyofdane.com/pwht/BVC_Application.aspx or obtain one by calling 608/266-4029.

A pre-bid site tour will be held April 24, 2019 at 1:00 p.m. at the Capital City Trail, starting at 5603 Longford Terrace. Bidders are strongly encouraged to attend this tour.

PUBLISH: APRIL 9 & APRIL 16, 2019 - WISCONSIN STATE JOURNAL

APRIL 9 & APRIL 16, 2019 - THE DAILY REPORTER



Department of Public Works, Highway & Transportation
Public Works Engineering Division

608/266-4018

Gerald J. Mandli, P.E.
Commissioner / Director

Joseph T. Parisi
County Executive

Deputy Director
Todd Draper

1919 Alliant Energy Center Way
Madison, Wisconsin 53713
Fax: 608/267-1533
www.countyofdane.com/pwht/public_works.aspx

BEST VALUE CONTRACTING APPLICATION

CONTRACTORS / LICENSURE APPLICANTS

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

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

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

EXEMPTIONS

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

SEC.	PROOF OF RESPONSIBILITY	CHECK IF APPLICABLE
1	Does your firm 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, pre-qualified subcontractors?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
2	Will your firm possess all valid, effective licenses, registrations or certificates required by federal, state, county, or local law, which are necessary for the type of work to be performed including, but not limited to, those for any type of trade work or specialty work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
3	Will your firm meet all bonding requirements as required by applicable law or contract specifications?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
4	Will your firm meet all insurance requirements as required by applicable law or specifications, including general liability insurance, workers compensation insurance and unemployment insurance requirements?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
5	Will your firm maintain a substance abuse policy for employees hired for public works contracts that comply with Wis. Stats. Sec. 103.503?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
6	Does your firm acknowledge that it must pay all craft employees on public works projects the wage rates and benefits required under Section 66.0903 of the Wisconsin Statutes?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
7	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"/>
8	In the past three (3) years, has your firm had control or has another corporation, partnership or other business entity operating in the construction industry controlled it? If so, please attach a statement explaining the nature of the firm relationship?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
9	In the past three (3) years, has your firm had any type of business, contracting or trade license, certification or registration revoked or suspended?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
10	In the past three (3) years, has your firm been debarred by any federal, state or local government agency?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
11	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.
12	In the past three (3) years, has your firm committed a willful violation of federal, state or local government safety laws as determined by a final decision of a court or government agency authority.	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
13	In the past three (3) years, has your firm been in violation of any law relating to your contracting business where the penalty for such violation resulted in the imposition of a penalty greater than \$10,000?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach details.
14	Is your firm Executive Order 108 pre-certified with the State of Wisconsin?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
15	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"/>
16	Is your firm exempt from being pre-qualified with Dane County?	Yes: <input type="checkbox"/> No: <input type="checkbox"/> If Yes, attach reason for exemption.
17	Does your firm acknowledge that in doing work under any County Public Works Contract, it will be required to use as subcontractors only those contractors that are also pre-qualified with the County or become so ten days prior to commencing work?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
18	Contractor has been in business less than one year?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
19	Is your firm a first time Contractor requesting a one time exemption, but, intend to comply on all future contracts and are taking steps typical of a "good faith" effort?	Yes: <input type="checkbox"/> No: <input type="checkbox"/>
20	Not applicable. My firm does not intend to work on Best Value Contracts. Note: Best Value Contracting is required to bid on most Public Works Contracts (if unclear, please call Todd Draper 608-267-0119).	Yes: <input type="checkbox"/> No: <input type="checkbox"/>

SIGNATURE SECTION

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

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

Signature: _____

(Application is invalid without signature)

Print Name: _____ Date: _____

Title: _____

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

REMEMBER!

RETURN ALL TO FORMS AND ATTACHMENTS, OR QUESTIONS TO:

**TODD DRAPER
EMAIL: DRAPER@COUNTYOFDANE.COM
OFFICE: (608)267-0119, FAX: (608)267-1533**

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

APPENDIX A

APPRENTICEABLE TRADES:

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

INSTRUCTIONS TO BIDDERS

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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 April 24, 2019 at 1:00 p.m. at 5603 Longford Terrace, Fitchburg. Attendance by all bidders is optional, however bidders and subcontractors are strongly encouraged to attend.
- D. Failure to visit site or failure to examine any and all Construction Documents will in no way relieve successful Bidder from necessity of furnishing any necessary materials or equipment, or performing any work, that may be required to complete the Work in accordance with Drawings and Specifications. Neglect of above requirements will not be accepted as reason for delay in the Work or additional compensation.

2. DRAWINGS AND SPECIFICATIONS

- A. Drawings and Specifications that form part of this Contract, as stated in Article 1 of General Conditions of 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 ten (10) 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 Architect / Engineer will not be responsible for verbal instructions.

4. QUALIFICATIONS OF BIDDER (CONTRACTOR AND SUBCONTRACTOR)

- A. Before award of Contract can be approved, Owner shall be satisfied that Bidder involved meets following requirements:
 - 1. Has completed at least one (1) project of at least fifty percent (50%) of size or value of Division of work being bid and type of work completed is similar to that being bid. If greater magnitude of experience is deemed necessary, other than size or value of work, such requirements will be described in appropriate section of Specifications.
 - 2. Maintains permanent place of business.
 - 3. Can be bonded for terms of proposed Contract.
 - 4. Has record of satisfactorily completing past projects and supplies list of no more than three (3) most recent, similar projects, with architect or engineer's and owner's names, addresses and telephone numbers for each project. Submit to Public Works Project Manager with Bid. Criteria which will be considered in determining satisfactory completion of projects by bidder will include:
 - a. Completed contracts in accordance with drawings and specifications.
 - b. Diligently pursued execution of work and completed contracts according to established time schedule unless Owner grants extensions.
 - c. Fulfilled guarantee requirements of construction documents.
 - d. Is not presently on ineligible list maintained by County's Department of Administration for noncompliance with equal employment opportunities and affirmative action requirements.
 - e. Authorized to conduct business in Wisconsin. By submitting Bid, bidder warrants that it has: complied with all necessary requirements to do business in State of Wisconsin; that persons executing contract on its behalf are authorized to do so; and, if corporation, that name and address of bidder's registered agent are as set forth in Contract. Bidder shall notify Owner immediately, in writing, of any change in its registered agent, their address, and bidder's legal status. For partnership, term "registered agent" shall mean general partner.
- B. County's Public Works Project 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 provision, ESB is defined as:
1. Independent business concern that has been in business minimum of one year;
 2. Business located in State of Wisconsin;
 3. Business comprised of less than twenty-five (25) employees;
 4. Business must not have gross sales in excess of three million dollars (\$3,000,000.00) over past three years; and
 5. Business does not have history of failing to complete projects.
- B. **Emerging Small Business (ESB) Involvement.** Bidder shall make good faith effort to award minimum of ten percent (10%) of the Work to ESBs. Bidder shall submit report to Dane County Contract Compliance Officer within 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 this ESB listing: pdf.countyofdane.com/commissions/2013-2015_Targeted_Business_Directory.pdf.
- G. **ESB Certification.** All contractors, subcontractors and suppliers seeking ESB certification must complete and submit Emerging Small Business Report to Dane County Contract Compliance Program.
- H. **Certification Statement.** If ESB firm has not been certified by County as ESB prior to submittal of this Bid, ESB Report cannot be used to fulfill ESB goal for this project unless

firm provides "Form D - Certification Statement". Certification statement must be completed and signed by ESB firm.

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

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

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

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

1. Selecting portions of the Work to be performed by ESBs in order to increase likelihood of meeting ESB goal including, where appropriate, breaking down Contract into smaller units to facilitate ESB participation.
2. Advertising in general circulation, trade associations and women / minority focus media concerning subcontracting opportunities.
3. Providing written notices to reasonable number of specific ESBs that their interest in Contract was being solicited in sufficient time to allow ESBs to participate effectively.
4. Following up on initial solicitations of interest by contacting ESBs within five (5) 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 Officer within twenty-four (24) hours after Bid Due Date.

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

10. METHOD OF AWARD - RESERVATIONS

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

1. Lowest dollar amount submitted by qualified responsible bidder on Base Bid for all work comprising project, combined with such additive Owner accepted alternates.
2. Owner reserves right to reject all bids or any bid, to waive any informality in any bid, and to accept any bid that will best serve interests of County.
3. Unit Prices and Informational Bids will not be considered in establishing low bidder.

11. SECURITY FOR PERFORMANCE AND PAYMENTS

- A. Simultaneous with delivery of signed Contract, Bidder shall be required to furnish Performance and Payment Bonds as specified in Article 29 of General Conditions of Contract, "Contract Security". Surety Company shall be licensed to do business in Wisconsin. Performance and Payment Bonds must be dated same date or subsequent to date of Contract. Performance and Payment Bonds must emulate information in Sample Performance and Payment Bonds in Construction Documents.
- B. Provide certified copy of power of attorney from Surety Company showing that agent who signs Bond has power of attorney to sign for Surety Company. Secretary or Assistant Secretary of company must sign this certification, not attorney-in-fact. Certification must bear same or later date as Bond. Power of Attorney must emulate model power of attorney information detailed in Sample Performance and Payment Bonds.
- C. If Bidder is partnership or joint venture, State certified list, providing names of individuals constituting partnership or joint venture must be furnished. Contract itself may be signed by one partner of partnership, or one partner of each firm comprising joint venture, but Performance and Payment Bonds must be signed by all partners.
- D. If Bidder is 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 this Work, except as indicated, will be accepted. Any conditional Bid, amendment to Bid Form or appended item thereto, or inclusion of any correspondence, written or printed matter, or details of any nature other than that specifically called for, which would alter any essential provision of Construction Documents, or require consideration of unsolicited material or data in determining award of Contract, will disqualify Bid. Telecommunication alterations to Bid will not be accepted.
- C. Bidders must submit single Bid for all the Work.
- D. Bid amounts shall be inserted in words and in figures in spaces provided on Bid Form; in case of conflict, written word amounts will govern.
- E. Addenda issued after Bid Letting shall become part of Construction Documents. Bidders shall acknowledge receipt of such addenda in appropriate space provided on Bid Form. Bid may be rejected if receipt of any particular addendum applicable to award of Contract has not been acknowledged on Bid Form.
- F. Bids shall be signed, placed in envelope, sealed and delivered before due time to place designated in Invitation to Bid, and identified with project name, bid number, location, category of work being bid upon, Bid Due Date, name and address of bidder.
- G. Bidder shall be responsible for sealed Bid being delivered to place designated for Bid Due Date on or before date and time specified. Bids received after time of closing will be rejected and returned to bidder unopened.
- H. Bid will be considered invalid and will be rejected if bidder has not signed it.
- I. Faxed or emailed Bids will not be accepted.
- J. Bidder's organization shall submit completed with Bid, Fair Labor Practices Certification form, included in these Construction Documents.

14. SUBCONTRACTOR LISTING

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

15. ALTERNATE BIDS

- A. Not Applicable

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. This work will be accomplished by Owner or will be let under separate contracts and will not be included under this Contract:
 - 1. Removal and replacement of trail signage.

20. SPECIAL HAZARDS COVERAGE

- A. Not Applicable.

FORM A

**DANE COUNTY
EMERGING SMALL BUSINESS REPORT - CERTIFICATION**

In accordance with General Conditions of Contract, submit this Emerging Small Business Report within 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

Page ___ of ___

**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

Name of Bidding Firm: _____

BID FORM

BID NO. 318062

**PROJECT: CAPITAL CITY BIKE TRAIL REHABILITATION - PHASE 2
CAPITAL CITY TRAIL**

**TO: DANE COUNTY DEPARTMENT OF PUBLIC WORKS, HIGHWAY &
TRANSPORTATION 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.**

BASE BID - UNIT PRICING:

Dane County is inviting Bids for construction services for Phase 2 of the Capital City Bike Trail Rehabilitation project. This project will include removal and replacement of asphalt pavement, bridge installation, shoulder work and site restoration. 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:

Bid Item Number	Bid Item Name / Supplemental Description	Quantity	Unit	Unit Price	Total
1	Erosion Control	1.00	LS		
2	Traffic Control	1.00	LS		
3	Clearing & Grubbing	1.00	LS		
4	Existing Pavement Removal, Type A	9,000	SY		
5	Pulverize Existing Pavement, Type B	1,500	SY		
6	Remove Existing Crossing Structure	1	LS		
7	Breaker Run	150	TONS		
8	C.A.B.C ¾”:	1,850	TONS		
9	Finish Grade Base Course	10,000	SY		
10	AC Surface 3” 4LT58-28S	1,700	TONS		
11	Gravel Shoulder 4” Thick, Placed and Shaped	550	TONS		
12	Concrete Abutments, Helical Piles	1	LS		
13	Bridge Structure, Delivered	1	LS		
14	Bridge Structure, Installed	1	LS		
15	Concrete Deck & Approaches	960	SF		
16	Bike/Ped Ramp with Detectable Warning Fields	5	EA		
17	Structure Railing	71	LF		
18	Rip Rap Class III	400	TONS		
19	Topsoil, Seed, and Mulch	4,000	SY		
20	Rock Excavation (if needed)		CY		

Total: \$ _____
Numeric Price

_____ and _____ /100 Dollars
Written Price

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

Addendum No(s). _____ through _____

Dated _____

Dane County Department of Land & Water Resources Parks Division must have this project completed by November 1, 2019. Assuming this Work can be started by July 8, 2019, 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 agrees to be qualified as a Best Value Contractor or will have proven their exemption before the award of this contract.

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: _____

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 submitted a bid, application or proposal for a contract or agreement with the county of Dane.

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

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

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

Officer or Authorized Agent Signature Date

Printed or Typed Name and Title

Printed or Typed Business Name

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

For reference, Dane County Ordinance 25.09 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.

COUNTY OF DANE

PUBLIC WORKS CONSTRUCTION CONTRACT

Contract No. _____ Bid No. 318062

Authority: 2019 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 Public Works Director, 1919 Alliant Energy Center Way, Madison, WI 53713, desires to have CONTRACTOR provide construction services for Capital City Bike Trail Rehabilitation-Phase 2 ("the Project"); and

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

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

1. CONTRACTOR agrees to construct, for the price of \$ _____ the Project and at the CONTRACTOR'S own proper cost and expense to furnish all materials, supplies, machinery, equipment, tools, superintendence labor, insurance, and other accessories and services necessary to complete the Project in accordance with the conditions and prices stated in the Bid Form, General Conditions of Contract, the drawings which include all maps, plats, plans, and other drawings and printed or written explanatory matter thereof, and the specifications therefore as prepared by _____ (hereinafter referred to as "the Architect / Engineer"), and as enumerated in the Project Manual Table of Contents, all of which are made a part hereof and collectively evidence and constitute the Contract.
2. COUNTY agrees to pay the CONTRACTOR in current funds for the performance of the Contract subject to additions and deductions, as provided in the General Conditions of Contract, and to make payments on account thereof as provided in Article entitled, "Payments to Contractor" of the General Conditions of Contract.
3. During the term of this Contract, CONTRACTOR agrees to take affirmative action to ensure equal employment opportunities. The CONTRACTOR agrees in accordance with Wisconsin Statute 111.321 and Chapter 19 of the Dane County Code of Ordinances not to discriminate on the basis of age, race, ethnicity, religion, color, gender, disability, marital status, sexual orientation, national origin, cultural differences, ancestry, physical appearance, arrest record or conviction record, military participation or membership in the national guard, state defense force or any other reserve component of the military forces of the United States, or political beliefs. Such equal opportunity shall include, but not be limited to, the following: employment,

upgrading, demotion, transfer, recruitment, advertising, layoff, termination, training, rates of pay, and any other form of compensation. CONTRACTOR agrees to post in conspicuous places, available to all employees and applicants for employment, notices setting forth the provisions of this paragraph.

4. CONTRACTOR shall file an Affirmative Action Plan with the Dane County Contract Compliance Officer in accord with Chapter 19 of the Dane County Code of Ordinances. CONTRACTOR must file such plan within fifteen (15) 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 Contract Compliance Office, and shall report annually the number of persons, by race, ethnicity, gender, and disability status, which apply for employment and, similarly classified, the number hired and number rejected.

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

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

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

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

* * * * *

FOR CONTRACTOR:

Signature Date

Printed or Typed Name and Title

Signature Date

Printed or Typed Name and Title

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

* * * * *

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

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 _____

_____	<i>(Contractor as Principal)</i>	_____	<i>(Seal)</i>
<i>(Witness)</i>	_____	_____	<i>(Title)</i>
_____	<i>(Surety)</i>	_____	<i>(Seal)</i>
<i>(Witness)</i>	_____	_____	<i>(Title)</i>

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)

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 16

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 Performance 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 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.

GENERAL CONDITIONS OF CONTRACT

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1. CONSTRUCTION DOCUMENTS

- A. Construction Documents, listed in Table of Contents of this Specification volume shall form part of this Contract and provisions of Construction Documents shall be as binding upon parties as if they were fully set forth in Contract itself.
- B. These shall also be considered as part of Construction Documents: Addenda, including additions and modifications incorporated in such addenda before execution of Contract; requests for information; construction bulletins; change orders; and written interpretations by Architect / Engineer or Public Works Project Manager that are made after execution of Contract.
- C. Construction Documents are complementary, and what is required by one shall be as binding as if required by all. Intent of Construction Documents is to include all labor, materials and equipment necessary for proper execution of the Work.

2. DEFINITIONS

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

3. ADDITIONAL INSTRUCTIONS AND DRAWINGS

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

4. SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Unless otherwise specified, Contractor shall submit three (3) copies of all Shop Drawings for each submission, until receiving final approval. After final approval, provide five (5) additional copies for distribution and such other copies as may be required.
- B. Contractor shall submit, on an on-going basis and as directed, Product Data such as brochures that shall contain catalog cuts and specifications of all furnished mechanical and electrical equipment. After Architect / Engineer's approval, one (1) copy shall remain in Architect / Engineer's file, one (1) kept at Department's office and one (1) kept at job site by Contractor for reference purposes.
- C. Samples shall consist of physical examples furnished by Contractor in sufficient size and quantity to illustrate materials, equipment or workmanship, and to establish standards to compare the Work.
 - 1. Submit Samples in sufficient quantity (minimum of two (2)) to permit Architect / Engineer to make all necessary tests and of adequate size showing quality, type, color range, finish, and texture. Label each Sample stating material, type, color, thickness, size, project name, and Contractor's name.
 - 2. Submit transmittal letter requesting approval, and prepay transportation charges to Architect / Engineer's office on samples forwarded.
 - 3. Materials installed shall match approved Samples.
- D. Contractor shall review Shop Drawings and place their dated stamp thereon to evidence their review and approval and shall submit with reasonable promptness and in orderly sequence to cause no delay in the Work or in work of any other contractor. At time of submission, Contractor shall inform Architect / Engineer in writing of any deviation in Shop Drawings or Samples from requirements of Construction Documents. Architect / Engineer will not consider partial lists.
- E. Architect / Engineer will review and approve or reject Shop Drawings with reasonable promptness to cause no delay. Architect / Engineer's approval shall not relieve Contractor from responsibility for errors or omissions in Shop Drawings.
- F. Contractor shall not commence any work requiring Shop Drawing, Product Data or Sample submission until Architect / Engineer has approved submission. All such work shall be in accordance with approved Shop Drawings, Product Data and Samples.
- G. Contractor shall keep on site of the Work, approved or conformed copy of Shop Drawings and shall at all 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. Architect / Engineer shall return without examination, Shop Drawings, Product Data and Samples not so noted.
- I. All Shop Drawings from any one Contractor should be numbered consecutively and on cover sheet shall bear name and location of project, name of Contractor, date of submittal and date of each correction or revision and associated Specification section and page number.

5. CUTTING AND PATCHING

- A. Contractor shall be responsible for all cutting, fitting or patching required to complete the Work or to make its parts fit together properly.
- B. Contractor shall not damage or endanger portion of the Work or fully or partially completed construction of County or separate contractors by cutting, patching or otherwise altering such construction, or by excavation. Contractor shall not cut or otherwise alter such construction by County or separate contractor except with written consent of County and of such separate contractor; such consent shall not be unreasonably withheld. Contractor shall not withhold unreasonably from County or separate contractor, Contractor's consent to cutting or otherwise altering the Work.

6. CLEANING UP

- A. Contractor shall keep premises and surrounding area free from accumulation of waste materials or rubbish caused by operations under Contract. Contractor shall remove from and about the Work waste materials, rubbish, Contractor's tools, construction equipment, machinery, and surplus materials at completion of the Work. Contractor shall maintain streets and sidewalks around the Work site in clean condition. Contractor shall remove all spillage and prevent tracking of spillage arising from performance of the Work, into, out of, and within the Work site. Contractor shall establish regular maintenance program of sweeping, vacuuming and / or hosing to minimize accumulation of dirt and dust upon such areas.
- B. If Contractor fails to clean up as directed in Construction Documents, County may do so and shall charge Contractor cost thereof.
- C. Contractor shall be responsible for broken windows and glass, and at completion of the Work shall replace such damaged or broken windows and glass. After replacing damaged or broken windows and glass, Contractor shall remove all labels, wash and polish both sides of all windows and glass.
- D. In addition to general cleaning (sweeping, vacuuming and / or hosing, as is appropriate to work surface), Contractor shall perform following final cleaning for all trades at completion of the Work:
 - 1. Remove temporary protections;
 - 2. Remove marks, stains, fingerprints and other soil or dirt from painted, decorated and finished woodwork and wall surfaces;
 - 3. Remove spots, plaster, soil and paint from ceramic tile, marble and other finished materials, and wash or wipe clean;
 - 4. Clean fixtures, cabinet work and equipment, removing stains, paint, dirt and dust, and leave same in undamaged, new condition;
 - 5. Clean aluminum in accordance with recommendations of manufacturer; and
 - 6. Clean resilient floors thoroughly with well-rinsed mop containing only enough moisture to clean off any surface dirt or dust and buff dry by machine to bring surfaces to sheen.

7. USE OF SITE

- A. Contractor shall provide County and Architect / Engineer access to the Work under all circumstances.
- B. Contractor shall confine operations at site to areas permitted by County, law, ordinance, permits and Construction Documents and shall not unreasonably encumber site with materials

or equipment. Contractor shall assure free, convenient, unencumbered, direct and safe access to all properties adjacent to the Work for County, its employees, invitees and guests.

8. MATERIALS AND WORKMANSHIP

- A. Contractor shall perform all work and furnish all supplies and materials, machinery, equipment, facilities and means, necessary to complete the Work required by this Contract, within time specified, in accordance with provisions of Construction Documents.
- B. All equipment and materials incorporated in the Work covered by this Contract are to be new; use recycled and / or recovered materials to extent that such use is technically and economically feasible. Recovered materials are products recovered from solid waste in form identical to original form for use that is same as, or similar to original use. Recycled materials are products manufactured from solid waste.
- C. If requested, Contractor shall furnish satisfactory evidence as to kind and quality of construction materials proposed or used. Contractor shall furnish to Architect / Engineer, for approval, manufacturer name and model, performance capacities and other pertinent information of machinery, mechanical, electrical or other types of equipment, which Contractor plans to install.
- D. If not otherwise provided, materials and labor called for in this Contract shall be provided and performed in accordance with established practice and standards recognized by Architects, Engineers, Department, and construction industry.
- E. Reference to “Standard” specifications of any association or manufacturer, or codes of County authorities, intends most recent printed edition or catalog in effect on date that corresponds with date of Construction Documents.
- F. Whenever reference is made in Specifications that work shall be “performed”, “applied”, in accordance with “manufacturer’s directions or instructions”, Contractor to whom those instructions are directed shall furnish three (3) printed copies of such instructions to Architect / Engineer before execution of the Work.

9. CONTRACTOR’S TITLE TO MATERIALS

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

10. “OR EQUAL” CLAUSE

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

- B. Equipment or materials of manufacturers, other than those named, may be used only upon following conditions:
1. That, in opinion of Architect / Engineer and Department, proposed material or equipment item is fully equal or superior (in design, materials, construction, workmanship, performance, finish, etc.) to named item. No compromise in quality level, however small, is acceptable.
 2. That, in substituting materials or equipment, Contractor assumes responsibility for any changes in system or for modifications required in adjacent or related work to accommodate such substitution despite Architect / Engineer's and Department's approval, and all costs growing out of approval of "or equal" items shall be responsibility of Contractor. No extra costs resulting from such approval shall become responsibility of Department, Architect / Engineer or any other separate Contractor.
 3. It shall be understood that use of materials or equipment other than those specified, or approved equal by Architect / Engineer and Department, shall constitute violation of Contract, and that Architect / Engineer and Department shall have right to require removal of such materials or equipment and their replacement with specified materials or equipment at Contractor's expense.
 4. Product and manufacturer named first in Specifications or on information shown on Drawings is basis of selection of manufactured items and equipment, particularly mechanical equipment. In using other than first named products or manufacturers, including those specified as additionally approved or acceptable, Contractor assumes responsibility for any changes in system and for modifications in any work required to accommodate them. Architect / Engineer's approval of such additionally acceptable products or manufacturers, either in Specifications or in Addendum, does not relieve Contractor from obligation to coordinate such optional products with other Contractors, whose work may be affected by them, and to pay all additional costs resulting from their inclusion into the Work. Contractor's liability shall include payment of Architect / Engineer's fees for any additional services made necessary by or directly connected to such product changes. No extra costs resulting from such changes shall become responsibility of Department, Architect / Engineer or any other separate Contractor.
- C. No request for approval of "or equal" materials will be entertained except from Contractor. Identify any request for substitution as substitution on Contractor's letter of transmittal and give reasons for substitution. Department may in its sole discretion allow substitutions of materials.

11. PATENTS AND ROYALTIES

- A. If Contractor uses any design, device or material covered by letters, patent or copyright, it is mutually agreed and understood, that, without exception, contract prices shall include all royalties or costs arising from use of such design, device or materials, in any way involved in the Work.
- B. Contractor shall indemnify and save harmless County from any and all claims for infringement by reason of use of such patent or copyright in connection with the Work agreed to be performed under this Contract, and shall indemnify County for any cost, expense or damage which it may be obliged to pay by reason of such infringement at any time during prosecution of the Work or after completion of the Work.

12. SURVEYS, PERMITS, REGULATIONS AND TAXES

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

- B. Contractor shall procure all permits, licenses and approvals necessary for execution of this Contract.
- C. Contractor shall give all notices and comply with all State of Wisconsin, Federal and local laws, codes, rules and regulations relating to performance of the Work, protection of adjacent property, and maintenance of passageways, guard fences or other protective facilities.
- D. Contractor shall pay all Sales, Consumer, Use and other similar taxes required by law.
- E. Contractor shall promptly notify Architect / Engineer of any variances of Drawings or Specifications with that of any State of Wisconsin, federal or local law, code, rule or regulation. Upon such notification, Architect / Engineer will require correction of variance to comply with applicable law, code, rule or regulation at no additional cost to Contractor.
- F. Work under this Contract shall comply with all applicable State of Wisconsin, Federal and local laws, codes and regulations.
- G. Contractor shall pay charges for water, sewer and other utility connections made by municipalities where required by Specifications.

13. CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE

- A. Contractor shall provide and pay for all materials, labor, tools, equipment, transportation and superintendence necessary to execute, complete and deliver the Work within specified time. Contractor agrees to secure at their own expense all personnel necessary to carry out the Work. Such personnel shall not be deemed County employees nor shall they have or be deemed to have any direct contractual relationship with County.
- B. Performance of any work necessary after regular working hours, on Sundays or Legal Holidays shall be without additional expense to County. Performance of any work at site at other than normal working hours must be coordinated with Public Works Project Manager.
- C. Contractor shall furnish, erect, maintain and remove such temporary works as may be required.
- D. Contractor shall observe, comply with, and be subject to all terms, conditions, requirements and limitations of Construction Documents.
- E. At the Work site, Contractor shall give personal superintendence to the Work or shall employ construction superintendent or foreman, experienced in character of work covered by Contract, who shall have full authority to act for Contractor. Understand that such superintendent or foreman shall be acceptable to Architect / Engineer and Department.
- F. Remove from project or take other corrective action upon notice from Architect / Engineer or Department for Contractor's employees whose work is considered by Architect / Engineer or Department to be unsatisfactory, careless, incompetent, unskilled or otherwise objectionable.
- G. Contractor and subcontractors shall be required to conform to Labor Laws of State of Wisconsin and various acts amendatory and supplementary thereto and to other laws, ordinances and legal requirements applicable to the Work.

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

14. WEATHER CONDITIONS

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

15. PROTECTION OF WORK AND PROPERTY

- A. Contractor shall at all times safely guard County's property from injury or loss in connection with this Contract. Contractor shall at all times safely guard and protect the Work, and adjacent property, from damage. Contractor shall replace or make good any such damage, loss or injury unless such is caused directly by errors contained in Contract, or by County, or County's duly authorized representative.
- B. Contractor may act diligently, without previous instructions from Architect / Engineer and / or Department, in emergency that threatens loss or injury of property, or safety of life. Contractor shall notify Architect / Engineer and / or Department immediately thereafter. Promptly submit any claim for compensation by Contractor due to such extra work to Architect / Engineer and / or Department for approval as provided for in Article 18 herein.

16. INSPECTION AND TESTING OF MATERIALS

- A. Authorized representatives and agents of County government shall have access at all times to the Work wherever it is in preparation or progress and Contractor shall provide facilities for such access and for inspection.
- B. Should it be considered necessary or advisable at any time before final acceptance of the Work to make examination of work already completed, by removing or tearing out same, Contractor shall upon request, promptly furnish all necessary facilities, labor and materials. If such work is found to be defective in any aspect, due to fault of Contractor or subcontractors thereof, Contractor shall assume all expenses of such examination and of satisfactory reconstruction. Contractor will be reimbursed for such examination and replacement in accordance with Article 18 - A.3., of these General Conditions of Contract if such work is found to meet requirements of Contract.
- C. If Specifications, Architect / Engineer's, or Public Works Project Manager's instructions require any work to be specially tested or approved, Contractor shall give Architect / Engineer and Public Works Project Manager timely notice of its readiness for testing or inspection. Test all materials and equipment requiring testing in accordance with accepted or specified standards, as applicable. Architect / Engineer shall recommend laboratory or inspection agency and Department will select and pay for all initial laboratory inspection services. Should retesting be required, due to failure of initial testing, cost of such retesting shall be borne by Contractor.
- D. Cost of any testing performed by manufacturers or Contractor for substantiating acceptability of proposed substitution of materials and equipment, or necessary conformance testing in

conjunction with manufacturing processes or factory assemblage, shall be borne by Contractor or manufacturer responsible.

17. REPORTS, RECORDS AND DATA

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

18. CHANGES IN THE WORK

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

- i) Contractor shall keep and present, in such form as directed, correct amount of cost together with such supporting vouchers as may be required by Department.
- B. If Contractor claims that by any instructions given by Architect / Engineer, Department, by drawings or otherwise, regarding performance of the Work or furnishing of material under Contract, involves extra cost, Contractor shall give Department written notice of cost thereof within two (2) weeks after receipt of such instructions and in any event before proceeding to execute work, unless delay in executing work would endanger life or property.
- C. No claim for extra work or cost shall be allowed unless it was done in pursuance of written Change Order from Architect / Engineer and approved by Department, as previously mentioned, and claim presented with payment request submitted after changed or extra work is completed.
- D. Negotiation of cost for change in the Work shall not be cause for Contractor to delay prosecution of the Work if Contractor has been authorized in writing by Public Works Project Manager to proceed.

19. EXTRAS

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

20. TIME FOR COMPLETION

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

21. CORRECTION OF WORK

- A. All work, all materials whether incorporated in the Work or not, and all processes of manufacture shall at all times and places be subject to inspection of Architect / Engineer and Public Works Project Manager who shall be judge of quality and suitability of the Work, materials, and processes of manufacture for purposes for which they are used. Should they fail to meet Architect / Engineer's and Public Works Project Manager's approval they shall be reconstructed, made good, replaced or corrected, by Contractor at Contractor's expense. Immediately remove all rejected material from site.
- B. If Contractor defaults or neglects to carry out the Work in accordance with Construction Documents or fails to perform any provision of Contract, Department may, after ten (10) 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 Architect / Engineer's additional services made necessary by such default, neglect or failure.

22. SUBSURFACE CONDITIONS FOUND DIFFERENT

- A. If Contractor encounters subsurface or latent conditions at site materially differing from those shown on Drawings or indicated in Specifications, Contractor shall immediately give notice to Architect / Engineer and Public Works Project Manager of such conditions before they are

disturbed. Architect / Engineer will thereupon promptly investigate conditions, and if Architect / Engineer finds that they materially differ from those shown on Drawings or indicated in Specifications, Architect / Engineer will at once make such changes as necessary, any increase or decrease of cost resulting from such changes to be adjusted in manner provided in above Article 18 entitled "Changes in the Work".

23. RIGHT OF DEPARTMENT TO TERMINATE CONTRACT

- A. In event that any provisions of this Contract are violated by Contractor or by any subcontractors, County may serve written notice upon Contractor and Surety of its intention to terminate Contract, such notice to contain reasons for such intention to terminate Contract, and unless within ten (10) 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 Architect / Engineer and Public Works Project Manager.

25. PAYMENTS TO CONTRACTOR

- A. Contractor shall provide:
1. Detailed estimate giving complete breakdown of contract price by Specification Division; and
 2. Periodic itemized estimates of work done for purpose of making partial payments thereon.
- B. Submit these estimates for approval first to Architect / Engineer, then to Public Works Project Manager. Costs employed in making up any of these schedules are for determining basis of partial payments and not considered as fixing basis for additions to or deductions from Contract price.
- C. County will make partial payments to Contractor for value, proportionate to amount of Contract, of all labor and material incorporated in the Work during preceding calendar month upon receipt of Application and Certificate for Payment form from Architect / Engineer and approval of Department.
- D. Contractor shall submit for approval first to Architect / Engineer, and then to Public Works Project Manager all Application and Certificate for Payment forms. If requested, Application and Certificate for Payment shall be supported by such additional evidence as may be required, showing Contractor's right to payment claimed.
- E. Application and Certificate for Payment for preparatory work and materials delivered and suitably stored at site to be incorporated into the Work at some future period, will be given due consideration. Requesting payment for materials stored off site, may be rejected, however, if deemed essential for reasons of job progress, protection, or other sufficient cause, requests will be considered, conditional upon submission by Contractor of bills of sale,

photographs and such other procedures as will adequately protect County's interest such as storage in bonded warehouse with adequate coverage. If there is any error in payment, Contractor is obligated to notify Department immediately, but no longer than ten (10) 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 Architect / Engineer and Public Works Project Manager find that progress of the Work corresponds with Construction Schedule. If Architect / Engineer and Public Works Project Manager find that progress of the Work does not correspond with Construction Schedule, County may retain up to ten percent (10%) of each Application and Certificate for Payment for the Work completed.
- H. All material and work covered by partial payments made shall become sole property of County, but this provision shall not be construed as relieving Contractor from sole responsibility for care and protection of materials and work upon which payments have been made, or restoration of any damaged work, or as waiver of right of County to require fulfillment of all of terms of Contract.
- I. County will make final payment within sixty (60) calendar days after final completion of the Work, and will constitute acceptance thereof. Submit Equal Benefits Compliance Payment Certification with final pay request. Payment may be denied if Certification is not included.
- J. County may make payment in full, including retained percentages and less authorized deductions, upon completion and acceptance of each Division where price is stated separately in Contract.
- K. Every contractor engaged in performance of any contract for Department of Public Works, Highway & Transportation shall submit to this Department, as requested and with final application for payment for work under said contract, affidavit(s) as required to prove that all debts and claims against this Work are paid in full or otherwise satisfied, and give final evidence of release of all liens against the Work and County.

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 Architect / Engineer or Department immediately of lack of progress or defective workmanship on part of others. Failure of Contractor to keep informed of the Work progressing on site and failure to give notice of lack of progress or defective workmanship by others shall be construed as acceptance by Contractor of status of the Work as being satisfactory for proper coordination with Contractor's own work.

33. SUBCONTRACTS

- A. Contractor may use services of specialty subcontractors on those parts of the Work that, under normal contracting practices, are performed by specialty subcontractors.
- B. Contractor shall not award any work to any subcontractor without prior approval of Department. Qualifications of subcontractors shall be same as qualifications of Contractor. Request for subcontractor approval shall be submitted to Department fifteen (15) 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. PUBLIC WORKS PROJECT MANAGER’S AUTHORITY

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

35. ARCHITECT / ENGINEER’S AUTHORITY

- A. Architect / Engineer is retained by, and is responsible to Department acting for County.
- B. Architect / Engineer shall determine amount, quality, acceptability, and fitness of several kinds of work and materials that are provided under this Contract and shall decide all questions that may arise in relation to said work and construction thereof.
- C. Architect / Engineer shall decide meaning and intent of any portion of Specifications and of any Drawings where they may be found obscure or be in dispute.
- D. Architect / Engineer shall provide responsible observation of construction. Architect / Engineer has authority to stop the Work whenever such stoppage may be necessary to insure proper execution of Construction Documents.
- E. Architect / Engineer shall be interpreter of conditions of Construction Documents and judge of its performance.
- F. Within reasonable time, Architect / Engineer shall make decisions on all matters relating to progress of the Work or interpretation of Construction Documents.
- G. Architect / Engineer’s decisions are subject to review by Public Works Project Manager.

36. STATED ALLOWANCES

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

- B. Department will solicit at least two (2) bids on materials or equipment for which allowance is stated and select on basis of lowest qualified responsible bid. Contractor will then be instructed to purchase "Allowed Materials". If actual price for purchasing "Allowed Materials", including taxes, is more or less than "Cash Allowance", Contract price shall be adjusted accordingly. Adjustment in Contract price shall not contain any cost items excluded from cash allowance.

37. ESTIMATES OF QUANTITIES

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

38. LANDS AND RIGHTS-OF-WAY

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

39. GENERAL GUARANTEE

- A. Neither final certificate of payment nor any provision in Construction Documents nor partial or entire occupancy of premises by County shall constitute acceptance of work not done in accordance with Construction Documents or relieve Contractor of liability in respect to any expressed warranties or responsibility for faulty materials or workmanship.
 - 1. In no event shall making of any payment required by Contract constitute or be construed as waiver by County of any breach of covenants of Contract or waiver of any default of Contractor and making of any such payment by County while any such default or breach shall exist shall in no way impair or prejudice right of County with respect to recovery of damages or other remedy as result of such breach or default.
- B. Contractor shall remedy and make good all defective workmanship and materials and pay for any damage to other work resulting there from, which appear within period of one (1) year from date of substantial completion, providing such defects are not clearly due to abuse or misuse by County. Department will give notice of observed defects with reasonable promptness.
- C. Guarantee on work executed after certified date of substantial completion will begin on date when such work is inspected and approved by Architect / Engineer and Public Works Project Manager.
- D. Where guarantees or 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 ten (10) or more employees and receives \$10,000.00 or more in annual aggregate contracts with County. Contractor shall file and Affirmative Action Plan with Dane County Contract Compliance Officer in accord with Chapter 19 of Dane County Code of Ordinances. Such plan must be filed within fifteen (15) 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 Contract Compliance Office, and shall report annually number of persons, by race, sex and handicap status, who apply for employment, and, similarly classified, number hired and number rejected.
 - 3. Contact Dane County Contract Compliance Officer at Dane County Contract Compliance Office, 210 Martin Luther King, Jr. Blvd., Room 421, Madison, WI 53703, 608/266-4114.
 - 4. In all solicitations for employment placed on Contractor's behalf during term of this Contract, Contractor shall include statement to affect Contractor is "Equal Opportunity Employer". Contractor agrees to furnish all information and reports required by County's Contract Compliance Officer as same relate to affirmative action and nondiscrimination, which may include any books, records, or accounts deemed appropriate to determine compliance with Chapter 19, Dane County Code of Ordinances, and provision of this Contract.
- B. Minority / Women / Disadvantaged / Emerging Small Business Enterprises.
 - 1. Chapter 19.508 of Dane County Code of Ordinances is official policy of Dane County regarding utilization of, to fullest extent of, Minority Business Enterprises (MBEs), Women Business Enterprises (WBEs) Disadvantage Business Enterprises (DBEs) and Emerging Small Business Enterprises (ESBEs).
 - 2. Contractor may utilize MBEs / WBEs / DBEs / ESBEs as subcontractors or suppliers. List of subcontractors will be required of low bidder as stated in this Contract. List shall

indicate which are MBEs / WBEs / DBEs / ESBEs and percentage of subcontract awarded, shown as percentage of total dollar amount of bid.

44. COMPLIANCE WITH FAIR LABOR STANDARDS

- A. During term of this Contract, Contractor shall report to County Contract Compliance Officer, within ten (10) 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 Officer results in final determination that matter adversely affects Contractor's responsibilities under this Contract, and which recommends termination, suspension or cancellation of this Contract, County may take such action.
- B. Contractor may appeal any adverse finding by Contract Compliance Officer as set forth in Dane County Ordinance 25.015(11)(c) through (e).
- C. Contractor shall post this statement in prominent place visible to employees: "As condition of receiving and maintaining contract with Dane County, this employer shall comply with federal, state and all other applicable laws prohibiting retaliation or union organizing."

45. DOMESTIC PARTNERSHIP BENEFITS

- A. Not Used.

46. USE AND OCCUPANCY PRIOR TO ACCEPTANCE

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

47. MINIMUM WAGES

- A. Contractor shall post, at appropriate conspicuous point on site of project, schedule showing all determined minimum wage rates for various classes of laborers and mechanics to be engaged in the Work under this Contract and all deductions, if any, required by law to be made from unpaid wages actually earned by laborers and mechanics so engaged.
- B. Supplementary Conditions section in Construction Documents lists wage determinations required by State Law.
- C. If, after award of Contract, it becomes necessary to employ any person in trade or occupation not classified in wage determinations, such person shall be paid at not less than such rate as shall be determined by Wisconsin Department of Workforce Development. Such approved minimum rate shall be retroactive to time of initial employment of such person in such trade

or occupation. Contractor shall notify Department of Contractor's intention to employ persons in trades or occupations not so classified in sufficient time for Department to obtain approved rates for such trades or occupations.

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

48. CLAIMS

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

49. ANTITRUST AGREEMENT

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

50. INSURANCE

- A. Contractor Carried Insurance:
 - 1. Contractor shall not commence work under this Contract until Contractor has obtained all insurance required under this Article and has provided evidence of such insurance to Risk Manager, 425 City-County Building, 210 Martin Luther King Jr. Blvd., Madison, WI 53703. Contractor shall not allow any subcontractor to commence work until insurance required of subcontractor has been so obtained and approved. Company providing insurance must be licensed to do business in Wisconsin.
 - 2. Worker's Compensation Insurance:
 - a) Contractor shall procure and shall maintain during life of this Contract, Worker's Compensation Insurance as required by statute for all of Contractor's employees engaged in work at site of project under this Contract and, in case of any such work sublet, Contractor shall require subcontractor similarly to provide Worker's Compensation Insurance for all of latter's employees to be engaged in such work unless such employees are covered by protection afforded by Contractor's Worker's Compensation Insurance.
 - b) If any claim of employees engaged in hazardous work on project under this Contract is not protected under Worker's Compensation Statute, Contractor shall provide and shall cause each subcontractor to provide adequate Employer's Liability Insurance for protection of such of Contractor's employees as are not otherwise protected.
 - 3. Contractor's Public Liability and Property Damage Insurance:
 - a) Contractor shall procure and maintain during life of this Contract, Contractor's Public Liability Insurance and Contractor's Property Damage Insurance in amount not less than \$1,000,000 bodily injury, including accidental death, to any one person, and subject to same limit for each person, in amount not less than \$1,000,000 on

account of one accident, and Contractor's Property Damage Insurance in amount not less 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 Architect / Engineer against all claims, demands, liabilities, damages or any other costs which may accrue in prosecution of the Work and that Contractor will save, defend, indemnify and hold harmless County and Architect / Engineer from all damages caused by or as result of Contractor's operations" and each shall be listed as additional insured on Contractor's and sub-contractors' insurance policies.
- c) Obligations of Contractor under Article 50.A.2.b) shall not extend to liability of Architect / Engineer, agents or employees thereof, arising out of:
 - 1) Preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications; or
 - 2) Giving of or failure to give directions or instructions by Architect / Engineer, agents or employees thereof provided such giving or failure to give is primary cause of injury or damage.
- d) Contractor shall procure and shall maintain during life of this Contract, Comprehensive Automobile Liability Insurance covering owned, non-owned and hired automobiles for limits of not less than \$1,000,000 each accident single limit, bodily injury and property damage combined with excess coverage over and above general liability in amount not less than \$5,000,000.
- e) Contractor shall either:
 - 1) Require each subcontractor to procure and to maintain during life of subcontract, subcontractor's Public Liability Property Damage Insurance, and Comprehensive Automobile Liability Insurance of type and in same amount specified in preceding paragraphs; or
 - 2) Insure activities of subcontractors in Contractor's own policy.
4. Scope of Insurance and Special Hazards: Insurance required under Article 50.A.2 & 50.A.3. hereof shall provide adequate protection for Contractor and subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operation be by insured or by anyone directly or indirectly employed by insured and also against any of special hazards which may be encountered in performance of this Contract as enumerated in Supplementary Conditions.
5. Proof of Carriage of Insurance: Contractor shall furnish Risk Manager with certificates showing type, amount, class of operations covered, effective dates, dates of expiration of policies and "Dane County" listed as additional insured. Such certificates shall also contain (substantially) following statement: "Insurance covered by this certificate will not be canceled or materially altered, except after ten (10) 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 Architect / Engineer, its agents or employees arising out of:
 - a) Preparation or approval of maps, drawings, opinion, reports, surveys, change orders, designs or specifications; or
 - b) Giving of or failure to give directions or instruction by Architect / Engineer, its agents or employees provided such giving or failure to give is primary cause of injury or damage.
4. Dane County shall not be liable to Contractor for damages or delays resulting from work by third parties or by injunctions or other restraining orders obtained by third parties.

51. WISCONSIN LAW CONTROLLING

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

SUPPLEMENTARY CONDITIONS

1. APPLICATION & CERTIFICATE FOR PAYMENT

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


AIA Document G702™ – 1992

Application and Certificate for Payment

TO OWNER:	PROJECT:	APPLICATION NO:	Distribution to:
FROM CONTRACTOR:	VIA ARCHITECT:	PERIOD TO:	OWNER <input type="checkbox"/>
		CONTRACT FOR:	ARCHITECT <input type="checkbox"/>
		CONTRACT DATE:	CONTRACTOR <input type="checkbox"/>
		PROJECT NOS:	FIELD <input type="checkbox"/>
			OTHER <input type="checkbox"/>

CONTRACTOR'S APPLICATION FOR PAYMENT

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

1. ORIGINAL CONTRACT SUM \$ _____

2. NET CHANGE BY CHANGE ORDERS \$ _____

3. CONTRACT SUM TO DATE (Line 1 ± 2) \$ _____

4. TOTAL COMPLETED & STORED TO DATE (Column G on G703) \$ _____

5. RETAINAGE:

a. _____ % of Completed Work
(Columns D + E on G703) \$ _____

b. _____ % of Stored Material
(Column F on G703) \$ _____

Total Retainage (Lines 5a + 5b, or Total in Column I of G703) \$ _____

6. TOTAL EARNED LESS RETAINAGE \$ _____
(Line 4 minus Line 5 Total)

7. LESS PREVIOUS CERTIFICATES FOR PAYMENT \$ _____
(Line 6 from prior Certificate)

8. CURRENT PAYMENT DUE \$ _____

9. BALANCE TO FINISH, INCLUDING RETAINAGE \$ _____
(Line 3 minus Line 6)

CHANGE ORDER SUMMARY	ADDITIONS	DEDUCTIONS
Total changes approved in previous months by Owner	\$ _____	\$ _____
Total approved this month	\$ _____	\$ _____
TOTAL	\$ _____	\$ _____
NET CHANGES by Change Order	\$ _____	\$ _____

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

CONTRACTOR: _____ Date: _____

By: _____ State of: _____
Country of: _____
Subscribed and sworn to before me this _____ day of _____

Notary Public: _____
My commission expires: _____

ARCHITECT'S CERTIFICATE FOR PAYMENT

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

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

ARCHITECT: _____ Date: _____

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

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Continuation Sheet

AIA Document G702™-1992, Application and Certificate for Payment, or G732™-2009, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached. In tabulations below, amounts are in US dollars. Use Column I on Contracts where variable retainage for line items may apply.

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

A ITEM NO.	B DESCRIPTION OF WORK	C SCHEDULED VALUE	D WORK COMPLETED		F MATERIALS PRESENTLY STORED <i>(Not in D or E)</i>	G TOTAL COMPLETED AND STORED TO DATE <i>(D+E+F)</i>	H BALANCE TO FINISH <i>(C-G)</i>	I RETAINAGE <i>(if variable rate)</i>
			FROM PREVIOUS APPLICATION <i>(D-E)</i>	THIS PERIOD				
GRAND TOTAL								

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NOT FOR
SUBMITTAL

SECTION 01 00 00
BASIC REQUIREMENTS

PART 1 GENERAL

1.1 SECTION SUMMARY

- A. Section Includes:
1. Section Summary
 2. Summary of the Work
 3. Contractor Use of Premises
 4. Applications for Payment
 5. 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. Proposed Products List
 15. Shop Drawings
 16. Product Data
 17. Samples
 18. Manufacturers' Instructions
 19. Manufacturers' Certificates
 20. Quality Assurance / Quality Control of Installation
 21. References
 22. Interior Enclosures
 23. Protection of Installed Work
 24. Parking
 25. Staging Areas
 26. Occupancy During Construction and Conduct of Work
 27. Protection
 28. Progress Cleaning
 29. Products
 30. Transportation, Handling, Storage and Protection
 31. Product Options
 32. Substitutions
 33. Starting Systems
 34. Demonstration and Instructions
 35. Contract Closeout Procedures
 36. Final Cleaning
 37. Adjusting
 38. Operation and Maintenance Data
 39. Spare Parts and Maintenance Materials

40. As-Built and Record Drawings and Specifications

1.2 SUMMARY OF THE WORK

- A. Project Description: Perform the Work as specified and detailed in Construction Documents package. Contractor to provide removal and replacement of asphalt pavement, bridge installation, shoulder work, site restoration and other work as described.
- B. Work by Owner:
 - 1. Removal and replacement of trail signage.
- C. Permits: Prior to commencement of the Work, Contractor to secure any and all necessary permits for completion of the Work and facility occupancy.
- D. 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.

1.4 APPLICATIONS FOR PAYMENT

- A. Submit one (1) original copies with "wet" signatures of each application on AIA G702™ and G703™ forms or approved contractors invoice form.
- B. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- C. Payment Period: Monthly.
- D. Submit Applications for Payment to Public Works Project Manager for approval & processing for payment.

1.5 CHANGE PROCEDURES

- A. Change Order Forms: Dane County Contract Change Order, Form 014-32-20.

- B. 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.

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.

1.7 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 Engineer with work plan that ensures the Work will be completed within required time of completion.
- E. Public Works Project Manager may choose to photograph or videotape site or workers as the Work progresses.

1.8 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching new work; restore work with new Products.
- B. Submit written request in advance of cutting or altering structural or building enclosure elements.
- C. Fit work tight to adjacent elements. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.
- D. Refinish surfaces to match adjacent finishes.

1.9 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.
- C. Contractor shall submit Construction Schedule at pre-construction meeting.
- D. When required in individual Specification section, convene pre-installation conference at project site prior to commencing work of Section.

1.10 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at minimum of one (1) per week with Public Works Project Manager.
- B. Preside at meetings, record minutes, and distribute copies within two (2) business days to those affected by decisions made.
- C. Owner shall schedule and administer meetings throughout progress of the Work at minimum of one (1) per week.
- D. Owner shall preside at meetings, record minutes, and distribute copies within two (2) business days to those affected by decisions made.
- E. Attendance at progress meetings by General Contractor, subcontractors, or their authorized representative, is mandatory.
- F. 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.
- G. Day & time of progress meetings to be determined at pre-construction meeting.

1.11 JOB SITE ADMINISTRATION

- A. Contractor shall have project superintendent on site minimum of four (4) hours per day during progress of the Work.

1.12 SUBMITTAL PROCEDURES

- A. Submittal form to identify Project, Contractor, Subcontractor or supplier; and pertinent Construction Documents references.
- B. Apply Contractor's stamp, signed or initialed, certifying that review, verification of Products required, field dimensions, adjacent construction work, and coordination of information is in accordance with requirements of the Work and Construction Documents.
- C. Identify variations from Construction Documents and Product or system limitations that may be detrimental to successful performance of completing the Work.

- D. Revise and resubmit submittals as required; identify all changes made since previous submittal.
- 1.13 PROPOSED PRODUCTS LIST
- A. Within fifteen (15) business days after date of Award of Contract, submit complete list of major Products proposed for use, with name of manufacturer, trade name, and model number of each Product.
- 1.14 SHOP DRAWINGS
- A. 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 SAMPLES
- A. Submit samples to illustrate functional and aesthetic characteristics of Product.
 - B. Submit samples of finishes from full range of manufacturers' standard colors, textures, and patterns for Public Works Project Manager's selection.
- 1.17 MANUFACTURERS' INSTRUCTIONS
- A. When specified in individual Specification sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- 1.18 MANUFACTURERS' CERTIFICATES
- A. When specified in individual Specification sections, submit manufacturers' certificate to Public Works Project 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.
- 1.19 QUALITY ASSURANCE / QUALITY CONTROL OF INSTALLATION
- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce work of specified quality.
 - B. Comply fully with manufacturers' instructions.

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

1.20 REFERENCES

- A. Conform to reference standard by date of issue current as of date for receiving bids.
- B. Should specified reference standard conflict with Construction Documents, request clarification from Public Works Project Manager before proceeding.

1.21 INTERIOR ENCLOSURES

- A. Provide temporary partitions as required to separate work areas from Owner occupied areas, to prevent distribution of dust and moisture into Owner occupied areas, and to prevent damage to existing materials and equipment.

1.22 PROTECTION OF INSTALLED WORK

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

1.23 PARKING

- A. Arrange for temporary parking areas to accommodate construction personnel. Parking shall be available at the Work site.
- B. All contractors and their employees shall cooperate with General Contractor and others in parking of vehicles to avoid interference with normal operations and construction activities.
- C. Do not obstruct existing service drives and parking lots with equipment, materials and / or vehicles. Keep accessible for Owner's use at all times.

1.24 STAGING AREAS

- A. Coordinate staging areas with Public Works Project Manager prior to starting the Work.
- B. On-site space for use as staging areas and storage of materials is limited and will be apportioned among various Contractors as their needs dictate with due regard for storage requirements of each Contractor. Each Contractor shall be responsible for safety of equipment and materials that are stored on site.

1.25 OCCUPANCY DURING CONSTRUCTION AND CONDUCT OF WORK

- A. Owner reserves right at any time to dismiss from premises any Contractor or construction personnel that do not uphold requirements of this Section.

- B. Owner shall not be held liable for any lost time, wages, or impacts to construction schedule by any Contractor or construction personnel dismissed for failure to uphold requirements of this Section.
- C. Work must be performed between 7:00 a.m. and 9:00 p.m.
- D. New work in extension of existing work shall correspond in all respects with that to which it connects or similar existing work unless otherwise indicated or specified.
 - 1. Existing work shall be cut, altered, removed or replaced as necessary for performance of Contract obligations.
 - 2. Work remaining in place, damaged or defaced by reason of work done under this Contract shall be restored equal to its condition at time of Award of Contract.
 - 3. If removal of work exposes discolored or unfinished surfaces or work out of alignment, such surfaces shall be refinished or materials replaced as necessary to make continuous work uniform and harmonious.
- E. Contractor is responsible for providing & maintaining temporary toilet facilities.

1.26 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. Contractor shall provide and maintain barricades & signage to prohibit public access to construction site.
- C. Contractor shall be responsible for traffic control and to submit a traffic control plan to the Public Works Project Manager for approval if contractor deems lane closure is necessary.
- D. Contractor shall provide and maintain guard lights at all barricades, railings, obstructions in streets, roads or sidewalks and at all trenches adjacent to public walks or roads.

1.27 PROGRESS CLEANING

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

1.28 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work, but does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components specifically identified for reuse.
- B. Do not use materials and equipment removed from existing premises, except as specifically identified or allowed by Construction Documents.

1.29 TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

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

1.30 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.
- C. Requests for material or product substitutions submitted after Bid Due Date may be considered. Owner reserves right to approve or reject substitutions based on Specification requirements and intended use.

1.31 SUBSTITUTIONS

- A. Public Works Project Manager shall consider requests for Substitutions only within fifteen (15) calendar days after date of Public Works Construction Contract.
- B. Document each request with complete data substantiating compliance of proposed Substitution with Construction Documents.
- C. Submit three (3) copies of requests for Substitution for consideration. Limit each request to one (1) proposed Substitution.
- D. Substitutions shall not change contract price established at Bid Due Date.

1.32 STARTING SYSTEMS

- A. Provide written notification prior to start-up of each equipment item or system.
- B. Ensure that each piece of equipment or system is ready for operation.
- C. Execute start-up under supervision of responsible persons in accordance with manufacturers' instructions.
- D. Submit written report that equipment or system has been properly installed and is functioning correctly.

1.33 DEMONSTRATION AND INSTRUCTIONS

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

- B. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at agreed-upon times, at designated location.
- C. Owner may choose to photograph or videotape demonstration session; demonstration and demonstrator shall be to level of satisfaction of Owner.

1.34 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.

1.35 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.

1.36 ADJUSTING

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

1.37 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.

1.38 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide Products, spare parts, maintenance and extra materials in quantities specified in individual Specification Sections.
- B. Deliver to the Work site and place in location as directed.

1.39 AS-BUILT AND RECORD DRAWINGS AND SPECIFICATIONS

- A. Contractor-produced Drawings and Specifications shall remain property of Contractor whether Project for which they are made is executed or not. Contractor shall furnish Public Works Project Manager with original marked up redlines of Construction Documents' drawings and specifications that shall include all Addendums, Change Orders, Construction Bulletins, on-site changes, field corrections, etc. These are project

As-Built Drawings & Specifications. Record Drawings & Specifications shall be created from these As-Builts by Public Works.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

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

- B. Related Sections:
 - 1. Section 01 00 00 - Basic Requirements

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 www.countyofdane.com/pwht/recycle/CD_Recycle.aspx.
- B. Dane County Landfill, also at 7102 US Hwy 12, Madison, must receive all other waste from this project. www.countyofdane.com/pwht/recycle/landfill.aspx.

1.4 WASTE MANAGEMENT PLAN

- A. Contractor shall develop Waste Management Plan (WMP) for this project. Dane County's Special Projects & Materials Manager may be contacted 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. WMP will be submitted 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. Salvage should be investigated 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. Mixed loads of recycled materials are allowed only per instructions at www.countyofdane.com/pwht/recycle/CD_Recycle.aspx.

1.8 LISTS OF RECYCLING FACILITIES PROCESSORS AND HAULERS

- A. Refer to www.countyofdane.com/pwht/recycle/CD_Recycle.aspx for information on Dane County Construction & Demolition Recycling Facility.
- B. Web site www.countyofdane.com/pwht/recycle/categories.aspx lists current information for Dane County Recycling Markets. Contractors can also contact Allison Rathack at 608/266-4990, or local city, village, town recycling staff listed at site www.countyofdane.com/pwht/recycle/contacts.aspx. Statewide listings of recycling / reuse markets are available from UW Extension at <https://www.uwgb.edu/shwec/>.

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	Name: _____
Wood	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
Wood Pallets	_____ units	_____ Recycled	_____ Reused	Name: _____
PVC Plastic	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Asphalt & Concrete	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Bricks & Masonry	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Vinyl Siding	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Cardboard	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Metals	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
Unpainted Gypsum / Drywall	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
Shingles	_____ cu. yds. _____ tons	_____ Recycled	_____ Reused	Name: _____
Fluorescent Lamps	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Foam Insulation	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Carpet Padding	_____ cu. ft. _____ lbs.	_____ Recycled	_____ Reused	Name: _____
Barrels & Drums	_____ units	_____ Recycled	_____ Reused	Name: _____

WASTE MANAGEMENT PLAN FORM

Glass	_____ cu. yds. _____ tons	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____
Other	_____	_____ Recycled _____ Landfilled	_____ Reused _____ Other	Name: _____

SECTION 03 31 00

CONCRETE, FORMS AND REINFORCEMENT

PART 1 - GENERAL

1.01 Section Includes

- A. Formwork for cast-in-place concrete.
- B. Steel reinforcing for cast-in-place concrete.
- C. Cast-in-place concrete.
- D. Curing and Sealing.
- E. Detectable Warning Fields

1.02 Related Sections

- A. Section 07 92 00 - Joint Sealers.

1.03 References

- A. ACI 117-90 - Standard Tolerance for Concrete Construction Materials.
- B. ACI 301-96 - Structural Concrete for Buildings.
- C. ACI 305R-91 - Hot Weather Concreting.
- D. ACI 306R-88 - Cold Weather Concreting.
- E. ACI 308-92 - Standard Practice for Curing Concrete.
- F. ACI 318-08 - Building Code Requirements for Reinforced Concrete.
- G. ACI 347-94 - Guide to Formwork for Concrete.
- H. ASTM A82 - Steel Wire, Plain, for Concrete Reinforcement.
- I. ASTM A185 - Steel Welded Wire Fabric, Plain, for Concrete Reinforcement.
- J. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement.
- K. ASTM C31 - Making and Curing Concrete Test Specimens in the Field.
- L. ASTM C33 - Standard Specification for Concrete Aggregates.
- M. ASTM C39 - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens.
- N. ASTM C94 - Standard Specification for Ready-Mixed Concrete.
- O. ASTM C143 - Standard Test Method for Slump of Hydraulic Cement Concrete.
- P. ASTM C150 - Standard Specifications for Portland Cement.
- Q. ASTM C171 - Sheet Materials for Curing Concrete.
- R. ASTM C172 - Standard Practice for Sampling Freshly Mixed Concrete.
- S. ASTM C231 - Standard Test Method for Air Content of Freshly Mixed Concrete.
- T. ASTM C260 - Air Entraining Admixtures for Concrete.

- U. ASTM C494 - Chemical Admixtures for Concrete.
- V. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete.
- W. ASTM C618 - Coal Fly Ash and Raw or Calcinated Natural Pozzolan for Use in Concrete.
- X. ASTM D1751 - Performed Expansion Joint Filler for Concrete Paving and Structural Construction (Non-extruding and Resilient Bituminous Types).
- Y. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.

1.04 Quality Assurance

- A. Perform formwork in accordance with ACI 347.
- B. Perform reinforcement work in accordance with ACI 318.
- C. Perform concrete work in accordance with ACI 301.
- D. Conform to ACI 305R when concreting in hot weather and ACI 306R when concreting in cold weather.

1.05 Submittals

- A. Formwork: Submit manufacturer's data and installation instructions for proprietary materials including form coating, ties and accessories, and manufactured form systems.
- B. Reinforcement: Provide shop drawings prepared indicating bar sizes, spacing, locations, and quantities of reinforcing steel, bending and cutting schedules, and supporting and spacing devices.
- C. Concrete
 - 1. Mix Design
 - a. 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.
 - b. 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.
 - c. Design mixes shall be approved by Engineer a minimum of five working days prior to delivery of concrete to the Site.
 - 2. Admixtures: Submit manufacturer's literature and certifications.
 - 3. Delivery Tickets: With each load of concrete delivered, duplicate delivery tickets shall be provided which give the following information:
 - a. Name of ready-mix batch plant.
 - b. Serial number of ticket
 - c. Date.
 - d. Truck number.
 - e. Name of contractor.
 - f. Name and location of job.
 - g. Class or designation of concrete.
 - h. Amount of concrete in cubic yards.
 - i. Time loaded or of first mixing of cement and aggregate.
 - j. Water added at jobsite and initials of person authorizing addition.
 - k. Admixtures, if added.
 - 4. Surface Treatments: Submit manufacturer's literature and application recommendations.

1.06 Delivery

- A. Deliver reinforcement in bundles with metal tags indicating bar size and length.

1.07 Coordination

- A. Coordinate placement of formwork, formed openings, and placement of accessories and

attachments.

PART 2 - PRODUCTS

2.01 Forms

- A. Wood Forms
 - 1. Plywood: PS1, BB grade, Class 1.
 - 2. Clean straight lumber, dressed on face and edges, 2-inch nominal thickness.
- B. Preformed Steel Forms: Minimum 16 gauge matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
- C. Pan Type: Steel of size and profile required.
- D. Tubular Column Type: Round, spirally wound laminated fiber material, surface treated with release agent, non-reusable, of sizes required.

2.02 Formwork Accessories

- A. Form Ties: Snap-off type, galvanized metal, adjustable length, cone type, 1-inch breakback dimension. The tie shall not leave holes larger than one inch diameter in concrete surface.
- B. Form Release Agent: Colorless mineral oil which will not stain concrete, or absorb moisture, or impair natural bonding of coating intended for use on concrete.
- C. Chamfered Corners: When Drawings indicate chamfered corners provide wood strip type.
- D. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sized as required, of sufficient strength and character to maintain formwork in place while placing concrete.
- E. Waterstop: Polyvinyl chloride with preformed corner sections and heat welded jointing.
 - 1. Non-Moving Construction Joints: 6" ribbed, 3/8" thick, non-tapered, 5/8" rib diameter; Greenstreak 679 or equal.
 - 2. Expansion and Moving Construction Joints: 9" ribbed with center ball, 3/8" thick, non-tapered, 5/8" rib diameter, 1" O.D. and 1/2" I.D. center bulb; Greenstreak 735 or equal.

2.03 Formwork Design

- A. Design formwork to safely support vertical and lateral loads that may be applied until such loads can be supported by the concrete structure.
- B. Design formwork to carry loads to ground or to concrete that has attained adequate strength.
- C. Design formwork to include assumed values of live load, dead load, weight of equipment to be operated on formwork, concrete mix, height of concrete drop, vibrator frequency, ambient temperature, foundation pressures, stresses, lateral stability, and other factors pertinent to the safety of the structure during construction.
- D. Support form facing materials to prevent deflection.
- E. Provide camber as required for anticipated deflections due to weight and pressure of fresh concrete and construction loads.

2.04 Reinforcement

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

2.05 Reinforcement Accessories

- A. Tie Wire: Minimum 16 gage annealed type.
- B. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for strength and support of

reinforcement during concrete placement conditions.

- C. Splice Devices: Sized to develop 125 percent yield strength of bar.

2.06 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.

2.07 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).
- E. Superplasticizer: A high-range water reducing admixture meeting requirements of ASTM C494, Type F; Master Builders Rheobuild 1000 or equal.
- F. Crystalline Waterproofing: A waterproofing agent meeting requirements of permeability according to COE CRD-C48.

2.08 Accessories

- A. Vapor Retarders: 6 mil thick clear polyethylene film, type recommended for below grade application.
- B. Non-Shrink Grout: Premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 2,400 psi in 48 hours and 7,000 psi in 28 days.

2.09 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:
 - 1. Concrete Mixes

Concrete Mixes		
Class	Compressive Strength at 28 days, psi	Maximum Water-Cement Ratio, by Weight
Plain Concrete		
A	5,000	.48
B	4,000	.57
C	3,500	.62
Air-Entrained Concrete		
D	4,000	.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
¾"	6% ± 1
1"	6% ± 1
1 ½"	5% ± 1

3. In any mix, up to 20 percent of the cement (on a pound per pound basis) may be replaced with flyash.
4. Superplasticizer: Superplasticizer may be used at the Contractor's option. See Drawings for any locations where superplastized concrete is required. Superplasticizer shall generally be added at the plant, but may be added at the jobsite.
5. Concrete Schedule: Unless otherwise indicated in the Contract Documents provide concrete in accordance with the following schedule.

Concrete Schedule	
Concrete Class	Location
Class A	Walls & floors where water tightness is required (i.e. tanks, wet wells)
Class B	Structural slabs Beams and columns
Class C	Footings Exterior walls
Class D	Exterior slabs Exterior precast topping Retaining walls Curb & gutter and sidewalk Other similar exterior concrete

D. Slump:

Location	Slump, Inches	
	Slump	Tolerance
Footings	5	± 1
Reinforced foundation walls, exterior walls	3	± 1
Exterior slab on grade	3	± 1
Precast topping	3	± 1
Pavements, sidewalk, curb and gutter	3	± 1
Retaining walls	3	± 1

Superplasticized Concrete Slump: 7 inches, not to exceed 10 inches. Do not use less than the manufacturer's recommended minimum dose. Adjust "water slump" (slump before superplasticizer addition) to be in line with Section D, above, and then utilize an appropriate superplasticizer dose to meet this final slump range.

2.10 Curing Materials

- A. Reinforced Paper: Two sheets of kraft paper cemented together with bituminous material reinforced with fiber meeting requirements of ASTM C171.
- B. Plastic Film: Polyethylene film with a minimum thickness of 0.004 inches meeting requirements of ASTM C171.
- C. Curing Compound: Liquid membrane curing compound meeting requirements of ASTM C309. For concrete floors specified to receive a combination curing, sealing, and dustproofing compound, provide Sonneborn Kure-N-Seal or equal. Compound shall be compatible with resilient flooring and carpet adhesives.
- D. 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.

2.11 Concrete Sealers

- A. Hardener/Sealer: A water soluble sealer densifier that produces a dense surface resistant to abrasion, moisture, and tire marking and provides added gloss to the floor.
- B. Manufacturer: Kure-N-Harden, Degussa Building Systems or equal.

2.12 Detectable Warning Fields

- A. Detectable warning fields shall be Neenah Foundry's Detectable Warning Plate R-4984, natural finish or approved equal cast iron plate. The detectable warning fields shall consist of a combination of panels to meet the specified length and width for the warning field area. The color of the detectable warning fields shall be natural patina unless otherwise specified in plans.

PART 3 - EXECUTION

3.01 Form Construction

- A. General
 1. Construct forms to produce concrete sections of the size, shape lines and dimensions indicated and as required to obtain accurate alignment, location, grade, level and plumbness.
 2. Provide for openings, offsets, keyways, moldings, riglets, chamfers, blocking, screeds bulkheads, anchorages, inserts and other required features.
- B. Fabrication
 1. Fabricate forms for easy removal without hammering or prying against concrete surfaces. Provide crush plates or wrecking plates where stripping may damage concrete surfaces.
 2. Provide top forms for inclined surfaces where slope is too steep to place concrete with bottom forms only.
 3. Kerf wood inserts for forming keyways, riglets, recesses, and similar items to prevent swelling and to ensure easy removal.
 4. Provide temporary openings where interior area of formwork is inaccessible for cleanout and inspection and concrete placement. Brace temporary openings in as inconspicuous locations as possible.
 5. Butt joints tight and provide back-up materials as necessary to prevent leakage of concrete paste.
- C. Falsework
 1. Support, brace and maintain falsework to safely support vertical, lateral, and asymmetrical loads until loads can be supported by in-place construction. Provide shores and struts with positive means of adjustment capable of taking up settlement during concrete placement using wedges or jacks.
 2. Carefully inspect falsework and formwork during and after concrete placement for abnormal deflections or signs of failure. Make any necessary adjustments.
- D. Forms for Exposed Concrete.
 1. Drill wood forms to suit ties used and to prevent leakage around tie holes. Do not splinter forms by driving ties through improperly prepared holes.
 2. Provide sharp, clean corners at intersecting planes without visible edges or offsets. Back joints with extra studs or girts to maintain true intersections.
 3. Use extra studs, walers and bracing to prevent bowing of forms between studs. Do not use narrow strips of form material which allows bowing.
- E. Corner Treatment: Unless otherwise indicated, form chamfers with 3/4 in. x 3/4 in. strips accurately formed and surfaced to produce uniformly straight lines and tight edge joints on exposed concrete. Extend terminal edges to required limit and miter chamfer strips at changes in direction.
- F. Provisions for Other Trades
 1. Provide openings in formwork to accommodate other trades. Verify size and location with trade requiring the opening. Provide openings in accordance with approved shop drawings.
 2. Accurately and securely support items to be built into the forms. Other trades shall provide

items to be installed and shall provide instructions and supervision as necessary.

- G. Installation of Embedded Items
 - 1. Set and build into the work, anchorage devices and other embedded items required for work by others that is attached to or supported by cast-in-place concrete. Use shop drawings, diagrams, templates and/or instructions provided by suppliers or other trades.
 - 2. Thoroughly brace embedded items to prevent movement during concrete placement. Lace items whenever possible.
 - 3. Ducts, conduits, pipes and their fittings shall be installed below slabs whenever possible. When it is necessary to embed them within a slab, they shall not be larger than 1/3 the thickness of the slab. Do not place adjacent ducts, conduits, or pipes closer than three times the O.D. of the smallest element.
 - 4. Do not cut or move reinforcement to accommodate embedded items without approval of Engineer.
- H. Edge Forms: Set edge forms or bulkheads and intermediate screwed strips for slabs to obtain required elevations and contours in the finished slab surface.
- I. Cleaning and Tightening:
 - 1. Thoroughly clean forms and adjacent surfaces immediately prior to pouring concrete.
 - 2. Apply form release agent at the rate recommended by the manufacturer.
 - 3. Re-tighten forms immediately after concrete placement as required to eliminate mortar leaks.

3.02 Form Removal

- A. Formwork not supporting concrete, such as beams, walls, columns and similar items, may be removed after curing at not less than 50 degrees F for 24 hours after placement, provided concrete is sufficiently hard to not be damaged by form removal. Protection and curing shall be maintained after form removal.
- B. Formwork supporting weight of concrete such as soffits, joists, slabs, and other structural elements may not be removed in less than 14 days and not until concrete has attained design minimum 28-day compressive strength.
- C. Form-facing material may be removed four days after placement, if shores and other vertical supports have been arranged to permit removal without loosening or disturbing shoring and supports.

3.03 Reuse of Forms

- A. Clean and repair surface of forms to be used. Split, frayed, delaminated or otherwise damaged form-facing material shall not be reused.

3.04 Formwork Tolerances

- A. Tolerances shall meet requirements of ACI 347.

3.05 Reinforcement Installation

- A. Steel Surface Condition
 - 1. Remove dirt, grease, oil, loose mill scale, excessive rust, or foreign matter that may reduce bonding with concrete.
 - 2. Steel with rust or mill scale may be used, provided minimum dimensions, including height of deformations and weight of hand wire-brushed test specimen, are not less than applicable ASTM specification.
- B. Bends
 - 1. Inside diameter of bend, other than for stirrups and ties in sizes No. 3 through No. 5, shall not be less than values in ACI 318, Table 7.2.
 - 2. Inside diameter of bend for stirrups and ties shall not be less than 4 x diameter for No. 5 bars and smaller. For bars larger than No. 5, diameter of bend shall be in accordance with Table 7.2.

ACI 318, Table 7.2

Bar Size	Min. Diameter
No. 3 - No. 8	6 x diam.
No. 9 - No. 11	8 x diam.
No. 14 and No. 18	10 x diam.

C. Hooks: Bends for hooks shall be in accordance with the following table.

Bends	
Bar Size	Min. Diameter
No. 3 - No. 8	4 x diam.
No. 9 - No. 11	5 x diam.
No. 14 and No. 18	6 x diam.

D. Placement

1. Accurately place and adequately secure reinforcement in position with concrete or metal chairs and spacers.
2. Place slab reinforcement in the upper one-third of the slab.
3. Clear distance between bars or layers of bars shall not be less than one inch or less than 1/3 times the maximum size aggregate, whichever is greater.
4. Move within tolerances to avoid interference with other reinforcing steel or embedded items.
5. Do not move bars beyond allowable tolerances without approval of Engineer.
6. Do not heat, bend or cut bars without approval of Engineer.
7. Place slab reinforcement in the upper one-third of the slab.

E. Splices

1. Stagger splices in adjacent bars.
2. Lap bars at least 6 inches or 44 bar diameters, whichever is greater.
3. Securely wire so that contact is maintained over entire length of splice.
4. Install splice devices in accordance with manufacturer's instructions.

F. Wire Fabric

1. Install in longest practical length.
2. Lap adjoining pieces one full mesh and tie.
3. Do not make end laps midway between supporting beams or directly over beams of continuous structures.
4. Offset laps in adjacent sheets.
5. Extend to within two inches of edge of slab.

G. Fastening: Tie bars at all intersections where spacing is one foot or greater. Where spacing is less than one foot, tie alternate sections.

H. Protection: Keep reinforcing steel in proper position during concrete placement.

I. Approval: All reinforcing shall be approved by the Engineer or his designated representative prior to placing concrete.

3.06 Reinforcement Tolerances

A. Fabrication

1. Sheared length: ± 1 inch.
2. Depth of truss bars: +0 inch to -1/2 inch.
3. Stirrups, ties and spirals: $\pm 1/2$ inch.
4. All other bends: ± 1 inch.

B. Placement

1. Concrete cover to formed surface: $\pm 1/4$ inch.
2. Minimum spacing between bars: $\pm 1/4$ inch.
3. Top bars in slabs and beams
 - a. Eight inches deep or less: $\pm 1/4$ inch.
 - b. Eight inches but not over two feet: $\pm 1/4$ inch.
 - c. More than two feet deep: $\pm 1/2$ inch.
 - d. Crosswise members: Spaced evenly within ± 2 inches.
 - e. Lengthwise members: ± 2 inches.

- C. Maximum bar movement to avoid interference with other reinforcing or embedded items: one bar diameter.
- D. Minimum Concrete Cover:
 - 1. Concrete cast against and permanently exposed to earth: 3 inches
 - 2. Concrete exposed to earth or weather:
 - a. No. 6 through No. 18 bars..... 2 inches
 - b. No. 5 bar, W31 or D31 wire, and smaller..... 1-1/2 inches
 - 3. Concrete not exposed to weather or in contact with ground:
 - a. Slabs, walls, joists:
 - 1) No. 14 and No. 18 bars..... 1-1/2 inches
 - 2) No. 11 bar and smaller..... 3/4 inches
 - b. Beams, columns:
 - 1) Primary reinforcement, ties, stirrups, spirals..... 1-1/2 inches
 - c. Shells, folded plate members:
 - 1) No. 6 bar and larger..... 3/4 inches
 - 2) No. 5 bar, W31 or D31 wire, and smaller..... 1/2 inches

3.07 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 and other items to be cast into concrete are accurately placed, and anchored securely.
- D. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent.
- E. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert dowels and pack solid with non-shrink grout.

3.08 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 90⁰F.
- D. When the average of the highest and lowest temperature during the period from midnight to midnight is expected to drop below 40⁰F 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 ⁰ F
12"-36"	50 ⁰ F
36"-72"	45 ⁰ F
>72"	40 ⁰ F

3.09 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. Superplasticized concrete may be dropped a maximum of five feet vertically with maximum lift depth of five feet.
- 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.
- H. Install joint devices in accordance with manufacturer's instructions.

3.10 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.
 1. Horizontal constructions joints will not be permitted except as shown on the Drawings.
 2. Provide keyways at least 1 1/2 inch deep or steel dowels in all construction joints in walls, slabs, and between footings and walls. See drawing details.
- 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.
 1. Separate slabs on grade from vertical concrete surface with 3/4 inch preformed joint filler. Extend joint filler to within 1/8 inch of finished slab 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).

3.11 Concrete Finishing

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

Type	Finish	Comments
1	Screed off	
2	Rough form finish	Patch tie holes and defects. Chip or rub off fins exceeding 1/4 in. in height. Leave surfaces with the texture imparted by form.
3	Smooth form finish	Patch tie holes and defects. Remove all fins completely. Comply with rubbed finish.
4	Smooth rubbed finish	Remove forms as early as permitted and perform necessary patching. Produce finish no later than day following form removal. Wet surface and rub with carorundum brick or other abrasive until uniform color and texture are produced. Use no cement grout.
5	Floated finish	Place, consolidate, strike off, and level concrete. Float with hand float, bladed power float with flat shoes, or power disk float when bleed water sheen has disappeared and surface has stiffened sufficiently to allow floating.

Type	Finish	Comments
6	Troweled finish	Float surface, then hand or power trowel. Hand trowel surface smooth and free of trowel marks. Continue until ringing sound is produced as surface is troweled. Floors shall be laser screeded.
7	Broom finish	Immediately after surface has been floated, give the surface a course scored texture using a broom.

1. Finish Schedule: Unless otherwise indicated in the Contract Documents, finish concrete surfaces as follows:

Surface	Finish
Buried foundations, footings and footing walls	1 and 2
Buried walls	2
Exposed exterior walls and retaining walls	3
Exterior slabs, steps, ramps, and sidewalks	7
Concrete topping for precast decks	6

2. In areas with floor drains, maintain floor elevations at walls; pitch surfaces uniformly to drains at 1/4 inch per foot or as indicated on Drawings.

3.12 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. Wet Fabric Method

1. Place wetted burlap on concrete surface when the concrete is still wet, but firm enough to support the burlap without marring the surface. Lay the burlap flat on the concrete surface, overlapping adjacent strips by a minimum of six inches. After forms are removed, cover edge with burlap.
2. Keep burlap wet for seven days. Add water as necessary by fine spray.

C. Plastic Film/Reinforced Paper Method

1. Place plastic film or reinforced paper on exposed concrete surfaces when the concrete is still wet, but firm enough to support the burlap without marring the surface. Place the material flat on the surface, without wrinkles. Weight material so that it remains in contact with the concrete. Place soil or wood strips on material edges.
2. Keep covered for seven days.

D. Liquid Membrane-Forming Curing Compound

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 150 to 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.
4. Use Type 2, white pigmented, for concrete exposed to sunlight and Type 1, clear for other concrete.
5. Do not use liquid membrane-curing compound on surfaces that are to receive additional concrete, paint, or tile that requires a positive bond, unless it has been demonstrated that the membrane can be satisfactorily removed or that it can serve as a satisfactory base.

E. Curing/Sealing Material

1. Use for sidewalk and driveways.
2. Cure and seal concrete with a uniform coating of membrane curing/sealing compound.
3. Apply with sprayer in accordance with the manufacturer's printed instructions.
4. Apply two coats at right angles to each other.
5. Do not apply if the temperature of the concrete is less than 40°F.

3.13 Field Quality Control

- A. Sampling and testing shall be the responsibility of the Owner.
- 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 cast additional test cylinders for field curing cold or hot weather may affect curing.
- E. One slump test, one air test and the concrete temperature will be taken for each set of test cylinders taken.
- F. Sampling and testing will be performed in accordance with the following:
 - 4. Concrete samples: ASTM C172.
 - 5. Test cylinders: ASTM C31.
 - 6. Slump tests: ASTM C143.
 - 7. Air test: ASTM C231.
- G. In addition to providing test results to the Engineer, provide the test results to the concrete supplier.

3.14 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.

3.15 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.

3.16 Detectable Warning Fields

- A. Detectable warning fields are required where a sidewalk or bike path crosses a vehicular way (excluding driveways), where a rail system crosses pedestrian facilities that are not shared with vehicular ways, at reflecting pools within the public right-of-way, which do not have curb or rim protruding above the walking surface, at islands and medians that are cut through level with the roadway, and at any other location required by Engineer.
- B. Detectable warning fields for sidewalk and bike path ramps shall extend 24 inches in the direction of the pedestrian travel and shall extend the full length of the curb ramp or flush surface, a minimum of five feet (5') for sidewalk ramps and a minimum of ten feet (10') for bike path ramps. When possible detectable warning fields shall be flush to the felt on the back of curb for straight approaches.
- C. Voids may not exist between the detectable warning field and concrete. In the event voids exist, the warning plate and concrete shall be removed and replaced. Slurry or calk repairs are not permitted.

END OF SECTION

SECTION 05 52 13
HANDRAILS AND RAILINGS

PART 1 - GENERAL

1.01 Section Includes

- A. Furnishing and installation of metal handrails and railings

1.02 References

- A. ASTM A500 - Cold-Formed Welded and Seamless Carbon Steel Structural Tubing.
- B. ASTM A501 - Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- C. American Institute of Steel Construction, Inc. (AISC).
- D. American Welding Society (AWS):
- E. AWS D1.1/D1.1M, Structural Welding Code – Steel.
- F. ASTM International (ASTM):
- G. ASTM A53/A53M, Standard Specification for Pipe, Steel, Black and Hot- Dipped, Zinc-Coated, Welded and Seamless.
- H. ASTM A501, Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
- I. ASTM A588, A242, A606-4 Standard Specification for Weathering Steels.

1.03 Submittals

- A. Submit shop drawings for all railing systems, including splices and attachments. Identify location of railing systems. Indicate railing systems in related and dimensional position with elevations and details at scale. Show all details and dimensions not governed by field conditions. Indicate all required field dimensions. Indicate materials.
- B. Material List: As part of the submittal, include a letter listing the brand and quality of each different material for use on the PROJECT. Materials listed shall be accepted by Owner before ordering materials.

1.04 Structural Requirements

- A. Railing system shall withstand a minimum concentrated load of 250 pounds applied in any direction toward the rail included in an arc of 180 degrees centered over the top of the rail.

PART 2 - PRODUCTS

2.01 Materials

- A. Railing materials shall be as designated on the DRAWINGS.

2.02 Fasteners

- A. The bolts, nuts, and washers shall be as designated on the DRAWINGS.
- B. Miscellaneous: CONTRACTOR shall fabricate plates or structural shapes as indicated on the DRAWINGS. Include welded anchors where detailed and furnish all items to be embedded in concrete or masonry.

2.03 Railing System

- A. Railing system shall be permanently anchored.

2.04 Fabrication

- A. General: Field measure the headwall, wingwall, or location where the railing is to be installed, compare to the DRAWINGS, and review with Owner prior to fabrication.
- B. Workmanship: Construct all items of sizes, shape, and materials as CONTRACTOR shall indicate and specify. Fabricate structural steel in accordance with AISC Specifications and additional requirements specified hereafter; perform fabrication and assembly in the shop to the greatest extent possible; form materials well, with sharp angles or lines, free from bends, twists, or open joints; shear and punch clean, true lines and surfaces; thickness of metal and details of assembly and supports shall provide ample strength and rigidity.
- C. Welding: CONTRACTOR shall perform welding in the shop with welders qualified under the AWS D1.1/D1.1M welding code for class of work employed; protect adjacent construction and materials against damage; neatly and symmetrically make all welds; fill or grind to a uniform, smooth shape; where required to present uniform appearance, fill space between welds and weld irregularities with suitable metal putty or compound made for this purpose.
- D. Fastenings: CONTRACTOR shall provide concealed fastenings wherever possible; do not use screws or bolts where they can be avoided; where used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening; and make threaded connections tight so that threads shall be entirely concealed by fittings.
- E. Paint: All products not specified by name shall be "best grade" or "first line" products available by the manufacturer. Railings which are not designated to be painted shall be galvanized or weathering steel according to the DRAWINGS. Shop clean primer on hollow metal WORK immediately before painting to remove grease and dirt film from surfaces.

PART 3 - EXECUTION

3.01 Preparation

- A. CONTRACTOR shall erect structural steel in accordance with the AISC Specifications with modifications and additional requirements specified hereafter.
- B. Erect all WORK true to lines and planes, with vertical lines plumb and horizontal lines level.
- C. Weld or bolt all permanent connections.

3.02 Miscellaneous Angles, Lintels, Plates, and Embedded Items

- A. All welding procedures shall conform to AWS D1.1/D1.1M. All welds shall develop capacity of members being joined, unless specific length or extent is noted on the DRAWINGS.
- B. Finish all cut ends neatly without irregular torch marks or sharp fins. Grind all cut surfaces to a smooth surface. Clean of all loose mill scale, rust, and foreign matter.
- C. Any shop paint on surfaces adjacent to joints to be field welded shall be wire brushed to reduce the paint film to a minimum. Grind down burrs and sharp ridges at all exposed corners and surfaces of welds prior to field painting. After field welding, welded joints to be field primed.
- D. The expansion bolts shall be installed per manufacturer's recommendations.

3.02 Installation

- A. Install railing system in accordance with the contract drawings and approved shop drawings.
- B. Install posts in pipe sleeves preset and anchored in concrete.
- C. Coat ends of pipe to be set in concrete with asphaltic material.

- D. Fill annular space between post and sleeve with nonshrink, nonmetallic grout. Leave top of grout $\frac{1}{4}$ -inch above surface, sloped to drain.
- E. Set posts plumb.
- F. Align rails so that variations from level for horizontal members, and from parallel with rake of steps and ramps for sloping members do not exceed $\frac{1}{4}$ -inch in 12 feet.
- G. Adjust, level and securely install railing system components. Avoid springing assembled system components into place.
- H. Provide for thermal contraction and expansion at maximum 20-foot intervals.
- I. Locate joints a distance of six inches from posts.

END OF SECTION

SECTION 07 92 00

JOINT SEALANTS

PART 1 - GENERAL

1.01 Summary

- A. Provide sealant and backup materials:
 1. Architectural precast concrete joints.
 2. Interior joints in vertical surfaces and horizontal on-traffic surfaces.
 3. Acoustical sealants.
 4. Aluminum, Glazing and Sheet Metal Joint Sealant.
 5. Compression Seals
 5. Primer

1.02 References

- A. ASTM C834 - Standard Specification for Latex Sealants.
- B. ASTM C919 – Use of Sealants in Acoustical Applications.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.
- D. ASTM 1193 – Standard Guide for Use of Sealants
- E. Sealant, Waterproofing, and Restoration Institute (SWRI)

1.03 Submittals

- A. Submit color charts for selection of sealants for exposed areas.
- B. Submit manufacturer's product specifications and installation instructions.

1.04 System Description

- A. Performance Requirements: Provide elastomeric joint sealants that establish and maintain watertight and airtight continuous joint seals without staining or deteriorating joint substrates.
- B. Environmental Requirements: Avoid indoor use of sealants that may contribute to indoor air quality problems, including the following:
 1. Butyl rubber.
 2. Solvent-based acrylic
 3. Neoprene.
 4. Styrene butadiene rubber.
 5. Nitrile.
 6. Methylene chloride or chlorinated hydrocarbons.
 7. Products containing bactericides and fungicides classified as phenol mercury acetates, phenol phenates, or phenol formaldehyde.
 8. Provide acrylic latex or silicone sealants with less than 50g/1 VOCs.
 9. Provide polyurethane products with less than 200 g/1VOCs.

1.05 Qualifications

- A. Installer's Qualifications: Installer shall have successfully completed within the last three years at least three joint sealant applications of similar size and type to this project.

1.06 Warranty

- A. Provide manufacturer's 5-year standard material warranty.
- B. Include coverage for replacement of sealant materials which fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

1.07 Environmental Requirements

- A. Environmental Requirements:
 - 1. Do not proceed with installation of joint sealant under the following conditions:
 - a. When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
 - b. When joint substrates are wet due to rain, frost, condensation or other causes.
 - 2. Remove contaminants from joint substrate capable of interfering with adhesion.
 - 3. Joint Width Conditions: Do not proceed with installation of joint sealant when joint widths exceed limits allowed by joint sealant manufacturer for application indicated.

PART 2 - PRODUCTS

2.00 Manufacturer

- A. Joint Sealant:
 - 1. Standard of Quality: Design is based on products of Tremco, Beachwood, OH www.tremcosealants.com, unless noted otherwise.
 - 2. Otherwise Acceptable Manufacturers: Subject to compliance with requirements, acceptable manufacturers and products are:
 - a. Sonneborn by BASF, www.basfbuildingsystems.com.
 - b. EUCCO (Euclid Chemical), www.euclidchemical.com.
 - c. USG Sheetrock Brand, www.usg.com.
 - c. Manufacturer of comparable products submitted for compliance with specifications:
 - i. VOC content may be cause for rejection of comparable products submitted.
- B. Compression Seals:
 - 1. Standard of Quality: Design is based on *Illmod 600* as manufactured by Tremco, Beachwood OH.
 - 2. Manufacturer of comparable products submitted for compliance with specifications.
- C. Backer Rod/Backup Filler Materials:
 - 1. Acceptable Manufacturers; subject to compliance with requirements, acceptable manufacturers and products are:
 - a. Interior Joints: Open-cell, Denverfoam by Backer Rod Manufacturing and Supply www.bayindustries.com/backerrod.

2.01 Materials

- A. Do not use materials stored longer than their maximum recommended shelf life.
- B. Exterior Construction Joint Sealant:
 - 1. Silyl-terminated Polyether Sealant (MS polymer):
 - a. Low-modulus, high-movement, nonsag, fast-curing.
 - b. ASTM C920.
 - c. Type and Grade: S (single component) and NS (nonsag).
 - d. Class: 100/50 for vertical joints.
 - e. Product:
 - i. Sonolastic 150 with VLM Technology by BASF.
 - ii. Great Seal PE-150 by STS Coatings.

2.02 Accessories

- A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from field tests.
- B. Cleaners for non-porous surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion o sealants to joint substrates..
- C. Compression Seals:
 - 1. Uses: Between top of concrete masonry wall and precast plank where camber in plan creates top space.

- D. Joint Backing:
 - 1. ASTM D1667.
 - 2. Round, closed cell PVC foam rod; oversized 30 to 50 percent larger than joint width.
 - 3. Non-oily, non-staining, non-gassing, back-up filler or other filler completely compatible with sealant approved by sealant manufacturer.
- E. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer.

PART 3 - EXECUTION

3.01 Examination

- A. Verify that substrate surfaces and joint openings are ready to receive work. Allow concrete and mortar to cure 28 days prior to sealant installation.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 Preparation

- A. Clean and prime joints. Do not allow primer to get outside of joints.
 - 1. Prime and seal on the same day.
- B. Remove loose materials, dust, moisture, form release agents, waterproofings, and other foreign matter that might impair adhesion of sealant.
- C. Protect elements surrounding the work of this section from damage or disfiguration.

3.03 Installation

- A. Acoustical Sealant Application Standard: Comply with recommendations in ASTM C919 for use of joint sealants in acoustical applications as applicable to materials, applications, and conditions indicated.
- B. Install Sealants using proven techniques that comply with the following and at the same time backings are installed:
 - 1. Place sealants so they directly contact and fully wet joint substrates.
 - 2. Completely fill recesses in each joint configuration.
 - 3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.
 - 4. Install joint sealant to all joints except those that allow moisture to drain.
 - 5. Caulk wide joints with three passes.
 - 6. Run a bead at each inside corner, fill joint with third pass.
 - 7. Tool joints immediately after application of material to ensure full contact with adjacent surfaces.
 - 8. Strike off excess material. Finished bead is to be flush with adjoining surfaces, unless otherwise indicated on Drawings.
- C. Measure joint dimensions and size backing material to achieve required depth/width ratio.
- D. Install bond breaker where joint backing is not used.
- E. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.

3.04 Curing

- A. Allow minimum 7 days for full cure.
- B. Do adhesion testing after 7 days.
- C. Painting Sealant:
 - 1. Allow 7 days to cure before applying paint.
 - 2. Match sealant to paint colors.

3.05 Protection

- A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion.

END OF SECTION

SECTION 31 13 00

TREE REMOVAL

PART 1 - GENERAL

1.01 Section Includes

- A. Removal of trees and stumps.

1.02 Related Sections

- A. Section 31 22 00 - Site Preparation and Earthwork.

1.03 Public Utilities

- A. Contact utility companies for location of underground facilities.
- B. Contact utility companies prior to removing trees when overhead lines may be affected by the Work.

PART 2 - PRODUCTS

2.01 Materials

- A. Signs, Barricades, and Fencing: Contractor's option.

PART 3 - EXECUTION

3.01 Tree Removal

- A. Provide signs, barricades, and fencing as necessary to protect pedestrian and vehicular traffic.
- B. Remove trees indicated on the Drawings to be removed or as directed by the Engineer.

3.02 Stump Removal

- A. Remove stumps by excavation or chipping machine.
- B. Remove stumps to a minimum depth of two feet below subgrade when located below proposed improvements and one foot below finish grade within turf areas.
- C. Backfill in accordance with Section 31 22 00.

3.03 Disposal

- A. Remove all logs, branches, stumps, chips and other debris from the site.

3.04 Measurement

- A. When payment is by the inch diameter, the diameter will be measured 4.5 feet above the ground. The diameter will be 1/3 of the tree circumference.

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 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).

1.03 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. Trail
 1. Construct the finish subgrade to the line, grade, and cross section as shown on the Drawings.
 2. The Engineer will provide grade stakes for bridge replacement project 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 for bridge replacement project 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. Maintain surface drainage during construction.
- E. Remove excess material from site. If borrow is needed, provide material meeting requirements of 2.01 for common fill.
- F. 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 trail. The truck shall traverse the length of the trail 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 or as approved by Owner.

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 23 00

STRUCTURAL EXCAVATION, BACKFILL, AND COMPACTION

PART 1 - GENERAL

1.01 Section Includes

- A. Excavation for structures.
- B. Backfill and compaction for structures.

1.02 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).

1.03 Submittals

- A. None.

PART 2 - PRODUCTS

2.01 Materials

- A. Structural Fill: On-site or off-site natural soil free from organic matter, debris, vegetation, stones larger than 6" and frozen material and described 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.

- B. Common Fill: Same as structural fill plus soils classified in ASTM D2487 as follows:

- 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.

- C. Sand: Clean, granular material meeting the following gradation:

Sieve Size	Percent Passing by Weight
3/8 Inch	100
No. 4	90 - 100
No. 16	45 - 80
No. 50	10 - 30
No. 100	2 - 10
No. 200	0 - 5

PART 3 - EXECUTION

3.01 Preparation

- A. Identify required lines, elevations and grades.
- B. Protect benchmarks, property corners and grade stakes.
- C. Locate and identify utilities that are to remain and protect them from damage.
- D. Protect plant life, turf, fences, structures and other site improvements from damage.

3.02 Excavation

- A. Excavate structure area to line and grade. Do not excavate below indicated depth except to remove unsuitable material.
- B. Dispose of unsuitable material. Stockpile suitable material for reuse as backfill.
- C. Scarify surface of excavated areas and compact to the degree required for subsequent backfill.
- D. Excavation walls more than five feet in depth shall be shored or cut back to a stable slope. Meet requirements of Department of Labor, Occupational Safety and Health Administration (OSHA).
- E. Provide necessary equipment to remove water from excavation.

3.03 Backfilling and Compaction

- A. Place fill in continuous layers not exceeding 8" compacted thickness.
- B. Maintain optimum moisture content of fill material to accomplish the required degree of compaction.
- C. Do not place frozen material and do not place fill on frozen ground.
- D. Backfill interior and exterior of walls simultaneously.
- E. Do not backfill against walls prior to completion of curing period.
- F. Provide fill material as indicated in the schedule.
- G. Compact to the percent of maximum dry density as listed in the schedule in accordance with ASTM D1557.
- H. Schedule

Area	Fill Material	Percent Compaction
Beneath Floor Slabs		
Top 6 Inches	Sand	95
Below 6 Inches	Structural Fill	95
Foundation Walls		
Interior	Structural Fill	92
Exterior	Structural Fill	92
Walks & Pavement	Structural Fill	95
Beyond 10 Ft. from Structure	Common Fill	85

3.04 Tolerances

- A. Under Paved Areas: Plus or minus 0.1 ft.
- B. Under Slabs-On-Grade: Plus or minus 0.1 ft.
- C. Under Turf: Plus or minus 0.2 ft.

3.05 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 an independent testing firm to perform compaction tests to confirm the in-place density.
- C. Determination of moisture content shall be in accordance with ASTM D3017. Determination of density shall be in accordance with ASTM D2922.

END OF SECTION

SECTION 31 23 16
ROCK EXCAVATION

PART 1 - GENERAL

1.01 Section Includes

- A. Removal of identified and discovered rock during construction.

1.02 References

- A. Section 31 22 00 - Site Preparation and Earthwork.
- B. Section 31 23 00 - Structural Excavation, Backfill and Compaction.

1.03 Rock Definition

- A. Hard and solid rock in ledges, bedded deposits, boulders larger than one cubic yard and all natural conglomerate deposits so firmly cemented as to present all characteristics of solid rock that cannot be removed with an 80,000 lb. power shovel with a 30-inch bucket with teeth in good condition.

PART 2 - PRODUCTS

2.01 Backfill

- A. Meet requirements of Sections for backfill, if included.

PART 3 - EXECUTION

3.01 Preparation

- A. Identify required lines, levels, contours and datum.
- B. Notify Engineer for evaluation of rock and recording of rock surface elevations. Contractor will not be paid for rock removed prior to the Engineer's evaluation and measurement.

3.02 Rock Removal

- A. Rock may be removed by mechanical methods such as pneumatic hammers and rock trenching machines.
- B. Cover excavation with suitable matting or earth to prevent material from flying into the air.
- C. Remove rock at bottom of excavation to form a level bearing surface.
- D. Utility Trenches: Excavate bottom to 6 inches below the invert of the pipe; excavate to a width 30 inches wide for pipes 12 inches and less and the nominal pipe diameter plus 18 inches for pipes larger than 12 inches; excavate 12 inches outside of manhole walls.
- E. Foundation Walls: Excavate 12 inches outside of walls 4 feet or less below existing ground surface and 30 inches outside of walls greater than 4 feet below existing ground surface.

3.03 Measurement and Payment

- A. Rock excavation will be measured by volume in cubic yards with the volume calculated in accordance with 3.02, D and E.
- B. Payment will be made at the contract price per cubic yard and shall include the furnishing of all materials, labor, tools and equipment necessary to excavate the rock including monitoring, excavation, hauling and disposal of disintegrated rock, and furnishing and placement of backfill material.

END OF SECTION

SECTION 31 23 19

DEWATERING

PART 1 - GENERAL

1.01 Section Includes

- A. Provide dewatering for trenching.
- B. Provide dewatering for structural excavation.

PART 2 - PRODUCTS

2.01 Equipment and Materials

- A. Provide all dewatering pumps, wells, well points, discharge pipe and pumping equipment necessary for dewatering.
- B. Provide power for equipment.

PART 3 - EXECUTION

3.01 Codes and Permits

- A. Dewatering equipment shall be installed, operated and abandoned in accordance with local and state codes.
- B. If the dewatering quantity is 70 GPM or greater, the Contractor shall obtain a dewatering well permit from the DNR.

Wisconsin Department of Natural Resources
Bureau of Drinking Water and Groundwater
P.O. Box 7921
Madison, WI 53707-7921
608-266-0821
<http://dnr.wi.gov/topic/DrinkingWater/>

3.02 Water Levels

- A. Water levels shall be maintained at a level below the bottom of all trenches and excavation.
- B. Water levels shall be maintained below the level of concrete for the following periods:
 - 1. Until concrete has been in place for 14 days or until test cylinders show a strength of 3000 psi.
 - 2. Until high-early-strength concrete has been in place 6 days or until test cylinders show a strength of 3000 psi.
- C. If water levels rise uniformly on both sides of a wall, the water level will be allowed to rise before the concrete has attained its strength.

3.03 Disposal of Water

- A. Water shall be disposed of in a suitable manner without damage to adjacent property or utilities.
- B. When routing water onto private property, permission shall be obtained from the Owner.

3.04 Flooding of Structure

- A. Pumps, motors, electrical equipment and other equipment shall be kept dry until the work is accepted by the Owner.
- B. If, at any time prior to acceptance, the pumps, motors, electrical equipment and other vulnerable

equipment is submerged, the Contractor shall have them checked out by a manufacturer's representative at the Contractor's cost. All damage shall be repaired or the equipment replaced at the Contractor's cost. A letter from the manufacturer's representative stating the equipment is in "like new" condition shall be sent to the Engineer for all repaired equipment.

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 (6 months or greater), light duty, organic, "erosion control revegetative mat" (ecrm) meant for use in urban areas, or lawns, where mowing may be accomplished within two weeks with little or no snagging of the netting or mat. all type urban mats shall conform to the requirements for erosion mats, with the following modifications:
 1. Urban mats netting must be 100% organic biodegradable. this shall include parent material, stitching, and netting.
 2. Class I type B urban mats may be single, double or no netted products.
 3. The minimum mat thickness shall be 3/8 inch (9 mm) as measured in place.
 4. All products approved in urban type a category will be allowed on slopes up to 4:1.
 5. Slopes that are between 4:1 and 2.5:1 are required to use mats in the urban type b category.
 6. The netting shall be stitched to prevent separation of the net from the parent material.
 7. The netting shall be capable of withstanding moderate foot traffic without tearing or puncturing, and shall be in accordance with section 628 of the WisDOT standard specifications.

8. Neither the netting, nor the installation, shall pose a safety risk to pedestrians walking on, or crossing it.
 - a. Type A: A product for use on slopes 4:1 and flatter with a c factor from the revised universal soil loss equation of 0.20 or less non netted materials must have a minimum permissible shear stress of 1.0 lb/sf. Urban type b may be used in replacement for urban type a mats at the contractor's option with no additional cost to the department. Recommended for use in environmentally sensitive areas that have a high probability of entrapping animals in plastic netting.
 - b. Type B: A product for use on 2.5:1 slopes and flatter with a c factor from the revised universal soil loss equation of 0.20 or less. A minimum product permissible shear stress: 1.0 lbs/sq. ft. recommended for use in environmentally sensitive areas that have a high probability of entrapping animals in plastic netting.
- C. Anchoring devices (urban)
1. All materials and additive components that are used to manufacture the anchoring devices shall be completely biodegradable as determined by ASTM d 5338-92.
 2. All materials shall be environmentally safe, and shall have no potential for soil and/or water contamination.
 3. Steel wire pins or staples will not be approved.
 4. Petroleum based plastics or composites containing petroleum based plastics will not be allowed.
 5. Materials deemed to present a hazard from splintering or spearing will not be approved. this shall include solid wood devices. However, devices manufactured from wood byproducts may be approved.
 6. The anchoring devices shall maintain their mechanical anchoring ability for at least 2 (two) months, and substantially degrade within 4 (four) months during the months of warm soil conditions (above 53 degrees f).
 7. The anchoring devices shall be shaped, using barbs, twists, bends, or other methods, to provide additional mechanical pull resistance when installed in the soil.
- D. 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.
- a. Type A: Jute fiber only to be used for reinforcing sod.
 - b. 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 allowed.
 - c. 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.

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 31 37 16

RIPRAP

PART I - GENERAL

1.01 Section Includes

- A. Furnishing and placing of stone riprap.
- B. Geotextile.

1.02 References

- A. ASTM D4632 - Test Method for Grab Breaking Load and Elongation of Geotextiles.
- B. ASTM D4751 - Test Method for Determining Apparent Opening Size of a Geotextile.
- C. ASTM D4833 - Test Method for Index Puncture Resistance of Geotextiles, Geomembranes, and Related Products.
- D. State of Wisconsin Standard Specifications for Highway and Structure Construction, Current Edition (WisDOT).

1.03 Submittals

- A. Submit gradation for each riprap size to be used for the Work.

PART 2 - PRODUCTS

2.01 Materials

- A. Riprap: Durable field stone or quarry stone, sound, hard and free from seams or cracks. Stones shall be generally round or cubiform in shape with a weight of approximately 165 lbs/cf. Slabby or elongated pieces having a width or thickness less than one-third the length shall not exceed ten percent of the total. The riprap shall conform to the following gradations:

Gradation - Diameter in Inches				
Class	D _{Max}	D ₅₀	D _{Min}	WIDOT Equiv. Riprap
1	6	3	2	- - -
2	12	6	3	Light
3	18	9	5	Heavy
4	24	12	7	Extra Heavy

- B. Geotextile: A nonwoven fabric consisting of polypropylene, polyethylene, or polyamide. Fabric shall be resistant to insects, rodents, mildew and rot, and protected from UV degradation. Fabric shall meet the following minimum values:

Geotextile Requirements			
Property	Test Method	Requirements*	
		Riprap Class 1 & 2	Riprap Class 3 & 4
Grab tensile strength, lbs. min.	ASTM D4632	205	300
Elongation, percent min.	ASTM D4632	50	50
Puncture strength, lbs	ASTM D4833	500	800
Max. Apparent opening size, US Sieve	ASTM D 4751	No. 80	No. 100

*Typical or average values

PART 3 - EXECUTION

3.01 Geotextile Placement

- A. Provide geotextile as required for the class of riprap to be installed.
- B. Remove stones or sharp objects from the subgrade that could damage the geotextile.
- C. Unroll geotextile directly on the prepared surface.
- D. Overlap adjacent sides and ends a minimum of two feet.
- E. Toe-in geotextile at top and bottom of slope.

3.02 Riprap Placement

- A. Use riprap class indicated on Drawings.
- B. Place riprap from bottom to top.
- C. Provide a uniform distribution of the various size stones to produce a well-keyed mass.
- D. Place to the depth indicated on the Drawings.
- E. Do not drop stones from a height greater than one foot.

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 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).

1.03 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.
- E. Proposed Gravel Shoulder shall be 4" Thick, 12" Wide min., Slope 6:1 max, Shape to match

existing grades, Slope 3:1 max beyond 12"

3.05 Constructing Aggregate Shoulders

- A. General
 - 1. Construct aggregate shoulders to the elevations and typical sections the plans show, except for minor modifications needed to conform to other work.
 - 2. Use equipment that does not damage or mar the pavement surface, curbs, or appurtenances.
 - 3. Place aggregate directly on the shoulder area between the pavement edge and the outer shoulder limits. Recover uncontaminated material deposited outside the limits and place within the limits.
 - 4. Do not deposit aggregate on the pavement during placement, unless the engineer specifically allows. Do not leave aggregate on the pavement overnight. After placing the shoulder aggregate, keep the pavement surface free of loose aggregate.
 - 5. Spread and compact the aggregate in compacted layers of 4 inches or less.
 - 6. After final compaction, shape the shoulders to remove longitudinal ridges and transition to existing grade to ensure proper drainage.
 - 7. Clean any aggregate material from the trail surface.
- B. Shoulders Adjacent to Concrete Pavement or Base
 - 1. Construct shoulders along concrete pavement or concrete base so the completed shoulder is at the approximate grade and cross-section before opening the pavement to public traffic.
- C. Shoulders Adjacent to Asphaltic Pavement or Surfacing
 - 1. If the trail is closed to through traffic during construction, construct the aggregate shoulders before opening the trail.
 - 2. Unless the special provisions specify otherwise, provide aggregate shoulder material compacted to a temporary 3:1 or flatter cross slope from the surface of the pavement edge.
 - 3. Provide and maintain signing and other traffic protection and control devices until completing shoulder construction to the required cross-section and flush with the asphaltic pavement surfacing.
- D. Shaping Shoulders
 - 1. Do not contaminate the shoulder aggregate with deleterious material. Incorporate material obtained from shaping shoulders in the new shoulder or as the plans show.

3.06 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.

3.07 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.

3.08 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 11 26.22

PULVERIZED AND RE-LAID PAVEMENT

PART 1 - GENERAL

1.1 Section Includes

- A. In-place pulverizing of asphaltic pavement along with the underlying base and relaying the pulverized material to construct a new base.

1.2 References

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

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

3.1 General

- A. Milling Machine: A self-propelled machine designed and constructed for milling pavements.
- B. Perform each day's mill and relay operations to avoid leaving abrupt longitudinal differences between adjacent lanes.
- C. Repair surface damage caused by intervening construction or public traffic, immediately before paving.

3.2 Construction

- A. Pulverize the full depth of the existing asphaltic pavement until 97 percent or more will pass the 2-inch sieve. Also pulverize the existing base and mix with the pulverized asphaltic pavement.
- B. Windrow material as construction operations dictate.
- C. Immediately after milling, relay the material with a paver, or grader.
- D. Match the lines, grades, and cross slopes shown on the drawings. Eliminate localized bumps, depressions, and ruts.
- E. Immediately after relaying, compact the material first with a rubber tired roller or a vibratory padfoot roller and second with a vibratory steel roller. Add water as required during the compacting operation. Compact each layer to the extent required for standard compaction in accordance with WIDOT 301.3.
- F. Compaction Equipment:
 - 1. Compacted lift 6 inches or less: Use equipment specified in WIDOT 301.3.1.
 - 2. Compacted lift from 6 inches to 8 inches: Use 12.5 ton or heavier vibratory padfoot roller and an 8 ton or heavier vibratory steel roller.
 - 3. Compacted lift greater than 8 inches, split into lifts less than 8 inches and use equipment as specified above.

END OF SECTION

1 SECTION 32 12 16

2
3 ASPHALTIC CONCRETE PAVEMENT

4 PART 1 GENERAL

5 1.01 APPLICABLE PROVISIONS

- 6 A. Applicable provisions of Division 01 shall govern the work of this section.

7 1.02 APPLICABLE PUBLICATIONS

- 8 A. The following publications of the issues listed below, but referred to thereafter by
9 basic designation only, form a part of this specification to the extent indicated by the
10 reference thereto.

- 11 1. State of Wisconsin, Department of Transportation, Standard Specifications
12 for Highway and Structure Construction, Current Edition at time of bid
13 opening.

14 1.03 DESCRIPTION OF WORK

- 15 A. The work under this section includes all materials, equipment, supervision, and labor
16 necessary to construct a plant-mixed asphaltic concrete pavement on the prepared
17 foundation of base course or existing surface, as indicated on the contract drawings
18 and specified herein.

- 19 B. All work shall conform to the requirements specified in the State of Wisconsin,
20 Department of Transportation, Standard Specifications for the particular class, type
21 and grade of material specified.

22 1.04 RELATED WORK ELSEWHERE

- 23 A. Procurement and Contracting Requirements - Division 00 (All Sections)

- 24 B. Submittals - Division 01

- 25 C. Subgrade Preparation - Division 31

- 26 D. Aggregate Base Course - Division 32

- 27 E. Asphaltic Tack Coat - Division 32

28 1.05 SUBMITTALS

- 29 A. Contractor shall submit such product literature and catalog cuts of materials to be
30 supplied to relate these materials to the specifications. Information shall be in
31 conformance with requirements of Submittals - Division 01 of these specifications.

- 1 B. Job Mix Formula. Contractor shall submit a Wisconsin Department of
2 Transportation approved Job Mix Formula for the asphaltic mixture to be used to the
3 Engineer prior to paving. If requested, the Contractor shall submit a history of recent
4 testing results.

5 1.06 OPERATION/MAINTENANCE MANUALS AND INSTRUCTIONS (NONE)

6 PART 2 PRODUCTS AND MATERIALS

7 2.01 GENERAL

- 8 A. All materials shall conform to the requirements of the State of Wisconsin,
9 Department of Transportation, Standard Specifications, unless specified otherwise
10 herein or in Special Procedures - Division 01.

- 11 B. Asphaltic concrete pavement shall be Asphaltic Concrete Pavement, Classification
12 LT, unless indicated otherwise in the Bid Schedule or Special Procedures -
13 Division 01.

- 14 C. Asphaltic concrete pavement shall meet the requirements in ASP-6, effective
15 December 2016, for asphalt pavement void reduction per Sec 460.2.1 General.
16 Asphalt pavement shall also meet the densities in ASP-6, Sec 460.3.3.1 Minimum
17 Required Density.

18 2.02 ASPHALTIC MATERIAL

- 19 A. Asphaltic Concrete Pavement shall be of WisDOT Classification 4 LT 58-28 S with
20 ASP-6 Void Reduction per Sec. 460.2.1 of WisDOT Standard Specifications
21 effective December 2016. The Contractor shall place a compacted 3-inch thick layer
22 of asphaltic surface course throughout the corridor as specified in the contract
23 documents. The asphalt shall be placed in accordance with Asphaltic Concrete
24 Pavement – Division 32.

- 25 B. Items from the State of Wisconsin, Department of Transportation, Standard
26 Specifications excluded from this specification section include:
27 1. Ride Quality Requirements and Testing (Section 440).
28 2. PG Asphalt Binder and Tack Coat Sampling and Testing (Sections 455.2.2
29 and 455.2.3).
30 3. Safety Edge (Section 450.3.2.11)

31 PART 3 CONSTRUCTION METHODS

32 3.01 GENERAL

- 33 A. All work shall conform to the requirements specified in the State of Wisconsin,
34 Department of Transportation, Standard Specifications for the particular class, type

1 and grade of material specified, unless specified otherwise herein or in Special
2 Procedures - Division 01.

3 3.02 SAWCUTTING

- 4 A. All existing asphaltic concrete pavement removals, including driveway removals,
5 shall be saw cut to the limits designated as pavement removal on the contract
6 drawings or to the limits staked by the Engineer in the field. Typically, all pavement
7 sawcuts shall be parallel or perpendicular to the centerline of the roadway.
- 8 B. The Contractor shall provide a one-time sawcut to the existing pavement at joint
9 locations. The sawcut shall be square to the existing pavement and straight.
- 10 C. If the pavement beyond the sawcut is damaged by the Contractor or construction
11 equipment during the project and prior to paving, the additional area shall be sawcut
12 by the contractor as incidental to the original sawcut.
- 13 D. The Contractor shall remove all the asphaltic material necessary to provide a
14 straight line cut in the existing pavement and the removal shall be incidental to the
15 pavement sawcutting cost.

16 3.03 CONSTRUCTION LAYOUT

- 17 A. The Contractor shall layout the pavement edges based on the existing base course to
18 provide a 10-foot wide trail and the dimensions shown on the parking lot. The
19 Owner will review the layout prior to paving. The layout may be done with spray
20 paint, flagging, or other means as desired by the Contractor that can be viewed in the
21 field by the Owner. The Contractor shall provide a 48-hour notice to the Owner as to
22 when the layout is planned so that the Owner can review the layout and paving can
23 commence as planned by the Contractor.
- 24 B. If the base area is determined to not be wide enough to meet the desired plan widths,
25 the Contractor shall notify the Owner immediately so that the area can be reviewed
26 and a plan set forth moving forward determining any additional work.

27 3.04 PREPARATION

- 28 A. Weeds shall be removed on all streets to be resurfaced prior to the application of the
29 tack coat or construction of asphaltic concrete pavement. Prior to the application of
30 the tack coat or construction of asphaltic concrete, the surface of the prepared
31 foundation shall be cleaned by brooming all dust, dirt, debris or other foreign or loose
32 material.
- 33 B. Apply tack coat as specified in Asphaltic Tack Coat - Division 32 to existing
34 pavement and each layer of a plant-mixed asphaltic base or pavement that will be
35 overlaid with asphaltic mixture.

C. The Contractor shall perform all final shaping and grading of aggregate bases necessary to produce the required roadway cross sectional contour. All valve boxes, manhole frames, and other utility appurtenances shall be adjusted to the final grade prior to the placement of the upper layer of asphalt.

3.05 PLACEMENT

A. Asphaltic concrete pavements shall be placed in reasonable conformity with the thickness shown on the contract drawings, Bid Schedule, or specified in Special Procedures - Division 01.

B. The following thickness limits shall apply unless specified otherwise:

ASPHALT MIX GRADATION (Nmas)	NOMINAL AGGREGATE SIZE (inches)	MINIMUM LAYER THICKNESS (inches)	MAXIMUM LOWER LAYER (inches)	MAXIMUM UPPER LAYER (inches)
1	1.5	3.5	5	4.5
2	1.0	3.25	5	4
3	3/4	2.25	4	3
4	1/2	1.75	3	2.5
5	3/8	1.5	3	2

3.06 COMPACTION

A. Compaction methods and requirements shall conform to Sections 450.3.2.6 and 460.3.3 of the State of Wisconsin, Department of Transportation, Standard Specifications.

B. The Contractor shall perform field pavement density tests on projects requiring over 1000 tons of asphaltic mixture. Tests shall be performed to determine the necessary compaction methods to achieve the required minimum density. The Contractor shall not operate below the specified minimum density on a continuing basis.

C. Additional tests shall be performed as directed by the Engineer for varying paving conditions, such as different weather conditions, base conditions, job mix, layer thickness, and construction methods.

D. Documentation of all testing shall be provided to the Engineer.

3.07 QUALITY CONTROL

A. The Contractor shall provide and maintain a quality control program.

1 B. If requested by the Owner or Engineer, submit samples and sampling data of all
2 proposed materials for test and analysis.

3 PART 4 MEASUREMENT AND PAYMENT

4 4.01 GENERAL

5 A. Asphaltic concrete pavement shall be paid for at the bid price in accordance with one
6 of the following methods, unless indicated otherwise in the Bid Schedule.

7 B. All work specified herein shall be considered in each of the measurement and
8 payment method(s) stipulated, unless indicated otherwise in the Bid Schedule.

9 4.02 ASPHALTIC CONCRETE PAVEMENT, 3-INCH

10 A. Asphaltic Concrete Pavement, 3-Inch Ton. Measurement shall be per ton of asphaltic
11 binder course and surface course compacted in place. The Contractor shall supply
12 the Engineer with load tickets to verify the amount of material used. Payment shall
13 be made at the contract unit price bid per ton for asphaltic concrete pavement
14 installed.

15 4.03 SAWCUTTING

16 A. Sawcutting. Sawcutting is incidental to the work.

17 4.04 CONSTRUCTION LAYOUT

18 A. Construction Layout. Construction layout to provide the widths and dimensions in
19 the plans over the prepared base course is incidental to the work.

20
21 END OF SECTION

SECTION 32 34 00

PEDESTRIAN AND LIGHT VEHICLE BRIDGES

PART 1 - GENERAL

1.01 Section Includes

- A. This section contains requirements for a fully engineered clear span bridge and shall be the minimum standards for design and construction. Clear span length and width of the bridge shall be as shown on the DRAWINGS.

1.02 Related Sections

- A. The following is a list of SPECIFICATIONS which may be related to this section:
 1. Section 05 52 13, Handrails and Railings
 2. Section 31 23 00, Structural Excavation, Backfill, Compaction.
 2. Section 31 23 19, Dewatering.
 3. Section 31 25 00, Construction Site Erosion Control.

1.03 References

- A. The following is a list of standards which may be referenced in this section:
 1. AASHTO LRFD Bridge Design Specifications, current edition and interims.
 2. AASHTO LRFD Guide Specifications for the Design of Pedestrian Bridges, current edition.
 3. American Welding Society (AWS), Structural Welding Code, D1.1, current edition.
 4. American Institute for Steel Construction (AISC), Steel Construction Manual, current edition.

1.04 Submittals

- A. Submit complete SHOP DRAWINGS to OWNER for review.
- B. Submit manufacturer's certification of compliance with referenced standards.
- C. A detailed bridge plan and supporting calculations sealed by a Professional Engineer registered in the State of Wisconsin and experienced in steel bridge design shall be submitted to the Owner within 2-4 weeks after award of contract.
- D. The bridge plan shall be unique and include all design details and all details necessary for the fabrication and installation of the bridge superstructure. Details of individual fabricated pieces are not required.
- E. Structural calculations for the design of the bridge superstructure shall include complete design, analysis and code checks.

1.05 Quality Assurance

- A. Bridge design shall be signed and sealed by a Registered Wisconsin Professional Engineer.
- B. All material shall be well manufactured. All steel shall be fabricated in a manner such that cut edges of steel are clear of burs, steel to be handled carefully during fabrication to reduce marring of steel surfaces, and steel components to be straight unless noted otherwise on construction documents.

1.06 Delivery, Storage, and Handling

- A. Coordinate delivery requirements with manufacturer.
- B. Comply with manufacturer's requirements for unloading, lifting, and placement.
- C. Steel shall be handled with sufficient care to avoid marring of finished surfaces, and thereby exposing the steel. Chains and other pointed tools that would mar, penetrate or permanently deform the contacted member shall not be used. Rope, rubber or fabric slings only shall be used.

PART 2 – PRODUCTS

2.01 Manufacturers

- A. Acceptable manufactures: Wheeler (Bloomington, MN), or approved equal

2.02 Design Requirements

- A. General:
 - 1. Bridge shall meet the referenced standards as called for in the following paragraphs.
- B. Dimensions and Requirements:
 - 1. Bridge dimensions:
 - a. Single span = 60' - As measured from end to end of deck.
 - b. Clear width = 12' - As measured between inside faces of railing.
 - c. Total rail height shall measure at least 42" above deck surface and meet AASHTO dimensional and structural requirements. See Drawings for more details.
 - 2. Bridges shall be cambered 1% of bridge length plus 100% of the full dead load deflection. Camber shall not exceed standards set forth by the Americans with Disabilities Act.
 - 3. Concrete surfaces shall have a cross-slope of 1% unless camber is at least 1% or longitudinal grade is at least 1%.
 - 3. All dead loads, applied dead loads, live loads, and wind loads as specified in the AASHTO specification.
 - 4. Live loads:
 - a. Pedestrian load = 90 psf.
 - b. AASHTO standard H-Truck = 20,000 lbs Gross Vehicle Weight (GVW) positioned to produce maximum load effect. Applied load separate from pedestrian load.
 - c. Point Load = 1000 lbs plus 33% impact, applied at a single point.
 - d. Lateral Wind Load = 35 psf on the full height of the bridge as if enclosed.
 - e. Uplift Wind Load = 20 psf applied at the windward quarter point of the bridge width.
 - 5. Deflection requirements according to AASHTO.
 - 6. In addition to the load combinations specified by AASHTO, when bridge structural members support or serve as railing members, the bridge shall be designed for the simultaneous application of rail load plus dead load plus 50% live load.
 - 7. Bearing elevations, structure depth, clearance and profile grade must conform to site conditions.
- C. Materials:
 - 1. Structural Steel
 - a. Structural steel material shall be cold-formed welded and seamless high strength, low-alloy structural tubing with improved atmospheric corrosion resistance meeting the requirements of ASTM A847, and plates and structural shapes meeting the requirements of ASTM A588 with a minimum corrosion resistance of 6.0 per ASTM G110.
 - b. Minimum thickness of HSS members shall be ¼". Minimum thickness for other rolled sections shall be 5/16", except the web thickness of rolled beams or channel shall not

be less than ¼" as per AASHTO. Railing members are not subject to minimum thicknesses requirements.

2. Hardware
 - a. Splices for truss members, bracing, and floor beams, when used, shall be made with ASTM A325 or A490 high strength bolts. Type III bolts shall be used with weathering steel. Other splices shall be made with above mentioned material or ASTM A307.
 - b. All hardware (other than Type III high strength) shall be hot-dip galvanized in accordance with ASTM A153.
 - c. Anchor bolts shall conform to ASTM A307, A193, or F1554.
3. Cast-in-Place Deck
 - a. Concrete shall be normal weight and 4000psi.
 - b. Galvanized metal deck pans shall be 20 gauge (minimum).
 - c. Aspects of concrete work, including but not limited to material properties, mix designs, plant and field quality control, and rebar placement including support and tying, shall be governed by AASHTO unless specified otherwise.
 - d. Reinforcing bars, when used, shall conform to AASHTO M31, M42, or M%#, grade 60.
4. Other Materials
 - a. Cementitious non-shrink grout, when applicable, shall meet ASTM C-1107, 7000 psi minimum.
 - b. Material not specified shall conform to applicable ASTM or AASHTO specifications.
 - c. Structural Timber: Toe and Rub Rail shall be min 2"x 6" and shall be treated with a waterborne preservative meeting the requirements of AWPA UC3B.
 - d. Railing shall be constructed as specified in Section 05 52 13, Handrails and Railings and DRAWINGS.

2.03 Fabrication and Workmanship

- A. Workmanship shall be first class throughout.
- B. Concrete decks shall be broomed transversely.
- C. Metal decking shall be secured with fasteners or welds as recommended by the decking manufacturer.
- D. Where water collection inside of structural tubing is possible during construction or service, weep holes shall be provided at low points.
- E. Welding
 1. Welding and weld qualification tests shall conform to the provisions of AWS D1.1. The flux core arc welding (FCAW) process with similar weathering characteristics as the base material shall be used.
 2. Weld operators shall be properly accredited experienced operators. Each shall have certification of satisfactorily passing AWS standard qualification test(s) and have demonstrated the ability to make acceptable welds of the type required.
 3. Nondestructive weld testing is required. Testing will be performed by a qualified ASNT Level II Technician or greater and paid for by the Bridge Manufacturer. All welds are to be 100% visually inspected. Ten percent (10%) of all differing fillet and partial penetration welds shall be magnetic particle tested. For arch type bridges, 100% of end of top chord to bottom chord connections shall be tested. Full penetration shop welds shall be Ultrasonic tested in accordance with AWS D1.1; Section 6. Base material certifications are to be supplied by the material suppliers. Inspection test results shall be available on request.
- F. Abrasive Blasting
 1. All structural steel shall be unpainted and self-weathering. All exposed surfaces, defined as those surfaces seen from the deck and from alongside the structure, shall be blast cleaned

in accordance with SSPC: The Society for Protective Coatings Specifications, latest edition,
(SSPC – SP 7) Brush-Off Blast Cleaning.

PART 3 - EXECUTION

3.01 Installation

- A. Install bridge and decking per manufacturer's recommendations.

END OF SECTION

SECTION 32 92 19

SOIL PREPARATION AND SEEDING

PART 1 - GENERAL

1.1 Section Includes

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Seeding.
- D. Mulching.

1.2 Quality Assurance

- A. Comply with requirements of state regulations regarding grass seed.
- B. Seed
 - 1. Provide seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging and location of packaging. Containers or packages shall be new and unopened.
 - 2. Seed shall not be used later than one year later than the test date appearing on the label.
 - 3. Sampling and testing of seed for purity, germination and weed seed content shall be in accordance with "Rules for Testing Seed" published by the Association of Official Seed Analysts.

1.3 Submittals

- A. Submit composition of seed mixture.
- B. Submit, upon request, manufacturer's certification that materials meet specification requirements.
- C. Submit, upon request, results of seed purity and germination tests.
- D. Submit topsoil test results for all topsoil borrow.

PART 2 - PRODUCTS

2.1 Topsoil

- A. Provide reclaimed topsoil from the site unless the contract documents require topsoil borrow.
- B. Reclaimed Topsoil: Topsoil stripped from the site consisting of loam, sandy loam, silt loam, or silty-clay loam, or clay loam, humus-bearing soil, adapted to sustaining plant life. The soil shall be free of subsoil, foreign matter, plant material, objects larger than one inch in any dimension, and toxic or other substances harmful to plant growth.
- C. Topsoil Borrow: Topsoil from offsite consisting of natural loam, sandy loam, silt loam, or silty-clay loam, or clay loam, humus-bearing soil, adapted to sustaining plant life. The soil shall be free of subsoil, foreign matter, plant material, objects larger than one inch in any dimension, and toxic or other substances harmful to plant growth. The soil shall have a pH range of 5.5 to 8.0 and a maximum soluble salt level of 500 PPM. Topsoil originating from agricultural fields shall be free of

residual herbicide and other contaminants.

2.2 Seed

- A. Seed mixtures shall be Madison Parks , or approved equal.

2.3 Mulch Materials

- A. Hay: Straw or hay in air-dry condition substantially free from noxious weed seeds or objectionable foreign matter.
- B. Paper Fiber: Mulch consisting of recycled newsprint fibers, wetting agent, deforming agent and green dye with a dry moisture content of 9 to 15 percent.
- C. Wood Cellulose: Wood cellulose fibers manufactured from virgin wood fibers that form a blotter-like ground cover that readily absorbs water and allows infiltration to the underlying soil. Moisture content shall not exceed 15 percent at the time of delivery. The mulch shall be dyed green and shall have the property of becoming dispersed and suspended when agitated in water.
- D. Erosion Control Revegetative Mat: A light duty, organic, non-netted mat with a minimum thickness of 3/8 inch and biodegradable yarn or glue on 12 inch maximum centers in the longitudinal direction. The mat shall be capable of withstanding moderate foot traffic without tearing or puncturing. Acceptable products are those listed in the Wisconsin Department of Transportation, Erosion Control Product Acceptability Lists for Class I, Type Urban mats. Anchoring devices shall be biodegradable, non-splintering and shall last for at least two months and shall substantially degrade in four months.

2.4 Tackifiers

- A. Latex-Base: A latex emulsion polymer with a composition by weight of 48 percent styrene, 50 percent butadiene and 2 percent additive; 42 to 46 percent solids; and a pH of 8.5 to 10.
- B. Guar Gum: Guar gum tackifiers consisting of a minimum of 95 percent Guar gum by weight with the remaining consisting of dispersing and cross-linking additives.
- C. Other: Water soluble natural vegetable gums or guar gums blended with gelling and hardening agents or a water soluble blend of hydrophilic polymers, viscosifiers, sticking aids and other gums.

PART 3 - EXECUTION

3.1 Inspection

- A. Examine area to receive soil preparation to ensure subsoil is ready for finish grading.
- B. Do not proceed with soil preparation until unsatisfactory conditions are corrected.

3.2 Preparation of Subsoil

- A. Eliminate uneven areas or low spots. Make changes in gradual and blend slopes into level areas.
- B. Do not prepare or place frozen soils or soils with excessive moisture.
- C. Remove weeds, roots, trash, debris, concrete, asphalt, crushed aggregate, and any stones larger than two inches in any dimension.
- D. Scarify subsoil to a depth of three inches.

3.3 Placing of Topsoil

- A. Spread topsoil evenly to a compacted depth of four inches.
- B. Place during dry weather.

- C. Grade to eliminate rough or low areas and to ensure positive drainage. Grading shall be approved by the Engineer.
- D. Remove stones and other objects larger than one inch in any dimension.

3.4 Seeding

- A. Do not sow seed on frozen soil or when wind exceeds 5 MPH.
- B. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.
- C. Seeding Dates:
 - 1. Spring/Summer: April 1 to August 14.
 - 2. Fall: August 15 to October 1.

- D. Application Rate:

Application Rate	
Mixture	Lbs/1000 Sq. Ft.
Madison Parks	4

- E. Broadcasting
 - 1. Sow seed evenly with a spreader or seeding machine.
 - 2. Do not broadcast or drop seed when wind velocity exceeds 5 MPH.
 - 3. Broadcast one half of seed.
 - 4. Broadcast remaining half of seed at right angles to first seed pattern.
 - 5. Cover seed to a depth of 1/4" by raking, dragging or cultipacting.
 - 6. Roll seeded area with roller weighing a maximum of 150 pounds per foot of roller width.
 - 7. Water seeded area with fine spray, if required, to promote growth.
- F. Drilling
 - 1. Drill seed following elevation contours.
 - 2. Seed to uniform depth.
 - 3. Roll seeded area with roller weighing a maximum of 150 pounds per foot of roller width.
 - 4. Water seeded area with fine spray, if required, to promote growth.

3.5 Mulching

- A. Place mulch on same day that the area is seeded.
- B. Do not place straw or hay mulch or sprayed-on mulches during periods of high wind.
- C. Mulch type and method is the Contractor's option unless a specific type or method is indicated on the Drawings or in the Contract Documents.
- D. Hay/Straw Mulch
 - 1. Method 1 - Spread straw or hay treated with a tackifier over the area using a blowing machine. Spread the material uniformly to a depth of 1/2 to 1 inch using 1 1/2 to 3 tons of material per acre. The amount of tackifier used shall be in accordance with the manufacturer's recommendations.
 - 2. Method 2 - Spread hay or straw over the area by hand or using a blowing machine. Spread the material uniformly to a depth of 1/2 to 1 1/2 inch using 1 1/2 to 3 tons of material per acre. Immediately after spreading, anchor the mulch into the soil using a mulch tiller.
- E. Paper Fiber: Apply with hydraulic spray equipment in a water slurry at the rate necessary to provide a 1/4 inch layer. Use the color of the material as a metering agent. Take care not to spray material on adjacent surfaces.
- F. Wood Cellulose: Apply with hydraulic spray equipment in a water slurry at the rate of 1500 pounds per acre. Use the color of the material as a metering agent. Take care not to spray material on adjacent surfaces.

- G. Mat: Remove all clods, stones or other materials that could damage the mat. Place mat over seeded area without overlapping. Anchor mat in accordance with the manufacturer's recommendations.

3.6 Establishment

- A. Establishment Period:
 - 1. For areas seeded during the spring or summer planting season the establishment period shall be 90 days.
 - 2. For areas seeded during the fall planting season the establishment period shall be through June 1 of the following year.
- B. Acceptable Establishment: At the end of the establishment period the grass shall be healthy, uniform in density and color, and substantially free of weeds with uniform coverage of at least 70 percent of a representative one square yard plot and bare spots not exceeding 6 inches by 6 inches.
- C. Re-seed areas that fail to grow an acceptable stand of grass.

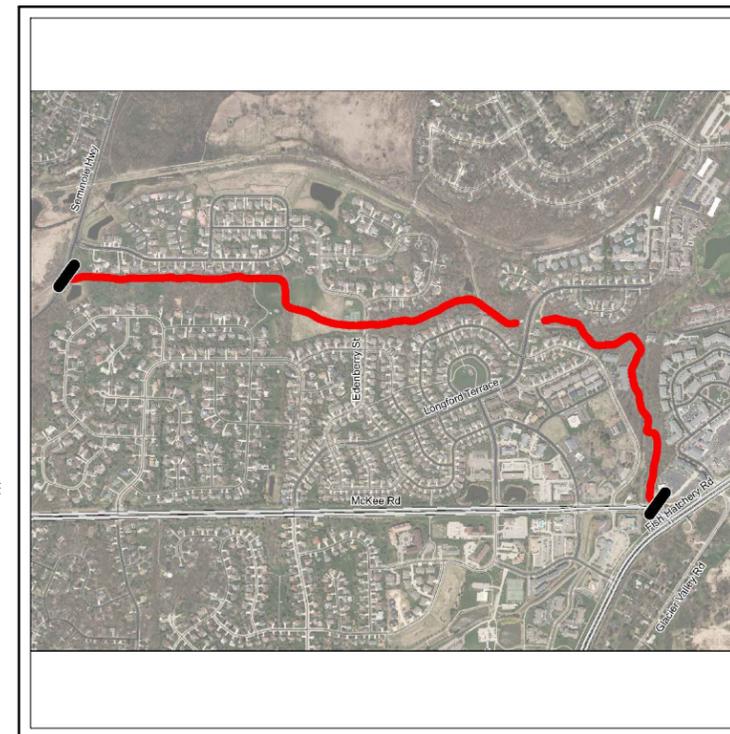
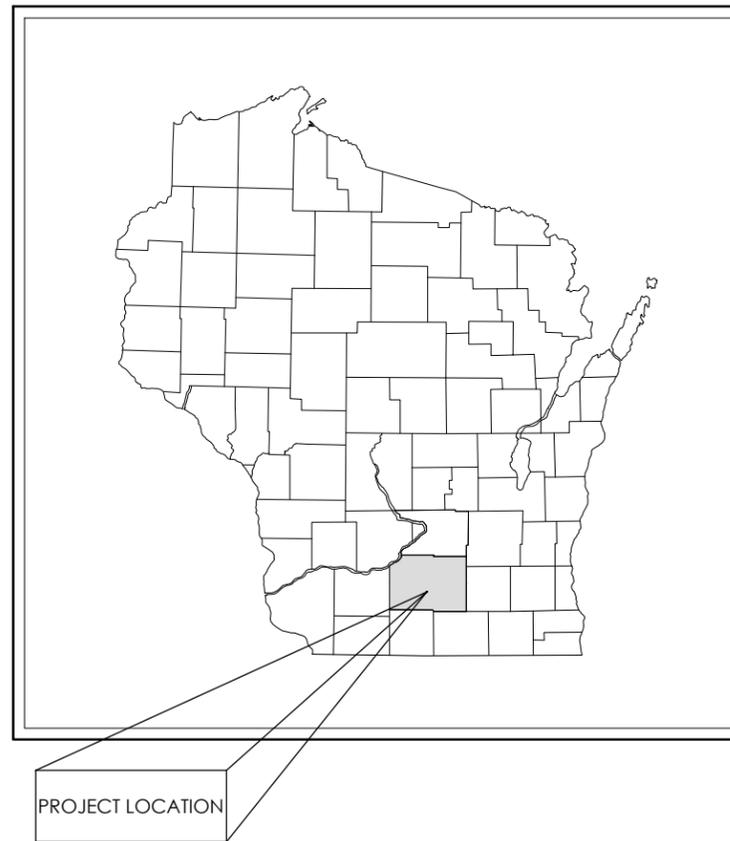
3.7 Protection

- A. Protect all seeded areas, as necessary, to prevent trampling and/or damage by erecting temporary fences, barriers, signs, etc.

END OF SECTION

2019 CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT

DANE COUNTY PARKS CITY OF FITCHBURG DANE COUNTY, WI



CAPITAL CITY TRAIL
LOCATION PLAN

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OWNER: DANE COUNTY PARKS
PROJECT CONTACT: RYAN SHORE, ENGINEERING PROJECT MANAGER (608) 266.4475
ENGINEER: GENERAL ENGINEERING COMPANY, KORY ANDERSON (608) 742.2169

ENGINEER SEAL:

SCALE

DRAWN BY	LAL
REVIEWED BY	KDA
ISSUE DATE	FEB 2019
GEC FILE NO.	2-1118-535
SHEET NO.	



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TITLE PAGE
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI

REVISIONS	NO.	BY	DATE

CONSTRUCTION NOTES

GENERAL

- ALL EXISTING UNDERGROUND AND OVERHEAD UTILITIES SHALL BE FIELD VERIFIED, BY CONTRACTOR, PRIOR TO CONSTRUCTION.
- ALL WORK IN ROAD RIGHT-OF-WAYS SHALL BE COORDINATED AND PERMITTED, BY CONTRACTOR, WITH THE LOCAL MUNICIPALITY (FITCHBURG).
- ALL ASPHALT REPAIRS/REPLACEMENT SHALL BE SAWCUT TO MATCH EXISTING PAVEMENT AS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- PAVING AND GRADING SHALL BE ADJUSTED TO MATCH EXISTING ELEVATIONS OF ADJACENT MANHOLES, CULVERTS, BRIDGES, SIDEWALKS, ROADWAYS, AND CONCRETE APRONS TO PROVIDE A SMOOTH TRANSITION AND ENSURE PROPER DRAINAGE, UNLESS OTHERWISE SPECIFIED ON PLANS.
- EXISTING TRAIL CENTERLINE AND DRAINAGE PATTERNS SHALL BE MAINTAINED.
- ANY FILL PLACED UNDER PAVED AREAS SHALL BE STRUCTURALLY SOUND.
- ALL SIGNS AND BENCHES ADJACENT TO TRAIL SHALL BE REMOVED/REPLACED BY OWNER.
- CONTRACTOR IS RESPONSIBLE FOR ALL TRAIL AND ROADWAY TRAFFIC CONTROL.
- THE PREFERRED WINDOW FOR CONSTRUCTION EQUIPMENT ALONG THE TRAIL IS 15 FEET WIDE AND 15 FEET HIGH.
- MINOR TREE TRIMMING MAY BE REQUIRED IN AREAS ALONG THE TRAIL TO ALLOW FOR CONSTRUCTION EQUIPMENT OR INSTALLATION OF PROPOSED BRIDGE. ALL TREE REMOVALS SHALL BE COORDINATED WITH AND APPROVED BY OWNER.
- TRAIL CONSTRUCTION IS FROM FISH HATCHERY ROAD TO SEMINOLE HIGHWAY (APPROX. 2.0 MILES).
- NO WORK SHALL BEGIN PRIOR TO JULY 8TH, 2019 AND ALL WORK SHALL BE COMPLETE BY NOVEMBER 1, 2019.
- TRAIL CLOSURE SHALL NOT EXCEED 6 CONSECUTIVE WEEKS.
- THE CONTRACTOR SHALL COORDINATE PHASING AND SCHEDULE WITH THE OWNER/ENGINEER AND PROVIDE TWO WEEKS NOTICE PRIOR TO ANY CLOSURE.
- TOPSOIL, SEED, AND MULCH SHALL BE SPREAD TO RESTORE ALL DISTURBED AREAS TO ORIGINAL GRADES.

SUMMARY OF WORK

TRAIL PAVEMENT IMPROVEMENTS
 FURNISH ALL LABOR, TOOLS, MATERIALS, AND EQUIPMENT TO PERFORM TRAIL PAVEMENT IMPROVEMENTS AND BRIDGE REPLACEMENT IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS, INCLUDING, BUT NOT LIMITED BY ENUMERATION:

GENERAL CONDITIONS

- MOBILIZATION/DEMOBILIZATION.
- SET UP AND MAINTAIN TRAFFIC CONTROL MEASURES. THE CONTRACTOR HAS TO CLOSE SECTIONS OF THE TRAIL FROM THE "ENTRY POINT TO THE ENTRY POINT".
- SET UP AND MAINTAIN EROSION CONTROL MEASURES.
- CLEARING AND GRUBBING, INCLUDING MOWING OF THE SHOULDER MAY BE NECESSARY. SOME TREES MAY NEED TO BE REMOVED FROM THE TRAIL TO ALLOW THE EQUIPMENT TO ACCESS THE AREA. REMOVAL OF THE TREES SHALL BE COORDINATED WITH THE OWNER.
- CONSTRUCTION OF PAVEMENT TYPE A.
- CONSTRUCTION OF PAVEMENT TYPE B.
- INSTALL AND SHAPE GRAVEL SHOULDERS.
- INSTALL BIKE/PED RAMP AT INTERSECTIONS WITH DETECTABLE WARNING FIELDS.
- TOPSOIL, SEED, AND MULCH DISTURBED AREAS.

CONSTRUCTION OF PAVEMENT TYPE A

- REMOVE AND DISPOSE OF EXISTING ASPHALT PAVEMENT, DEPTH OF EXISTING PAVEMENT MAY VARY.
- INSTALL MIN OF 3" THICK LAYER OF 3/4" CRUSHED AGGREGATE OVER THE EXISTING BASE.
- FINE GRADE THE BASE FOR THE PAVEMENT.
- INSTALL SURFACE LAYER OF PAVEMENT (ONE LIFT OF 3" OF 4 LT 58-28 S).
- SITE MAY REQUIRE ADDITIONAL GRADING OUTSIDE OF THE GRAVEL SHOULDER TO MATCH NEW RAISED TRAIL ELEVATION TO IMPROVE THE DRAINAGE. IT'S PRESUMED THAT GRADING WILL BE DONE UP TO 1.5 FT. OUT, TYPICAL BOTH SIDES.

CONSTRUCTION OF PAVEMENT TYPE B

- PULVERIZE EXISTING ASPHALT PAVEMENT, DEPTH OF EXISTING PAVEMENT MAY VARY.
- FINE GRADE THE PULVERIZED BASE FOR THE PAVEMENT.
- INSTALL SURFACE LAYER OF PAVEMENT (ONE LIFT OF 3" OF 4 LT 58-28 S).
- SITE MAY REQUIRE ADDITIONAL GRADING OUTSIDE OF THE GRAVEL SHOULDER TO MATCH NEW RAISED TRAIL ELEVATION TO IMPROVE THE DRAINAGE. IT'S PRESUMED THAT GRADING WILL BE DONE UP TO 1.5 FT. OUT, TYPICAL BOTH SIDES.

BRIDGE REPLACEMENT AND TRAIL REALIGNMENT

- REMOVE AND DISPOSE OF EXISTING BRIDGE STRUCTURES, RAILINGS, AND SECTION OF ASPHALT PAVEMENT.
- EXCAVATE AND PREPARE ABUTMENT LOCATIONS, DRILL HELICAL PILING, AND INSTALL CONCRETE ABUTMENTS.
- RIP RAP ABUTMENTS
- PROVIDE AND INSTALL BRIDGE STRUCTURE AND ABUTMENT RAILINGS
- INSTALL CONCRETE BRIDGE DECK AND BRIDGE APPROACHES WITH FINISH AND JOINTS
- EXCAVATE NEW TRAIL ALIGNMENT
- INSTALL AND COMPACT MINIMUM OF 6" THICK LAYER OF BREAKER RUN
- INSTALL, GRADE AND COMPACT MINIMUM OF 4-6" THICK LAYER OF 3/4" CRUSHED AGGREGATE BASE COURSE
- INSTALL AND SHAPE GRAVEL SHOULDERS.
- INSTALL SURFACE LAYER OF PAVEMENT (ONE LIFT OF 3" OF 4 LT 58-28 S)
- TOPSOIL, SEED, AND MULCH DISTURBED AREAS.

STREAMBANK RIP RAP

- EXCAVATE AND PREPARE BANK.
- INSTALL GEOTEXTILE FABRIC AND RIP RAP
- TOPSOIL, SEED AND MULCH DISTURBED AREAS.

EXISTING LINETYPES LEGEND

- San SANITARY SEWER
- ST STORM SEWER
- WM WATER MAIN
- FM FORCE MAIN
- E ELECTRIC
- OE OVERHEAD ELECTRIC
- G GAS
- FO FIBER OPTIC
- T TELEPHONE
- TV TV
- x-x-x-x FENCE
- o-o-o-o GUARD RAIL
- GL-GL-GL GRADING LIMITS
- SF-SF-SF SILT FENCE
- DB-DB-DB DOUBLE SEDIMENT BARRIER
- ||||| TREELINE

ABBREVIATION LIST

- B-B = BACK TO BACK
- BOC = BACK OF CURB
- BOP = BOTTOM OF PIPE
- BOW = BOTTOM OF WALL
- C-C = CENTER TO CENTER
- CL = CENTERLINE
- CP = CONTROL POINT
- DIA = DIAMETER
- ELEV = ELEVATION
- EOG = EDGE OF GRAVEL
- EOP = EDGE OF PAVEMENT
- EX = EXISTING
- FL = FLOW LINE
- FM = FORCE MAIN
- HC = HORIZONTAL CURVE
- HP = HIGH POINT
- IE = INVERT ELEVATION
- INL = INLET
- INV = INVERT
- IOS = INSIDE OF STRUCTURE
- L = LENGTH
- LN = LINE
- LP = LOW POINT
- MH = MANHOLE
- MIN = MINIMUM
- MP = MIDPOINT
- PC = POINT OF CURVE
- PI = POINT OF INTERSECTION
- PRO = PROPOSED
- PT = POINT OF TANGENT
- PVC = POINT OF VERTICAL CURVE
- PVI = POINT OF VERTICAL INTERSECTION
- PVMT = PAVEMENT
- PVT = POINT OF VERTICAL TANGENT
- R = RADIUS
- ROW = RIGHT OF WAY
- S = SANITARY SEWER SERVICE LATERAL
- SAN = SANITARY SEWER
- SE = SPOT ELEVATION
- ST = STORM SEWER
- STA = STATION
- STD = STANDARD
- TC = TOP OF CURB
- TOP = TOP OF PIPE
- TOW = TOP OF WALL
- TYP = TYPICAL
- UOS = UNLESS OTHERWISE SPECIFIED
- VC = VERTICAL CURVE
- W = WATER MAIN SERVICE LATERAL
- WM = WATER MAIN

SYMBOLS LEGEND

- EXISTING MANHOLE
- PROPOSED MANHOLE
- EXISTING HYDRANT
- PROPOSED HYDRANT
- VALVE
- CURB STOP
- TRACER WIRE TERMINAL BOX
- WELL
- PROPERTY CORNER
- LIGHT POLE
- POWER / TELEPHONE POLE
- GUY WIRE
- UTILITY PEDESTAL
- SIGN
- SOIL BORING
- MONITORING WELL
- MAILBOX
- POTENTIAL HAZARD
- BENCHMARK
- CONTROL POINT
- DECIDUOUS TREE
- CONIFEROUS TREE
- HANDICAP SYMBOL

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 Facilities Before You
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 1-800-242-8511
 Wis Statute 182.0175 (1974)
 Requires Min. 3 Work Days
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 MADISON, WI 53703
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 1610 Moorland Rd
 MADISON, WI 53713
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- WATER**
FITCHBURG WATER & UTILITIES
 5520 LACY RD.
 FITCHBURG, WI 53711
 PHONE: (608) 270-4200
- MUNICIPALITY**
CITY OF FITCHBURG
 5520 LACY RD.
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LEGEND & NOTES
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS
CITY OF FITCHBURG
DANE COUNTY, WI

REVISIONS	NO.	BY	DATE
Contacts, Construction & EC Notes	1	PARKS	4/1/19

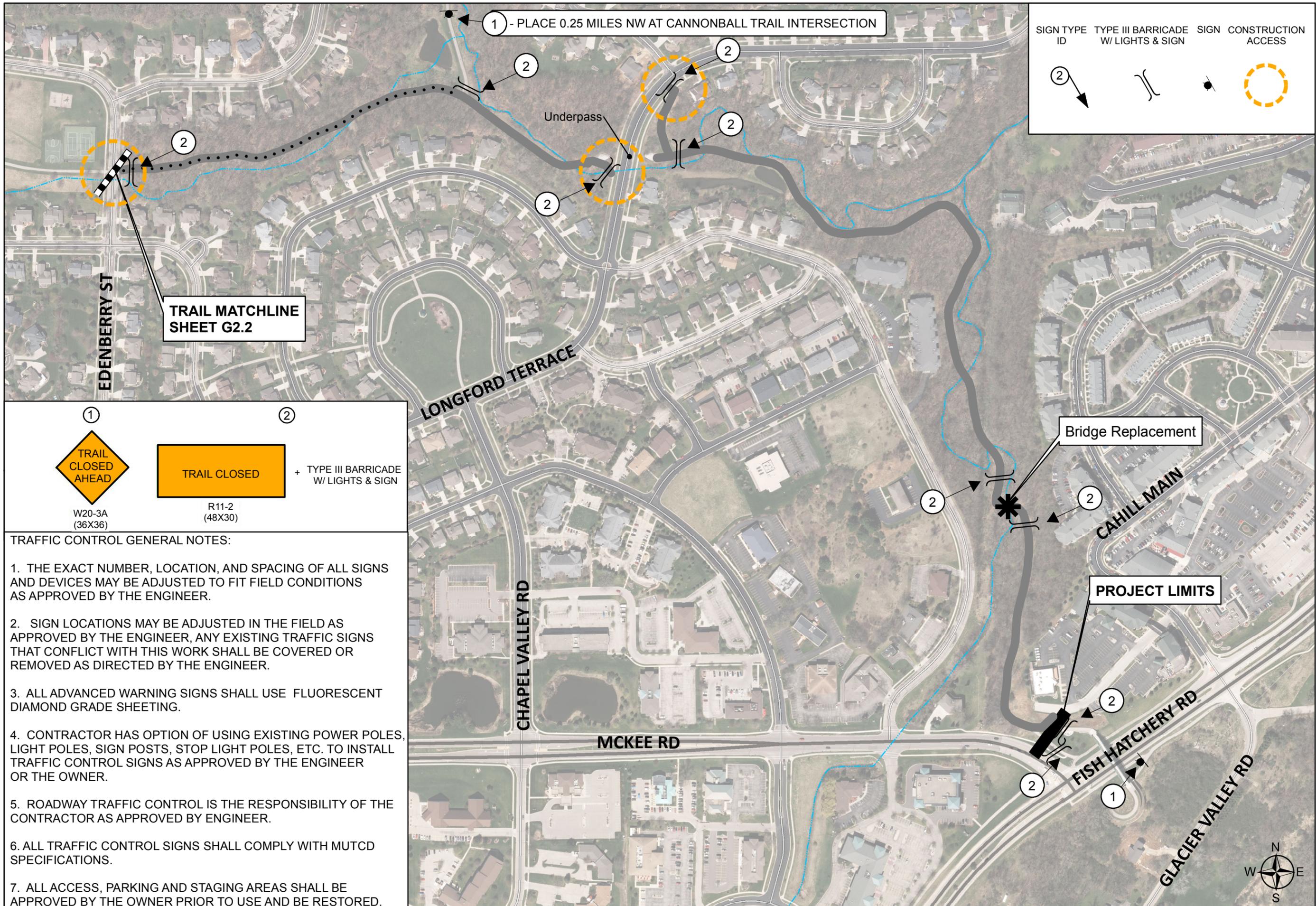
SCALE

DRAWN BY	LAL
REVIEWED BY	KDA
ISSUE DATE	FEB 2019
GEC FILE NO.	2-1118-535
SHEET NO.	



TRAIL TRAFFIC CONTROL PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI



SIGN TYPE ID	TYPE III BARRICADE W/ LIGHTS & SIGN	SIGN	CONSTRUCTION ACCESS
2			

①	②
W20-3A (36X36)	R11-2 (48X30)
	+ TYPE III BARRICADE W/ LIGHTS & SIGN

- TRAFFIC CONTROL GENERAL NOTES:**
1. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
 2. SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD AS APPROVED BY THE ENGINEER, ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
 3. ALL ADVANCED WARNING SIGNS SHALL USE FLUORESCENT DIAMOND GRADE SHEETING.
 4. CONTRACTOR HAS OPTION OF USING EXISTING POWER POLES, LIGHT POLES, SIGN POSTS, STOP LIGHT POLES, ETC. TO INSTALL TRAFFIC CONTROL SIGNS AS APPROVED BY THE ENGINEER OR THE OWNER.
 5. ROADWAY TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AS APPROVED BY ENGINEER.
 6. ALL TRAFFIC CONTROL SIGNS SHALL COMPLY WITH MUTCD SPECIFICATIONS.
 7. ALL ACCESS, PARKING AND STAGING AREAS SHALL BE APPROVED BY THE OWNER PRIOR TO USE AND BE RESTORED.

Drawn By ADD
Reviewed by CJ
Issue Date 4/1/19

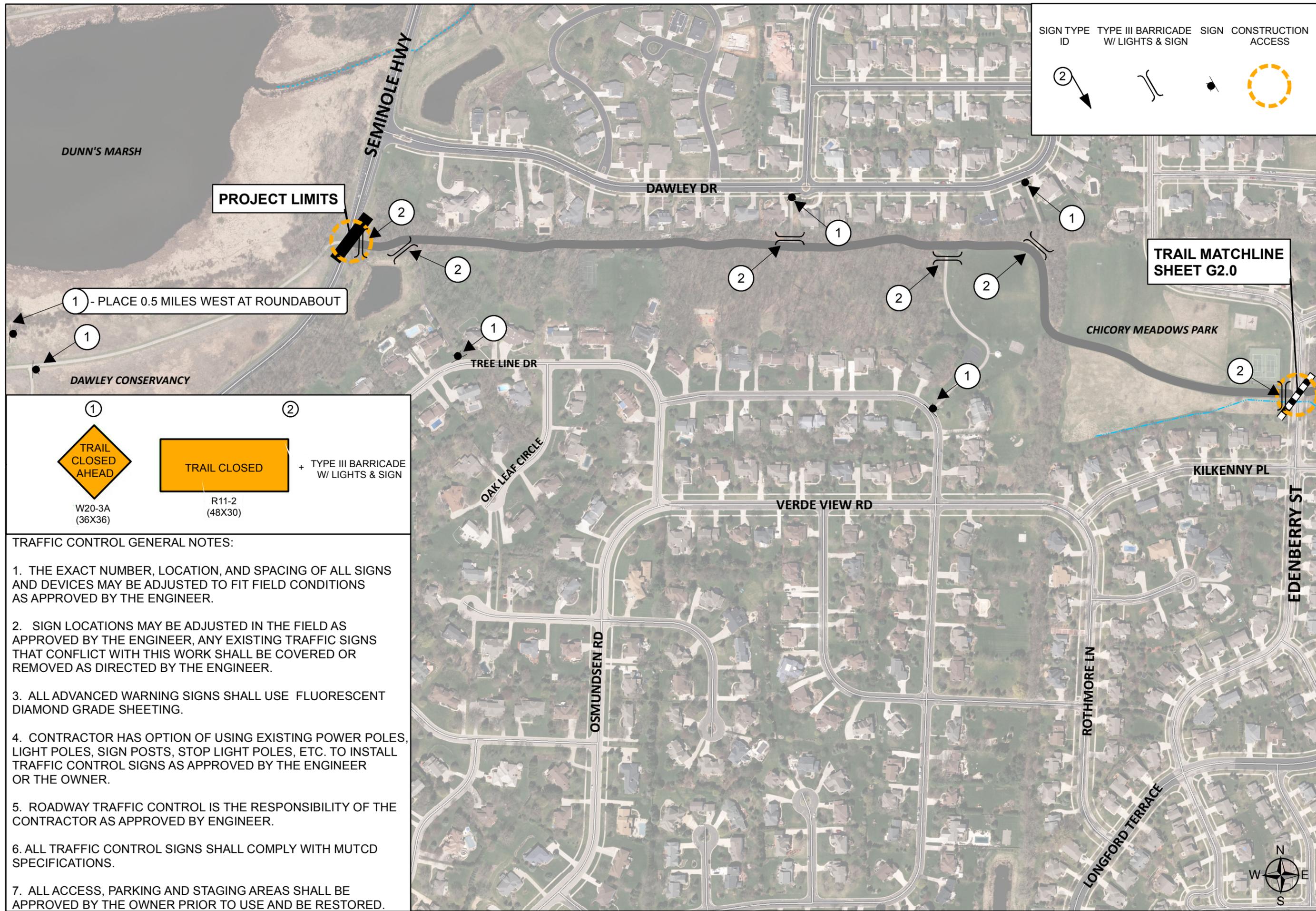


G2.0



TRAIL TRAFFIC CONTROL PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS

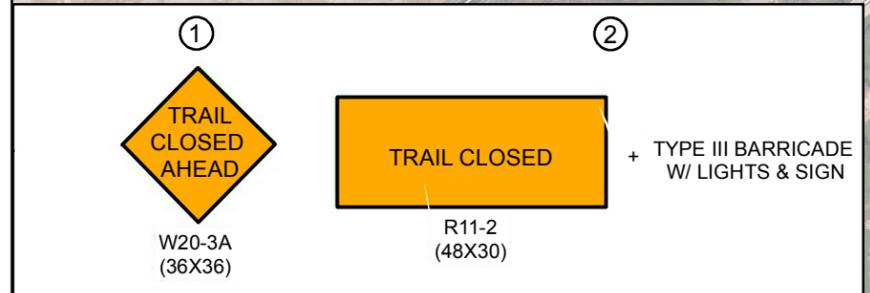
CITY OF FITCHBURG
DANE COUNTY, WI



PROJECT LIMITS

TRAIL MATCHLINE SHEET G2.0

① - PLACE 0.5 MILES WEST AT ROUNDABOUT



- TRAFFIC CONTROL GENERAL NOTES:**
1. THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS AND DEVICES MAY BE ADJUSTED TO FIT FIELD CONDITIONS AS APPROVED BY THE ENGINEER.
 2. SIGN LOCATIONS MAY BE ADJUSTED IN THE FIELD AS APPROVED BY THE ENGINEER, ANY EXISTING TRAFFIC SIGNS THAT CONFLICT WITH THIS WORK SHALL BE COVERED OR REMOVED AS DIRECTED BY THE ENGINEER.
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 4. CONTRACTOR HAS OPTION OF USING EXISTING POWER POLES, LIGHT POLES, SIGN POSTS, STOP LIGHT POLES, ETC. TO INSTALL TRAFFIC CONTROL SIGNS AS APPROVED BY THE ENGINEER OR THE OWNER.
 5. ROADWAY TRAFFIC CONTROL IS THE RESPONSIBILITY OF THE CONTRACTOR AS APPROVED BY ENGINEER.
 6. ALL TRAFFIC CONTROL SIGNS SHALL COMPLY WITH MUTCD SPECIFICATIONS.
 7. ALL ACCESS, PARKING AND STAGING AREAS SHALL BE APPROVED BY THE OWNER PRIOR TO USE AND BE RESTORED.

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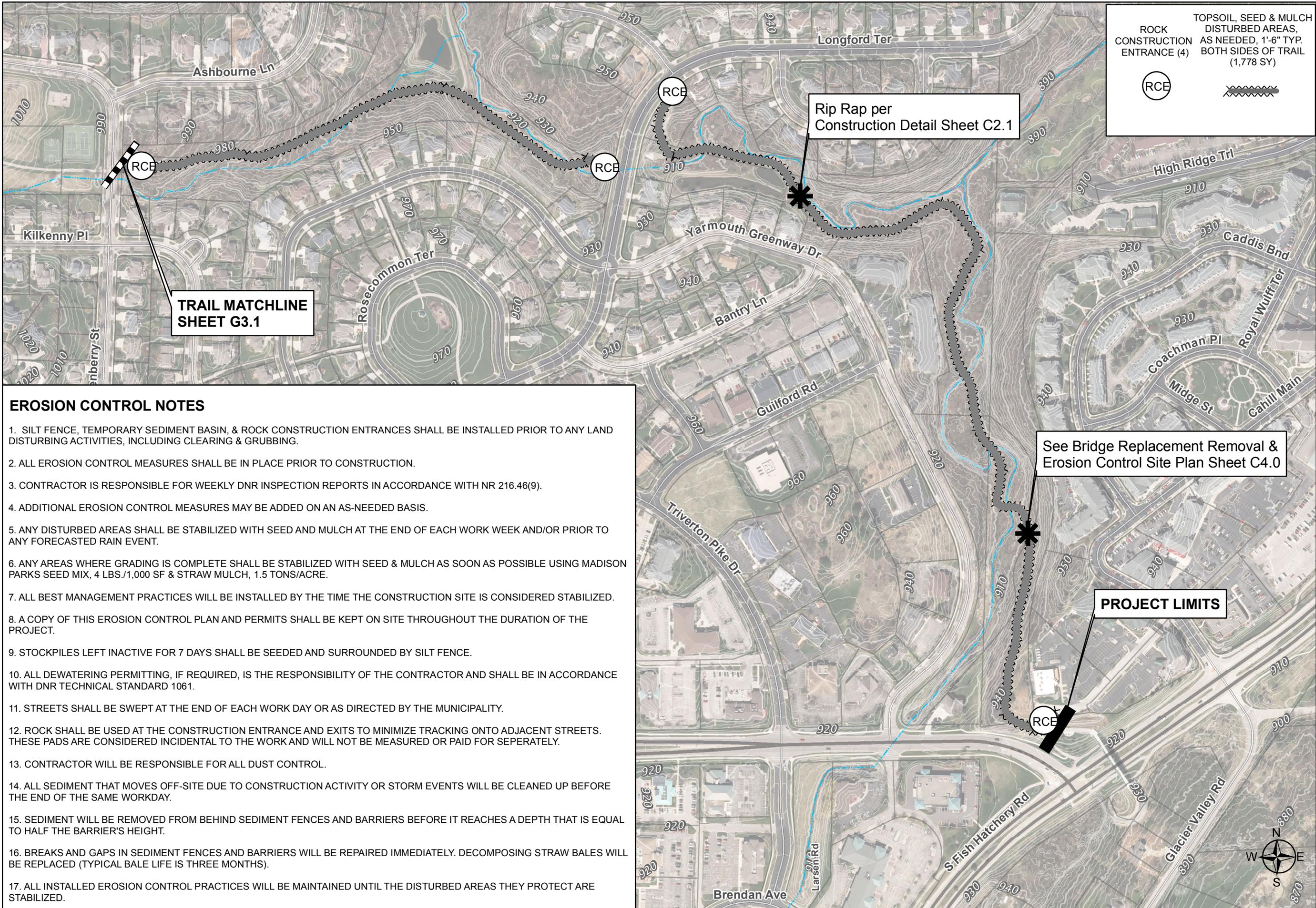


G2.1



ROCK CONSTRUCTION ENTRANCE (4)	TOPSOIL, SEED & MULCH DISTURBED AREAS, AS NEEDED, 1'-6" TYP. BOTH SIDES OF TRAIL (1,778 SY)

EROSION CONTROL PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS
 CITY OF FITCHBURG
 DANE COUNTY, WI



EROSION CONTROL NOTES

1. SILT FENCE, TEMPORARY SEDIMENT BASIN, & ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES, INCLUDING CLEARING & GRUBBING.
2. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR WEEKLY DNR INSPECTION REPORTS IN ACCORDANCE WITH NR 216.46(9).
4. ADDITIONAL EROSION CONTROL MEASURES MAY BE ADDED ON AN AS-NEEDED BASIS.
5. ANY DISTURBED AREAS SHALL BE STABILIZED WITH SEED AND MULCH AT THE END OF EACH WORK WEEK AND/OR PRIOR TO ANY FORECASTED RAIN EVENT.
6. ANY AREAS WHERE GRADING IS COMPLETE SHALL BE STABILIZED WITH SEED & MULCH AS SOON AS POSSIBLE USING MADISON PARKS SEED MIX, 4 LBS./1,000 SF & STRAW MULCH, 1.5 TONS/ACRE.
7. ALL BEST MANAGEMENT PRACTICES WILL BE INSTALLED BY THE TIME THE CONSTRUCTION SITE IS CONSIDERED STABILIZED.
8. A COPY OF THIS EROSION CONTROL PLAN AND PERMITS SHALL BE KEPT ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
9. STOCKPILES LEFT INACTIVE FOR 7 DAYS SHALL BE SEEDED AND SURROUNDED BY SILT FENCE.
10. ALL DEWATERING PERMITTING, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH DNR TECHNICAL STANDARD 1061.
11. STREETS SHALL BE SWEEPED AT THE END OF EACH WORK DAY OR AS DIRECTED BY THE MUNICIPALITY.
12. ROCK SHALL BE USED AT THE CONSTRUCTION ENTRANCE AND EXITS TO MINIMIZE TRACKING ONTO ADJACENT STREETS. THESE PADS ARE CONSIDERED INCIDENTAL TO THE WORK AND WILL NOT BE MEASURED OR PAID FOR SEPERATELY.
13. CONTRACTOR WILL BE RESPONSIBLE FOR ALL DUST CONTROL.
14. ALL SEDIMENT THAT MOVES OFF-SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS WILL BE CLEANED UP BEFORE THE END OF THE SAME WORKDAY.
15. SEDIMENT WILL BE REMOVED FROM BEHIND SEDIMENT FENCES AND BARRIERS BEFORE IT REACHES A DEPTH THAT IS EQUAL TO HALF THE BARRIER'S HEIGHT.
16. BREAKS AND GAPS IN SEDIMENT FENCES AND BARRIERS WILL BE REPAIRED IMMEDIATELY. DECOMPOSING STRAW BALES WILL BE REPLACED (TYPICAL BALE LIFE IS THREE MONTHS).
17. ALL INSTALLED EROSION CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE DISTURBED AREAS THEY PROTECT ARE STABILIZED.

Drawn By ADD
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 Issue Date 4/1/19



G3.0



EROSION CONTROL PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION & BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI

ROCK CONSTRUCTION ENTRANCE (2)	TOPSOIL, SEED & MULCH DISTURBED AREAS, AS NEEDED, 1'-6" TYP. BOTH SIDES OF TRAIL (1,222 SY)



EROSION CONTROL NOTES

1. SILT FENCE, TEMPORARY SEDIMENT BASIN, & ROCK CONSTRUCTION ENTRANCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES, INCLUDING CLEARING & GRUBBING.
2. ALL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR WEEKLY DNR INSPECTION REPORTS IN ACCORDANCE WITH NR 216.46(9).
4. ADDITIONAL EROSION CONTROL MEASURES MAY BE ADDED ON AN AS-NEEDED BASIS.
5. ANY DISTURBED AREAS SHALL BE STABILIZED WITH SEED AND MULCH AT THE END OF EACH WORK WEEK AND/OR PRIOR TO ANY FORECASTED RAIN EVENT.
6. ANY AREAS WHERE GRADING IS COMPLETE SHALL BE STABILIZED WITH SEED & MULCH AS SOON AS POSSIBLE USING MADISON PARKS SEED MIX, 4 LBS./1,000 SF & STRAW MULCH, 1.5 TONS/ACRE.
7. ALL BEST MANAGEMENT PRACTICES WILL BE INSTALLED BY THE TIME THE CONSTRUCTION SITE IS CONSIDERED STABILIZED.
8. A COPY OF THIS EROSION CONTROL PLAN AND PERMITS SHALL BE KEPT ON SITE THROUGHOUT THE DURATION OF THE PROJECT.
9. STOCKPILES LEFT INACTIVE FOR 7 DAYS SHALL BE SEEDED AND SURROUNDED BY SILT FENCE.
10. ALL DEWATERING PERMITTING, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR AND SHALL BE IN ACCORDANCE WITH DNR TECHNICAL STANDARD 1061.
11. STREETS SHALL BE SWEEPED AT THE END OF EACH WORK DAY OR AS DIRECTED BY THE MUNICIPALITY.
12. ROCK SHALL BE USED AT THE CONSTRUCTION ENTRANCE AND EXITS TO MINIMIZE TRACKING ONTO ADJACENT STREETS. THESE PADS ARE CONSIDERED INCIDENTAL TO THE WORK AND WILL NOT BE MEASURED OR PAID FOR SEPERATELY.
13. CONTRACTOR WILL BE RESPONSIBLE FOR ALL DUST CONTROL.
14. ALL SEDIMENT THAT MOVES OFF-SITE DUE TO CONSTRUCTION ACTIVITY OR STORM EVENTS WILL BE CLEANED UP BEFORE THE END OF THE SAME WORKDAY.
15. SEDIMENT WILL BE REMOVED FROM BEHIND SEDIMENT FENCES AND BARRIERS BEFORE IT REACHES A DEPTH THAT IS EQUAL TO HALF THE BARRIER'S HEIGHT.
16. BREAKS AND GAPS IN SEDIMENT FENCES AND BARRIERS WILL BE REPAIRED IMMEDIATELY. DECOMPOSING STRAW BALES WILL BE REPLACED (TYPICAL BALE LIFE IS THREE MONTHS).
17. ALL INSTALLED EROSION CONTROL PRACTICES WILL BE MAINTAINED UNTIL THE DISTURBED AREAS THEY PROTECT ARE STABILIZED.

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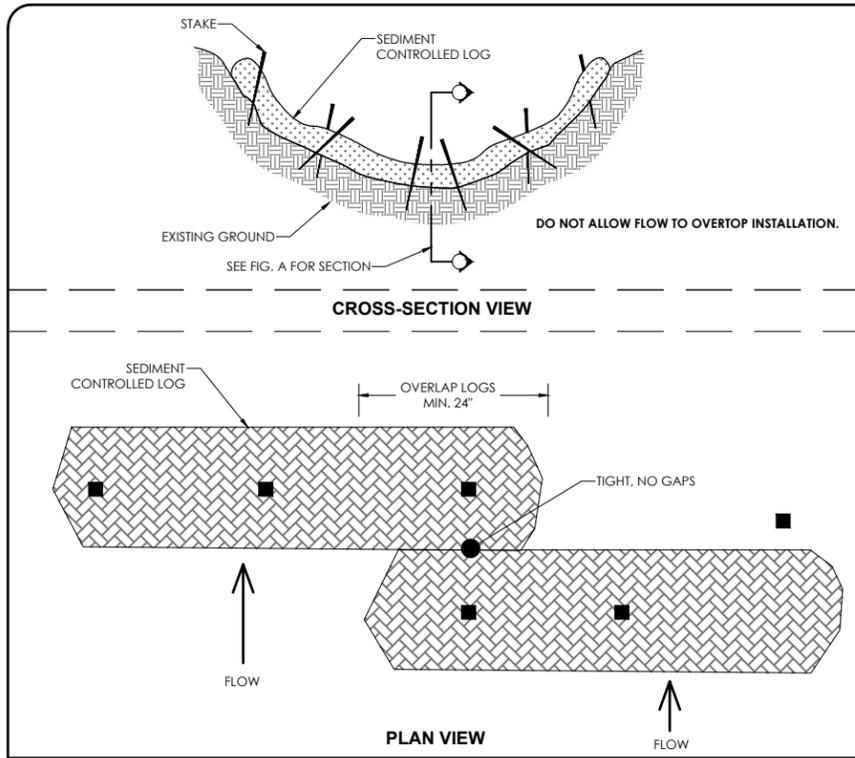


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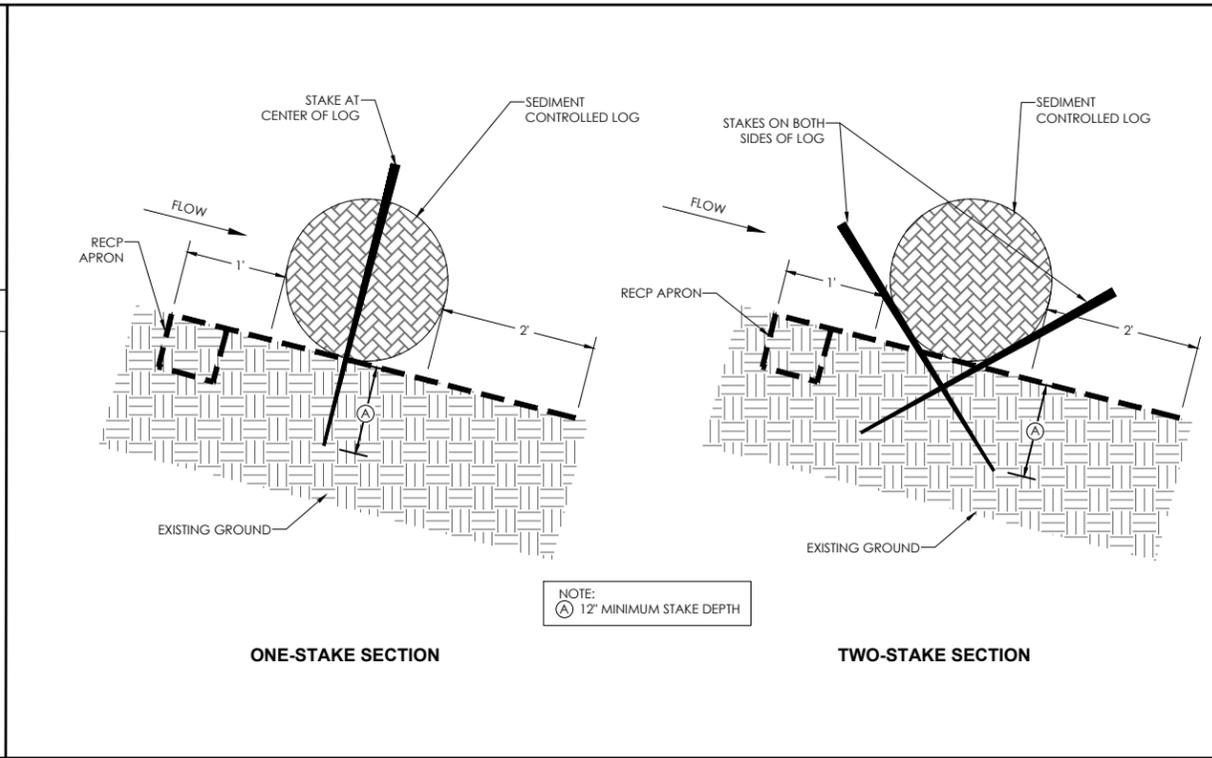
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EROSION CONTROL DETAILS
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS

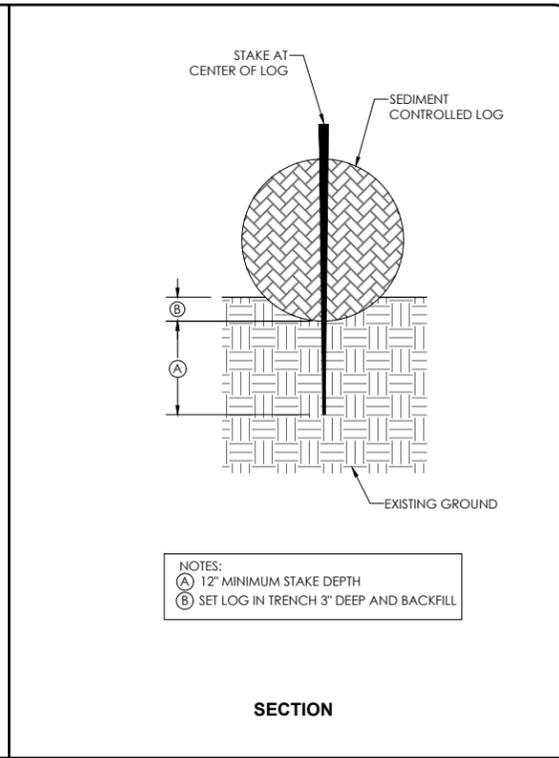
CITY OF FITCHBURG
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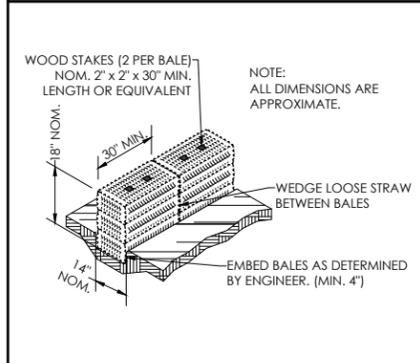
LOG OVERLAP DETAIL



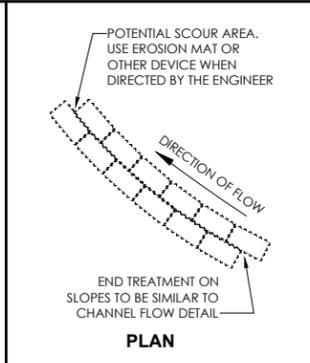
SLOPE/CHANNEL INSTALLATION (FIG. A)



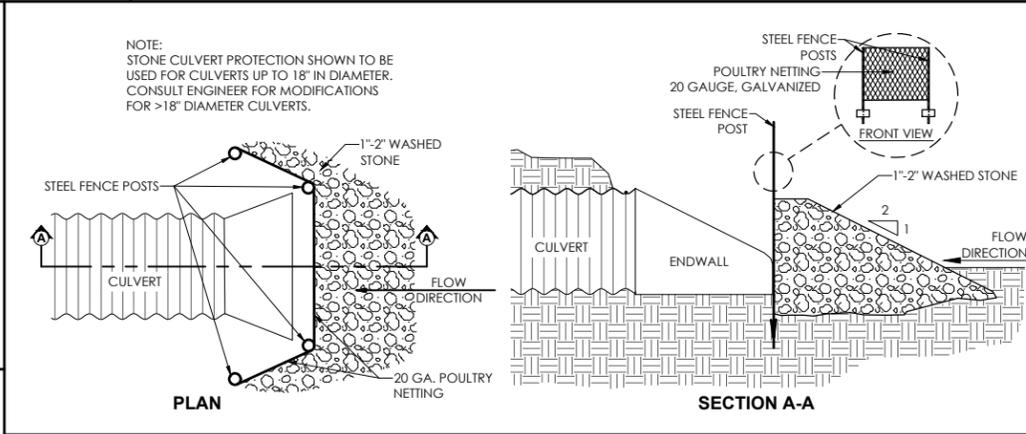
FLAT GROUND INSTALLATION (FIG. B)



EROSION BALE INSTALLATION



EROSION BALE FOR ALTERING FLOW DIRECTION



STONE CULVERT PROTECTION

INSTALLATION INSTRUCTIONS - LOGS AND WATTLES:

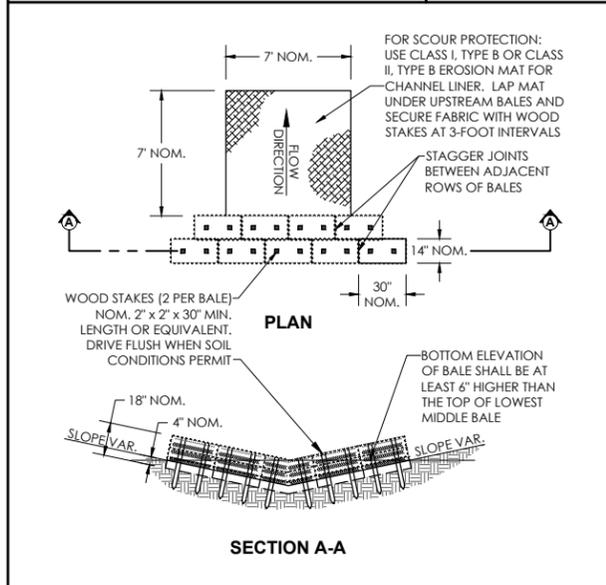
STEP 1 - SITE PREPARATION
 PREPARE SITE TO DESIGN PROFILE AND GRADE. REMOVE DEBRIS, ROCKS, CLODS, ETC. GROUND SURFACE SHOULD BE SMOOTH PRIOR TO INSTALLATION TO ENSURE LOG REMAINS IN CONTACT WITH SLOPE.

STEP 2 - STAPLE SELECTION
 AT A MINIMUM, 1" LONG BY 1" BY 24", STAKES ARE TO BE USED TO SECURE THE LOG TO THE GROUND SURFACE. INSTALLATION IN ROCKY, SANDY OR OTHER LOOSE SOIL MAY REQUIRE LONGER STAKES.

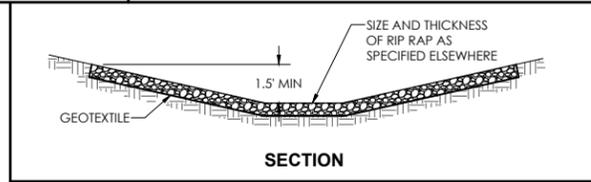
SLOPE INSTALLATION
 PLACE RECP ALONG SLOPE TO PROVIDE UPSTREAM APRON FOR LOG. SECURE RECP ACCORDING TO STANDARD SLOPE INSTALLATION INSTRUCTIONS INCLUDING UPSTREAM ANCHOR TRENCH. SECURE LOG TO BLANKET, ENSURING LOG REMAINS IN INTIMATE CONTACT WITH THE RECP OVER THE LENGTH OF THE INSTALLATION. A MINIMUM ONE FOOT UPSTREAM APRON AND TWO FOOT DOWNSTREAM APRON ARE REQUIRED FOR INSTALLATION. SUBSEQUENT, DOWNSLOPE ROWS OF LOGS SHOULD BE SPACED APPROPRIATELY FOR SITE CONDITIONS TO MINIMIZE ACCELERATION OF FLOW. FURTHER, LOG SEAMS ARE TO BE OFFSET TO ENSURE CONTINUOUS FILTRATION. FIGURE A PRESENTS A SCHEMATIC OF A SLOPE INSTALLATION IN PROFILE VIEW.

CHANNEL INSTALLATION
 PLACE RECP ALONG CHANNEL TO PROVIDE UPSTREAM AND DOWNSTREAM APRON FOR LOG IDENTICALLY TO SLOPE INSTALLATION. SECURE LOG TO BLANKET, ENSURING LOG REMAINS IN INTIMATE CONTACT WITH THE RECP OVER THE LENGTH OF THE INSTALLATION. A MINIMUM OF ONE FOOT UPSTREAM APRON AND TWO FOOT DOWNSTREAM APRON ARE REQUIRED FOR INSTALLATION. SUBSEQUENT, DOWNSLOPE ROWS OF LOGS SHOULD BE SPACED APPROPRIATELY FOR SITE CONDITIONS TO MINIMIZE ACCELERATION OF FLOW. FURTHER, LOG SEAMS ARE TO BE OFFSET TO ENSURE CONTINUOUS FILTRATION. FIGURE A AND FIGURE C PRESENT A SCHEMATIC OF A CHANNEL INSTALLATION.

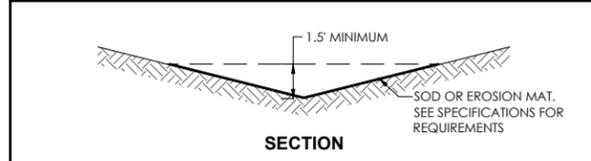
DRAIN FILTER INSTALLATION
 SURROUND DRAIN INLET TO BE PROTECTED WITH LOG, ENSURING SEAMS ARE OVERLAPPING TO MINIMIZE FLOW CIRCUMVENTING LOG. SECURE LOGS TO GROUND SURFACE ENSURING THE LOG REMAINS IN INTIMATE CONTACT WITH THE GROUND SURFACE OVER THE ENTIRE INSTALLATION. PROVIDE RECP APRON SECURED TO THE GROUND SURFACE BETWEEN DRAIN AND LOG.



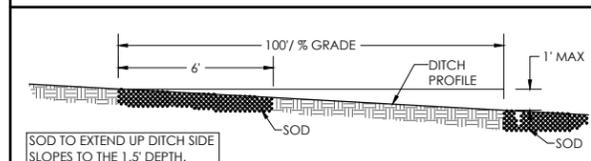
EROSION BALE FOR CHANNEL FLOW



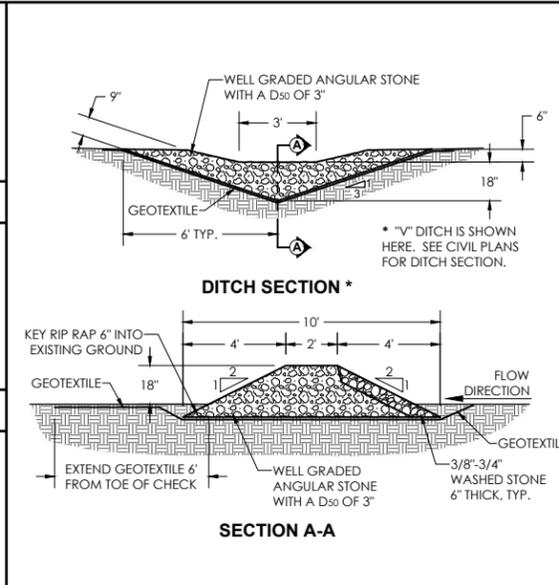
TYPICAL RIP RAP IN DITCH



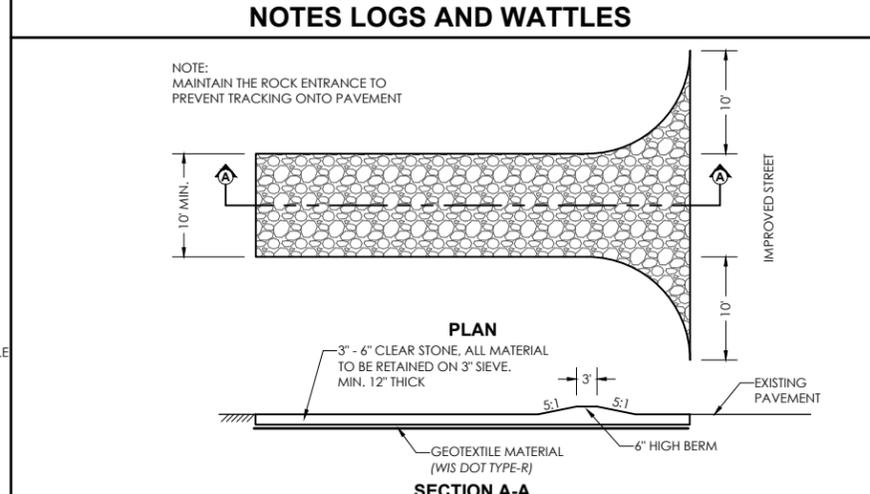
DITCH EROSION CONTROL



SOD DITCH CHECKS



STONE DITCH CHECK



ROCK CONSTRUCTION ENTRANCE

REVISIONS	NO.	BY	DATE



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 REVIEWED BY: KDA
 ISSUE DATE: FEB 2019
 GEC FILE NO.: 2-1118-535
 SHEET NO.

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

- FABRIC SHALL BE SHALL 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	ASTM D 4632	120
CROSS DIRECTION		100
MAX. APPARENT OPENING SIZE, US SIEVE	ASTM D 4751	NO. 30
PERMITTIVITY, SEC-1, MIN.	ASTM D 4491	0.05
MIN. UV STABILITY AT 500 HRS, %	ASTM D 4355	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".
- B. STAKES: WOOD STAKES WITH MINIMUM 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 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 SEED 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 (6 MONTHS OR GREATER), LIGHT DUTY, ORGANIC, "EROSION CONTROL REVEGETATIVE MAT" (ECRM) MEANT FOR USE IN URBAN AREAS, OR LAWNS, WHERE MOWING MAY BE ACCOMPLISHED WITHIN TWO WEEKS WITH LITTLE OR NO SNAGGING OF THE NETTING OR MAT. ALL TYPE URBAN MATS SHALL CONFORM TO THE REQUIREMENTS FOR EROSION MATS, WITH THE FOLLOWING MODIFICATIONS:
 - 1.1. URBAN MATS NETTING MUST BE 100% ORGANIC BIODEGRADABLE. THIS SHALL INCLUDE PARENT MATERIAL, STITCHING, AND NETTING.
 - 1.2. CLASS I TYPE B URBAN MATS MAY BE SINGLE, DOUBLE OR NO NETTED PRODUCTS.
 - 1.3. THE MINIMUM MAT THICKNESS SHALL BE 3/8 INCH (9 MM) AS MEASURED IN PLACE.
 - 1.4. ALL PRODUCTS APPROVED IN URBAN TYPE A CATEGORY WILL BE ALLOWED ON SLOPES UP TO 4:1.
 - 1.5. SLOPES THAT ARE BETWEEN 4:1 AND 2.5:1 ARE REQUIRED TO USE MATS IN THE URBAN TYPE B CATEGORY.
 - 1.6. THE NETTING SHALL BE STITCHED TO PREVENT SEPARATION OF THE NET FROM THE PARENT MATERIAL.
 - 1.7. THE NETTING SHALL BE CAPABLE OF WITHSTANDING MODERATE FOOT TRAFFIC WITHOUT TEARING OR PUNCTURING, AND SHALL BE IN ACCORDANCE WITH SECTION 628 OF THE WISDOT STANDARD SPECIFICATIONS.
 - 1.8. NEITHER THE NETTING, NOR THE INSTALLATION, SHALL POSE A SAFETY RISK TO PEDESTRIANS WALKING ON, OR CROSSING IT.
- C. ANCHORING DEVICES (URBAN)
 - 1. ALL MATERIALS AND ADDITIVE COMPONENTS THAT ARE USED TO MANUFACTURE THE ANCHORING DEVICES SHALL BE COMPLETELY BIODEGRADABLE AS DETERMINED BY ASTM D 5338-92.
 - 2. ALL MATERIALS SHALL BE ENVIRONMENTALLY SAFE, AND SHALL HAVE NO POTENTIAL FOR SOIL AND/OR WATER CONTAMINATION.
 - 3. STEEL WIRE PINS OR STAPLES WILL NOT BE APPROVED.
 - 4. PETROLEUM BASED PLASTICS OR COMPOSITES CONTAINING PETROLEUM BASED PLASTICS WILL NOT BE ALLOWED.
 - 5. MATERIALS DEEMED TO PRESENT A HAZARD FROM SPLINTERING OR SPEARING WILL NOT BE APPROVED. THIS SHALL INCLUDE SOLID WOOD DEVICES. HOWEVER, DEVICES MANUFACTURED FROM WOOD BYPRODUCTS MAY BE APPROVED.
 - 6. THE ANCHORING DEVICES SHALL MAINTAIN THEIR MECHANICAL ANCHORING ABILITY FOR AT LEAST 2 (TWO) MONTHS, AND SUBSTANTIALLY DEGRADE WITHIN 4 (FOUR) MONTHS DURING THE MONTHS OF WARM SOIL CONDITIONS (ABOVE 53 DEGREES F).
 - 7. THE ANCHORING DEVICES SHALL BE SHAPED, USING BARBS, TWISTS, BENDS, OR OTHER METHODS, TO PROVIDE ADDITIONAL MECHANICAL PULL RESISTANCE WHEN INSTALLED IN THE SOIL.
- D. 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 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 1/2 INCH. USE IN ENVIRONMENTALLY SENSITIVE AREAS THAT HAVE A HIGH PROBABILITY OF ENTRAPPING ANIMALS IN THE PLASTIC NETTING.

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 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 TO USE FOR THE INSPECTIONS.



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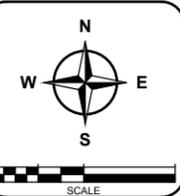
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EROSION CONTROL SPECIFICATIONS
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI

REVISIONS	NO.	BY	DATE



DRAWN BY	LAL
REVIEWED BY	KDA
ISSUE DATE	FEB 2019
GEC FILE NO.	2-1118-535
SHEET NO.	

G5.0

SPECIFICATIONS



TRAIL PAVEMENT RESTORATION PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI



Install Fitchburg Bike Path Ramp
Detail 1/C2.0

Install Fitchburg Sidewalk Ramp
Detail 1/C2.0

Install Rip Rap Per
Construction Details Sheet C2.1

Remove solar lights embedded in asphalt

TRAIL MATCHLINE
SHEET C1.1

Remove Box Culverts, Realign Trail and
Install Bridge per Bridge Replacement Plans

Install Fitchburg Bike Path Ramp
Detail 1/C2.0

PROJECT LIMITS

LEGEND
FISH HATCHERY RD TO EDENBERRY ST:

 PAVEMENT TYPE A - APPROX. 5,500 FT

 To Obtain Location of Participants Underground Facilities Before You Dig in Wisconsin

CALL DIGGERS HOTLINE
1-800-242-8511

Wis Statute 182.0175 (1974)
Requires Min. 3 Work Days
Notice Before You Excavate

Drawn By ADD
Reviewed by CJ
Issue Date 4/1/19

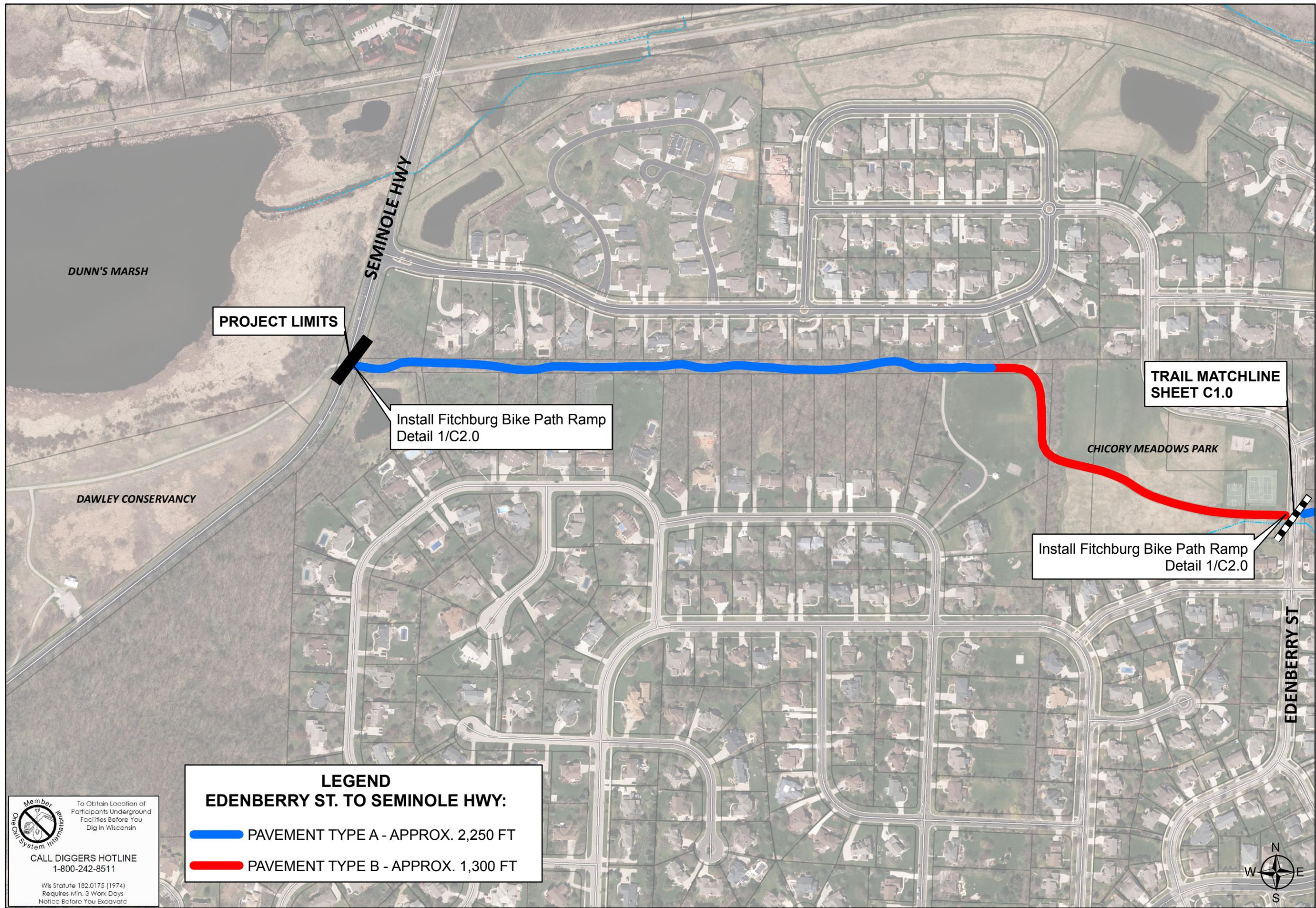


C1.0



TRAIL PAVEMENT RESTORATION PLAN
CAPITAL CITY TRAIL PAVEMENT RESTORATION
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI



PROJECT LIMITS

Install Fitchburg Bike Path Ramp
Detail 1/C2.0

TRAIL MATCHLINE SHEET C1.0

Install Fitchburg Bike Path Ramp
Detail 1/C2.0

LEGEND
EDENBERRY ST. TO SEMINOLE HWY:

-  PAVEMENT TYPE A - APPROX. 2,250 FT
-  PAVEMENT TYPE B - APPROX. 1,300 FT

 To Obtain Location of Participants Underground Facilities Before You Dig In Wisconsin
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1-800-242-8511
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Reviewed by CJ
Issue Date 4/1/19



C1.1



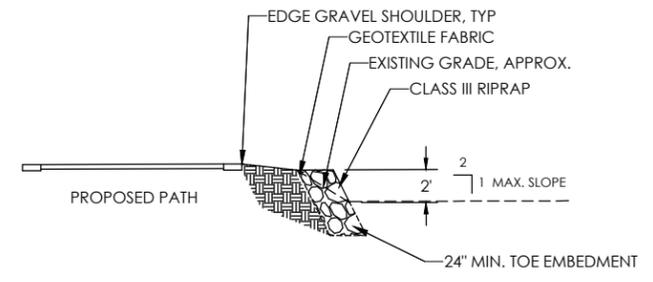
- NOTES:
1. ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
 2. ALL GENERAL NOTES FOUND ON SHEET G1.1.
 3. TOPSOIL, SEED, AND MULCH WITH CLASS 1, TYPE A URBAN MAT ALL DISTURBED AREAS.

Member
 Optical System International
 To Obtain Location of Participants Underground Facilities Before You Dig in Wisconsin
CALL DIGGERS HOTLINE
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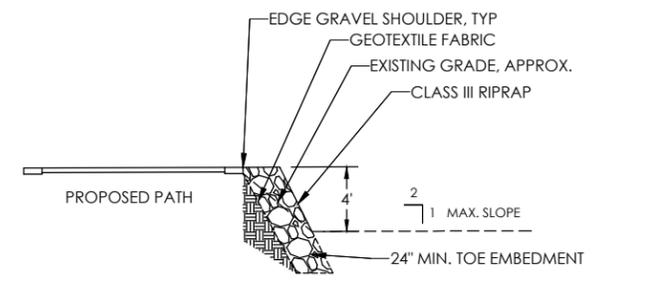
DOWNSTREAM (LOOKING SOUTHEAST)



TYPICAL CROSS SECTIONS



CROSS SECTION A
 SCALE: 1" = 10'



CROSS SECTION B
 SCALE: 1" = 10'



CONSTRUCTION DETAILS
 CAPITAL CITY TRAIL PAVEMENT RESTORATION
 DANE COUNTY PARKS
 CITY OF FITCHBURG
 DANE COUNTY, WI

NO.	DATE	BY

SCALE

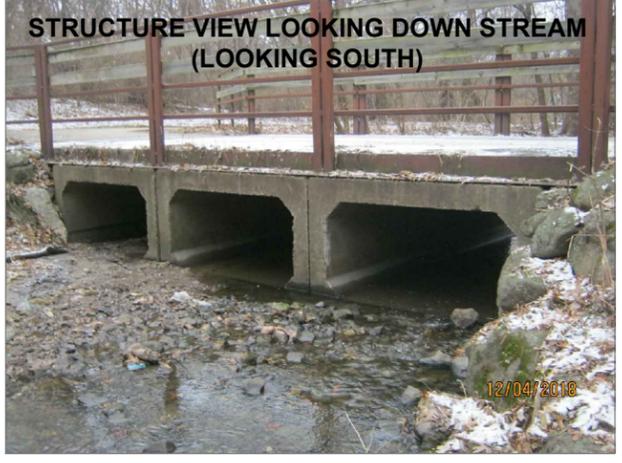
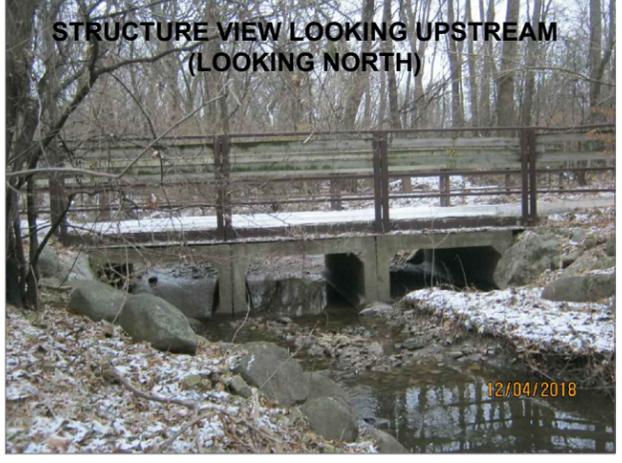
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DIGGERS HOTLINE
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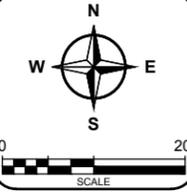
BENCHMARK	DESCRIPTION	ELEVATION
CP3	NAIL IN THE PAVEMENT	910.60'
CP4	NAIL IN THE PAVEMENT	909.00'
MH	MANHOLE RIM ELEVATION (NORTHWEST CORNER)	907.73'



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EXISTING SITE PLAN
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS
 CITY OF FITCHBURG
 DANE COUNTY, WI

REVISIONS	NO.	BY	DATE



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C3.0



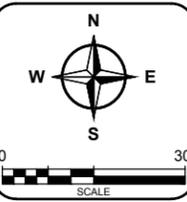
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**REMOVAL AND E.C. SITE PLAN
 CAPITAL CITY TRAIL BRIDGE REPLACEMENT
 DANE COUNTY PARKS**

CITY OF FITCHBURG
 DANE COUNTY, WI

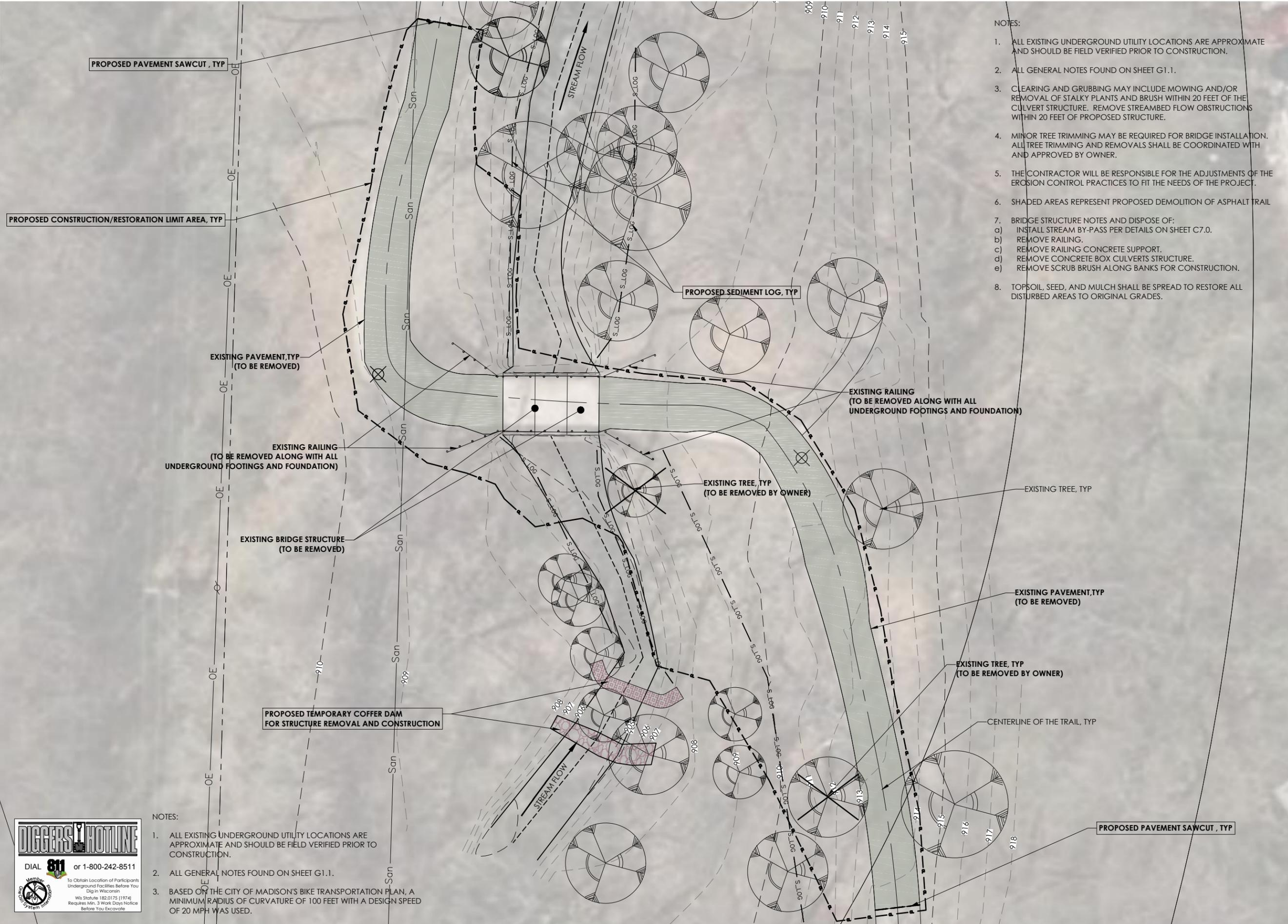
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NOTES:

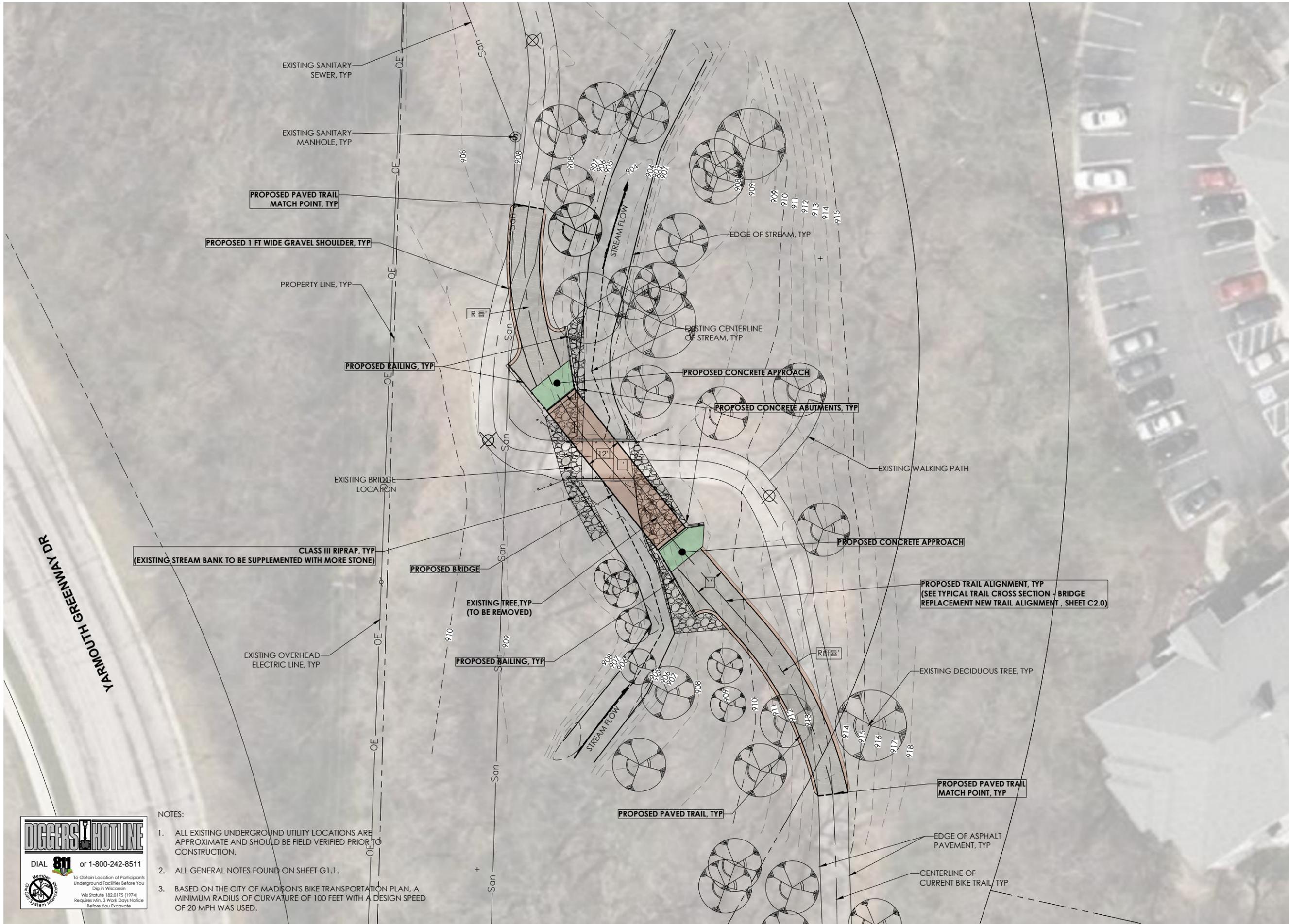
- ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL GENERAL NOTES FOUND ON SHEET G1.1.
- CLEARING AND GRUBBING MAY INCLUDE MOWING AND/OR REMOVAL OF STALKY PLANTS AND BRUSH WITHIN 20 FEET OF THE CULVERT STRUCTURE. REMOVE STREAMBED FLOW OBSTRUCTIONS WITHIN 20 FEET OF PROPOSED STRUCTURE.
- MINOR TREE TRIMMING MAY BE REQUIRED FOR BRIDGE INSTALLATION. ALL TREE TRIMMING AND REMOVALS SHALL BE COORDINATED WITH AND APPROVED BY OWNER.
- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE ADJUSTMENTS OF THE EROSION CONTROL PRACTICES TO FIT THE NEEDS OF THE PROJECT.
- SHADED AREAS REPRESENT PROPOSED DEMOLITION OF ASPHALT TRAIL
- BRIDGE STRUCTURE NOTES AND DISPOSE OF:
 - INSTALL STREAM BY-PASS PER DETAILS ON SHEET C7.0.
 - REMOVE RAILING.
 - REMOVE RAILING CONCRETE SUPPORT.
 - REMOVE CONCRETE BOX CULVERTS STRUCTURE.
 - REMOVE SCRUB BRUSH ALONG BANKS FOR CONSTRUCTION.
- TOPSOIL, SEED, AND MULCH SHALL BE SPREAD TO RESTORE ALL DISTURBED AREAS TO ORIGINAL GRADES.



NOTES:

- ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
- ALL GENERAL NOTES FOUND ON SHEET G1.1.
- BASED ON THE CITY OF MADISON'S BIKE TRANSPORTATION PLAN, A MINIMUM RADIUS OF CURVATURE OF 100 FEET WITH A DESIGN SPEED OF 20 MPH WAS USED.

DIGGERS HOTLINE
 DIAL 811 or 1-800-242-8511
 To Obtain Location of Participants Underground Facilities Before You Dig in Wisconsin
 Wis Statute 182.0175 (1974)
 Requires Min. 3 Work Days Notice Before You Excavate



NOTES:

1. ALL EXISTING UNDERGROUND UTILITY LOCATIONS ARE APPROXIMATE AND SHOULD BE FIELD VERIFIED PRIOR TO CONSTRUCTION.
2. ALL GENERAL NOTES FOUND ON SHEET G1.1.
3. BASED ON THE CITY OF MADISON'S BIKE TRANSPORTATION PLAN, A MINIMUM RADIUS OF CURVATURE OF 100 FEET WITH A DESIGN SPEED OF 20 MPH WAS USED.

DIGGERS HOTLINE
 DIAL 811 or 1-800-242-8511
 To Obtain Location of Participants
 Underground Facilities Before You
 Dig in Wisconsin
 Wis Statute 182.0175 (1974)
 Requires Min. 3 Work Days Notice
 Before You Excavate



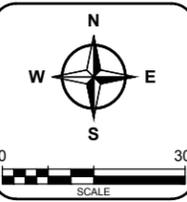
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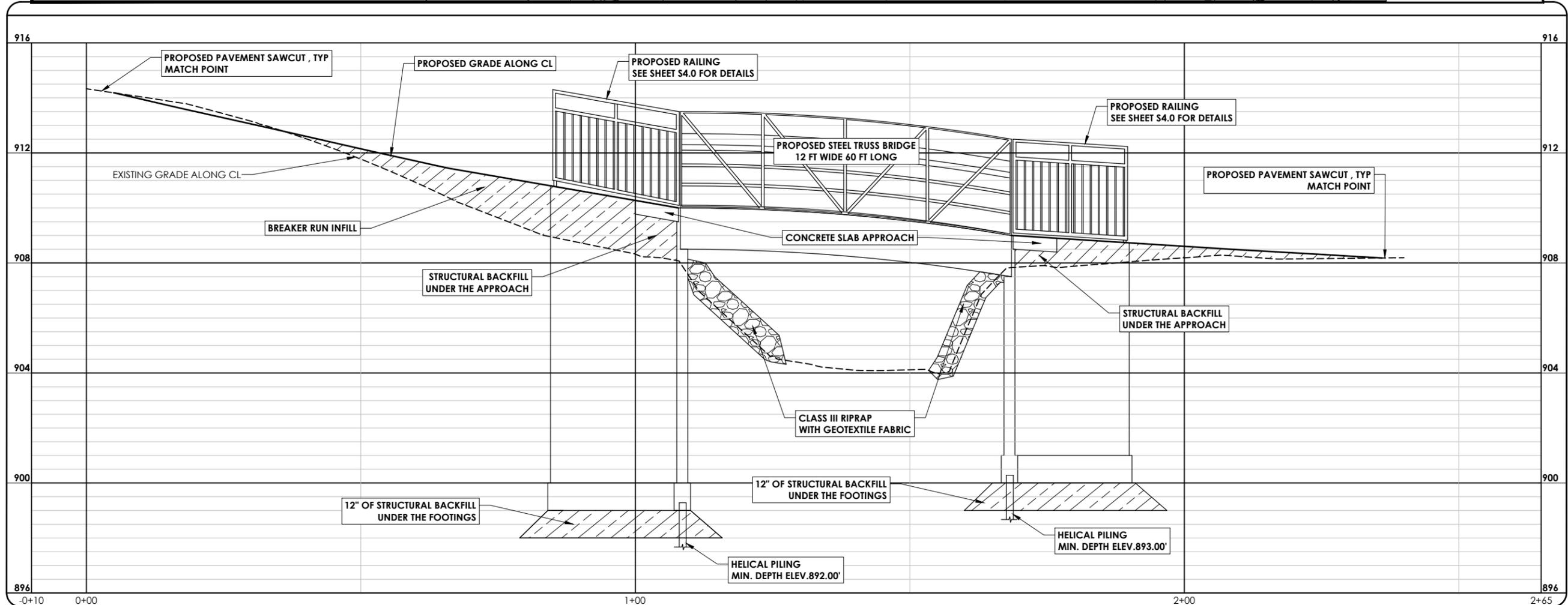
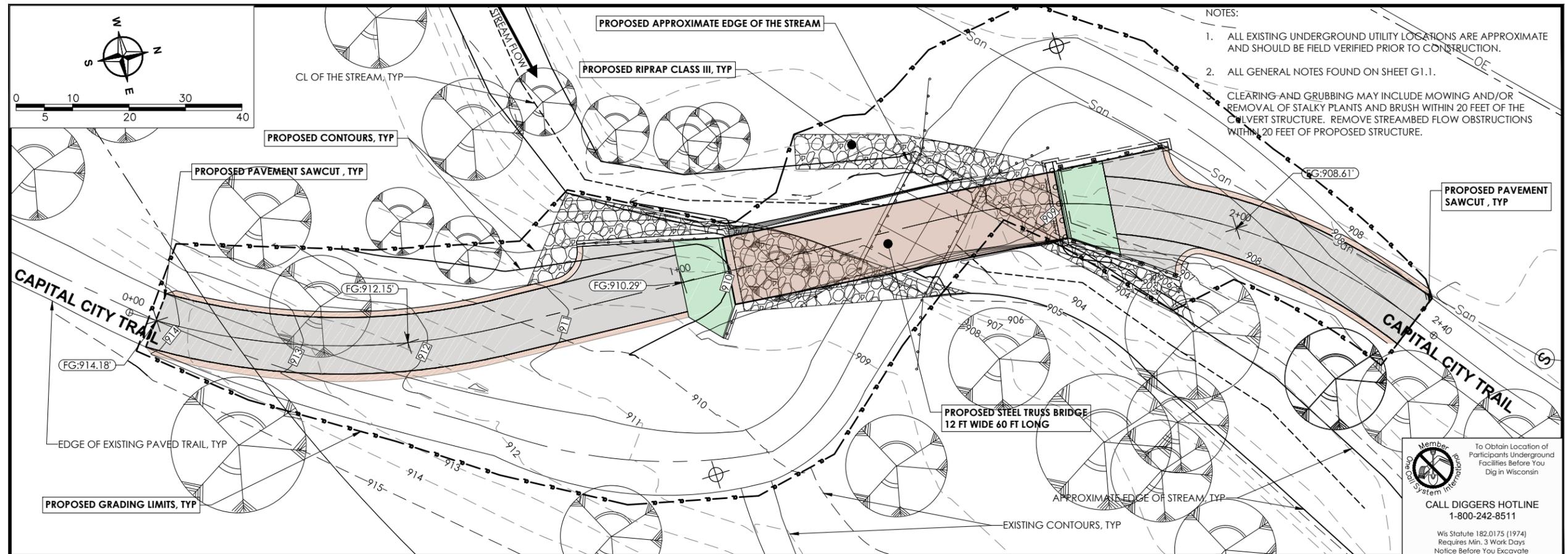
**PROPOSED SITE PLAN
 CAPITAL CITY TRAIL BRIDGE REPLACEMENT
 DANE COUNTY PARKS
 CITY OF FITCHBURG
 DANE COUNTY, WI**

REVISIONS	NO.	BY	DATE



DRAWN BY	LAL
REVIEWED BY	KDA
ISSUE DATE	FEB 2019
GEC FILE NO.	2-1118-535
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C5.0



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PROPOSED PLAN AND PROFILE
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
 DANE COUNTY, WI

REVISIONS	NO.	BY	DATE



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C6.0



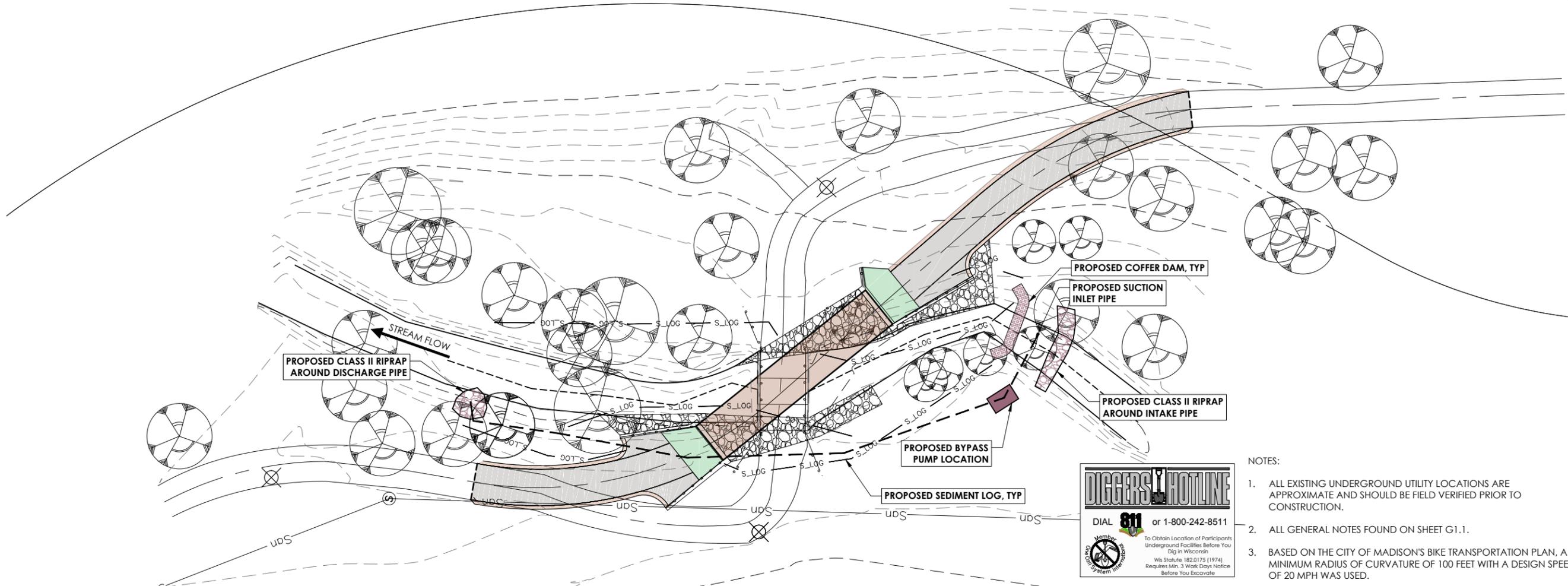
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PROPOSED COFFER DAM DETAILS
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS

CITY OF FITCHBURG
DANE COUNTY, WI



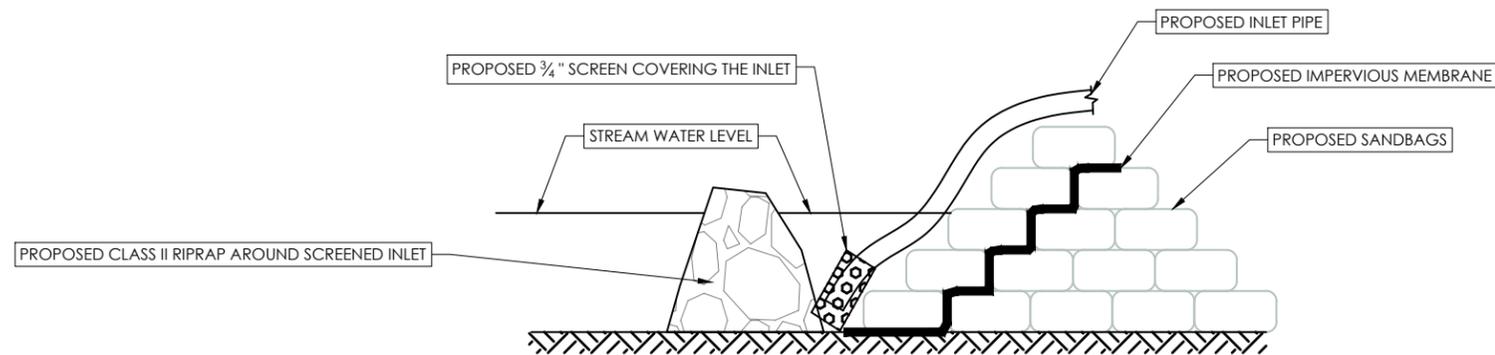
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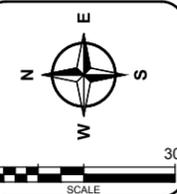
NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR CONVEYING THE BASEFLOW DISCHARGE THROUGH THE SITE FROM STREAM TO THE CHANNEL DOWNSTREAM AT ALL TIMES DURING CONSTRUCTION, INCLUDING DURING REMOVAL AND REPLACEMENT OF THE EXISTING STRUCTURE, COFFERDAM CONSTRUCTION AND DEWATERING ACTIVITIES.
2. THE CONTRACTOR SHALL DETERMINE THAT THE CONSTRUCTION OF COFFERDAM IS NECESSARY FOR THE WORK.
3. THE CONTRACTOR SHALL DETERMINE THE NUMBER, PIPE SIZE, LOCATION OF THE EQUIPMENT NEEDED TO BYPASS THE STREAM.
4. THE BYPASSING OF THE STREAM CAN NOT EXCEED MORE THAN 5 WORKING DAYS
5. COFFERDAM SHOULD BE LOCATED APPROXIMATELY 30 FT UPSTREAM.
6. COFFERDAM NEEDS TO BE INSPECTED ON DAILY BASIS.
7. EARTH FILLED SANDBAGS ARE NOT ALLOWED
8. CONSTRUCTION OF THE COFFERDAM SHOULD COMPLY WITH ALL LOCAL, STATE, AND FEDERAL LAWS.
9. COFFER DAMS SHALL BE REMOVED WHEN THE PROJECTS IS COMPLETED AND THE SITE SHALL BE RESTORED TO THE ORIGINAL.

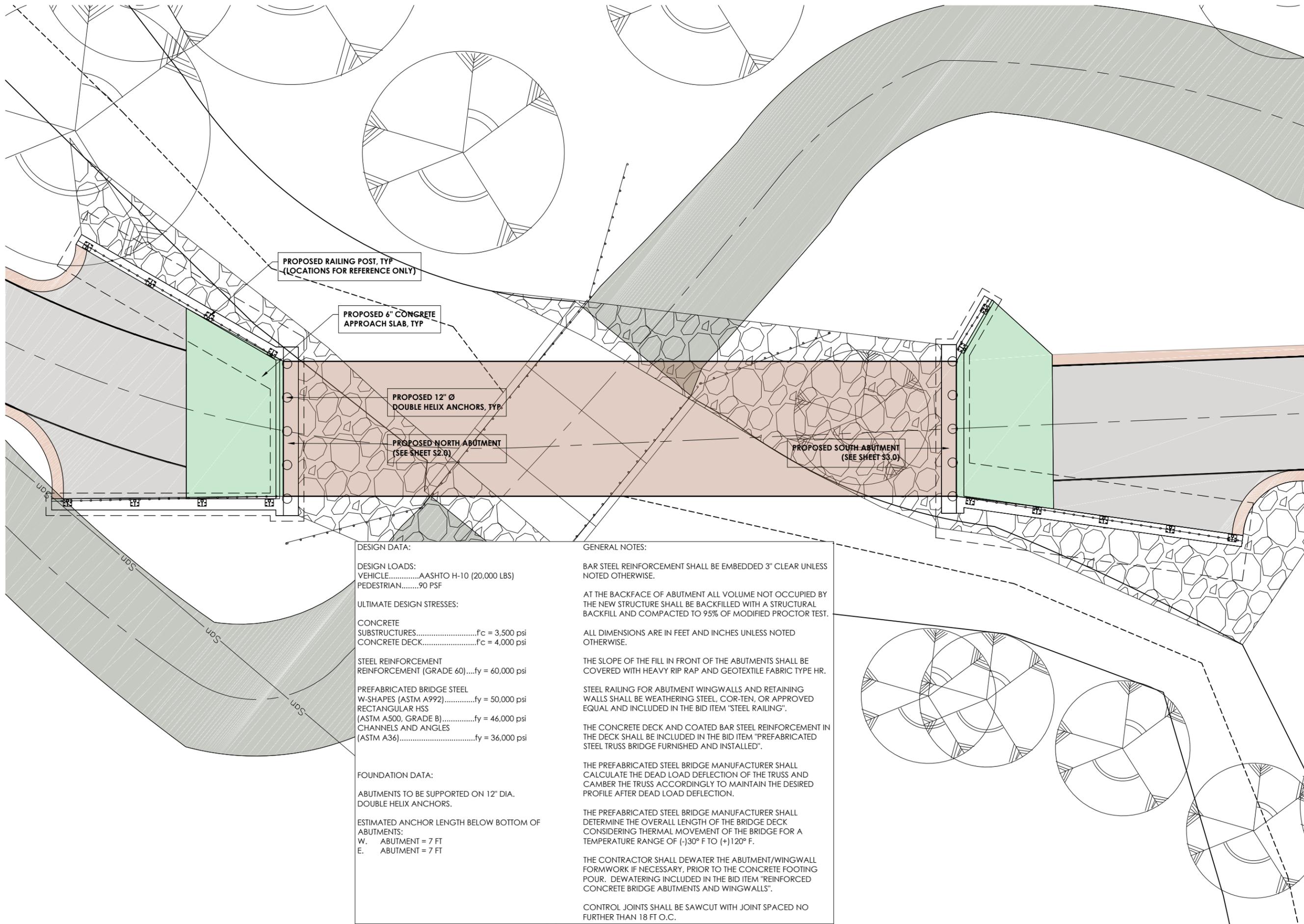


COFFER DAM INSTALLATION WITH INLET PROTECTION DETAIL (N.T.S.)

REVISIONS	NO.	BY	DATE



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REVIEWED BY	KDA
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DESIGN DATA:

DESIGN LOADS:
 VEHICLE.....AASHTO H-10 (20,000 LBS)
 PEDESTRIAN.....90 PSF

ULTIMATE DESIGN STRESSES:

CONCRETE
 SUBSTRUCTURES.....f_c = 3,500 psi
 CONCRETE DECK.....f_c = 4,000 psi

STEEL REINFORCEMENT
 REINFORCEMENT (GRADE 60).....f_y = 60,000 psi

PREFABRICATED BRIDGE STEEL
 W-SHAPES (ASTM A992).....f_y = 50,000 psi
 RECTANGULAR HSS
 (ASTM A500, GRADE B).....f_y = 46,000 psi
 CHANNELS AND ANGLES
 (ASTM A36).....f_y = 36,000 psi

FOUNDATION DATA:

ABUTMENTS TO BE SUPPORTED ON 12" DIA.
 DOUBLE HELIX ANCHORS.

ESTIMATED ANCHOR LENGTH BELOW BOTTOM OF
 ABUTMENTS:
 W. ABUTMENT = 7 FT
 E. ABUTMENT = 7 FT

GENERAL NOTES:

BAR STEEL REINFORCEMENT SHALL BE EMBEDDED 3" CLEAR UNLESS NOTED OTHERWISE.

AT THE BACKFACE OF ABUTMENT ALL VOLUME NOT OCCUPIED BY THE NEW STRUCTURE SHALL BE BACKFILLED WITH A STRUCTURAL BACKFILL AND COMPACTED TO 95% OF MODIFIED PROCTOR TEST.

ALL DIMENSIONS ARE IN FEET AND INCHES UNLESS NOTED OTHERWISE.

THE SLOPE OF THE FILL IN FRONT OF THE ABUTMENTS SHALL BE COVERED WITH HEAVY RIP RAP AND GEOTEXTILE FABRIC TYPE HR.

STEEL RAILING FOR ABUTMENT WINGWALLS AND RETAINING WALLS SHALL BE WEATHERING STEEL, COR-TEN, OR APPROVED EQUAL AND INCLUDED IN THE BID ITEM "STEEL RAILING".

THE CONCRETE DECK AND COATED BAR STEEL REINFORCEMENT IN THE DECK SHALL BE INCLUDED IN THE BID ITEM "PREFABRICATED STEEL TRUSS BRIDGE FURNISHED AND INSTALLED".

THE PREFABRICATED STEEL BRIDGE MANUFACTURER SHALL CALCULATE THE DEAD LOAD DEFLECTION OF THE TRUSS AND CAMBER THE TRUSS ACCORDINGLY TO MAINTAIN THE DESIRED PROFILE AFTER DEAD LOAD DEFLECTION.

THE PREFABRICATED STEEL BRIDGE MANUFACTURER SHALL DETERMINE THE OVERALL LENGTH OF THE BRIDGE DECK CONSIDERING THERMAL MOVEMENT OF THE BRIDGE FOR A TEMPERATURE RANGE OF (-)30° F TO (+)120° F.

THE CONTRACTOR SHALL DEWATER THE ABUTMENT/WINGWALL FORMWORK IF NECESSARY, PRIOR TO THE CONCRETE FOOTING POUR. DEWATERING INCLUDED IN THE BID ITEM "REINFORCED CONCRETE BRIDGE ABUTMENTS AND WINGWALLS".

CONTROL JOINTS SHALL BE SAWCUT WITH JOINT SPACED NO FURTHER THAN 18 FT O.C.



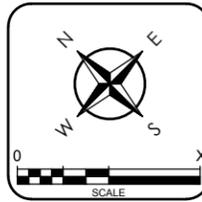
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FOUNDATION PLAN
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS

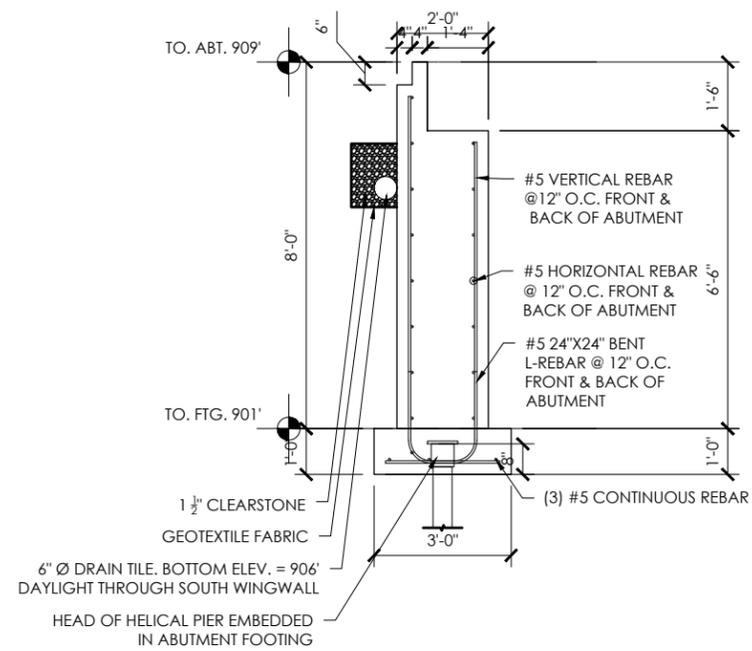
CITY OF FITCHBURG
 DANE COUNTY, WI

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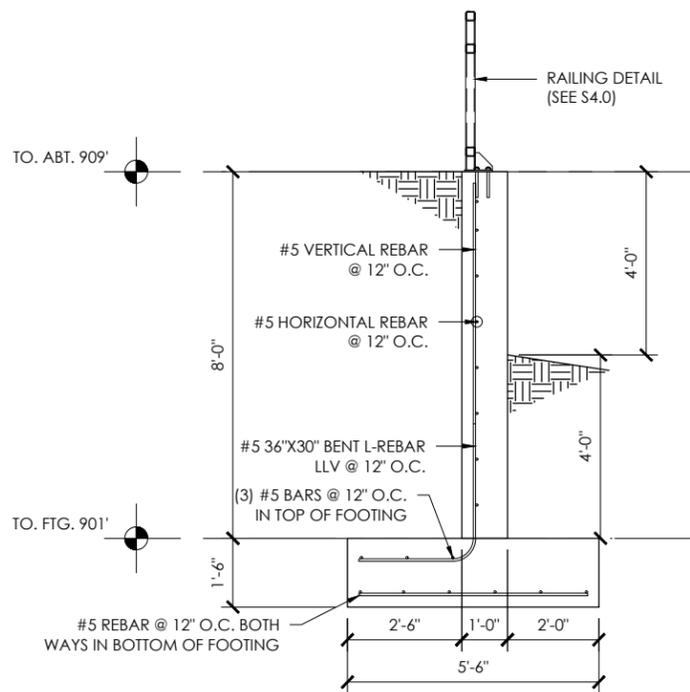
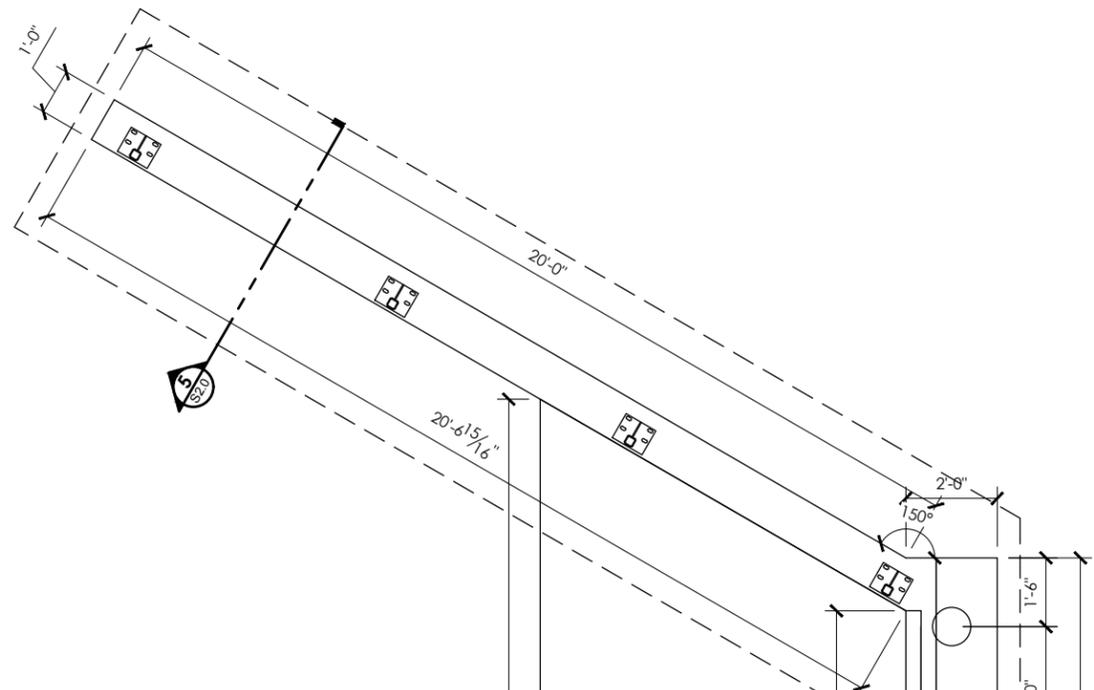
DRAWN BY	JRN
REVIEWED BY	KDA
ISSUE DATE	JAN 2019
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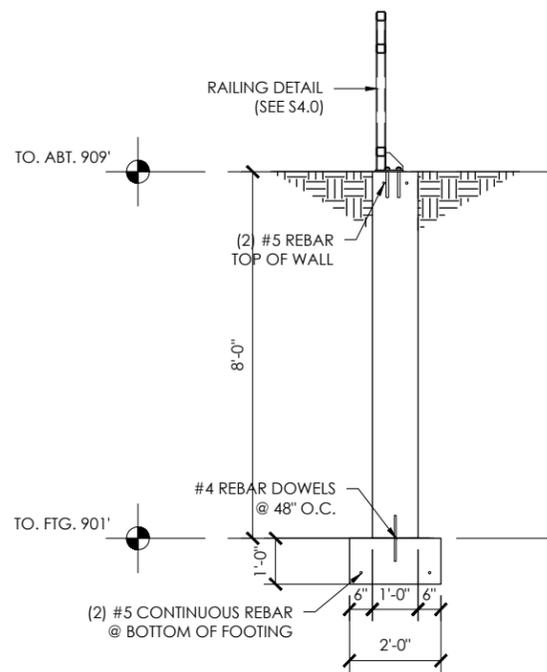


2 NORTH ABUTMENT SECTION VIEW
SCALE: 3/4" = 1'-0"

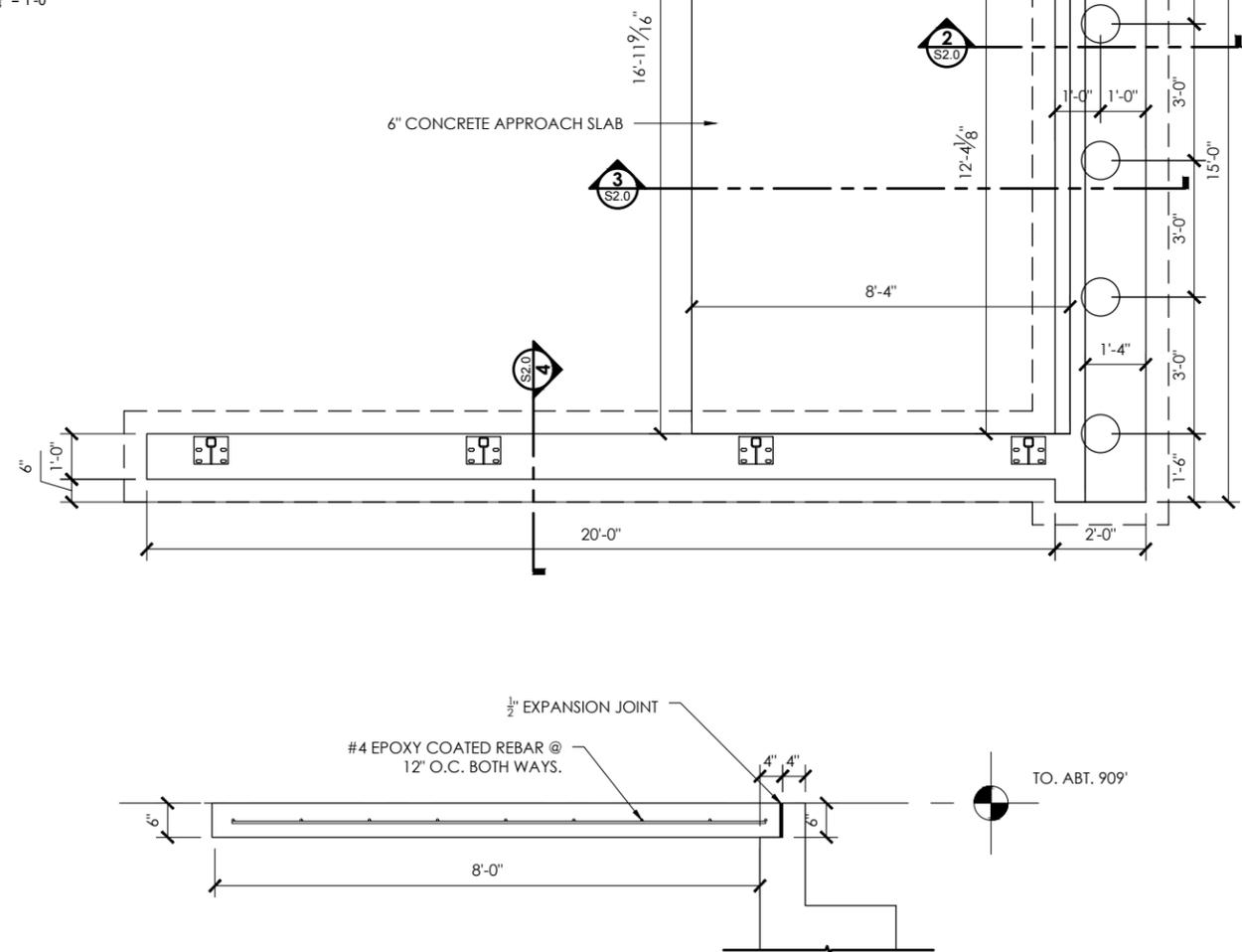
1 NORTH ABUTMENT PLAN VIEW
SCALE: 3/4" = 1'-0"



5 NORTH RETAINING WALL SECTION VIEW
SCALE: 3/4" = 1'-0"



4 NORTH WING WALL SECTION VIEW
SCALE: 3/4" = 1'-0"



3 CONCRETE APPROACH DETAIL
SCALE: 3/4" = 1'-0"



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**NORTH ABUTMENT
CAPITAL CITY TRAIL BRIDGE REPLACEMENT
DANE COUNTY PARKS**

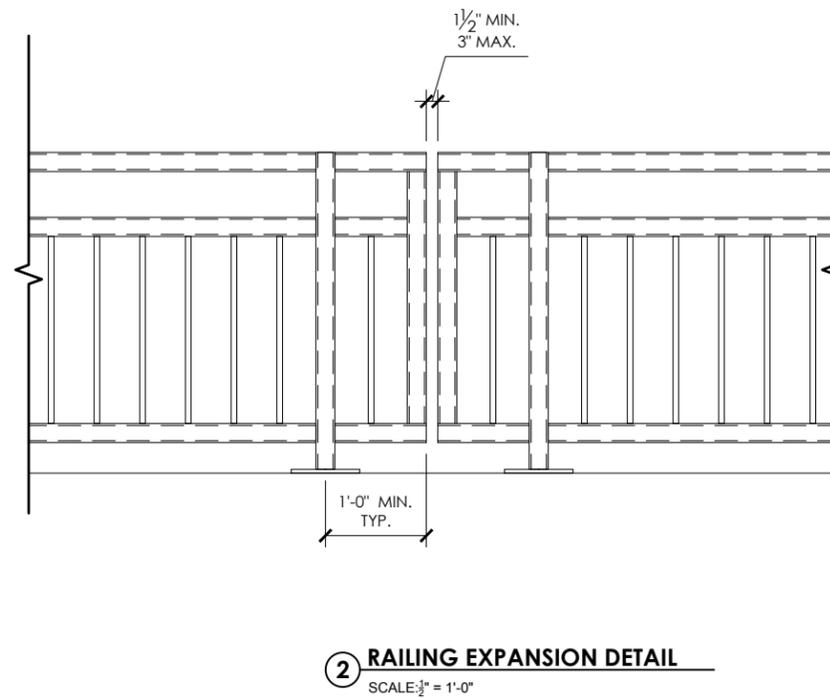
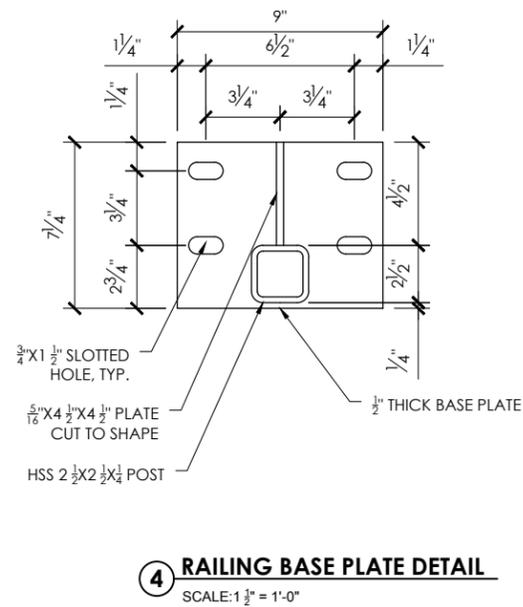
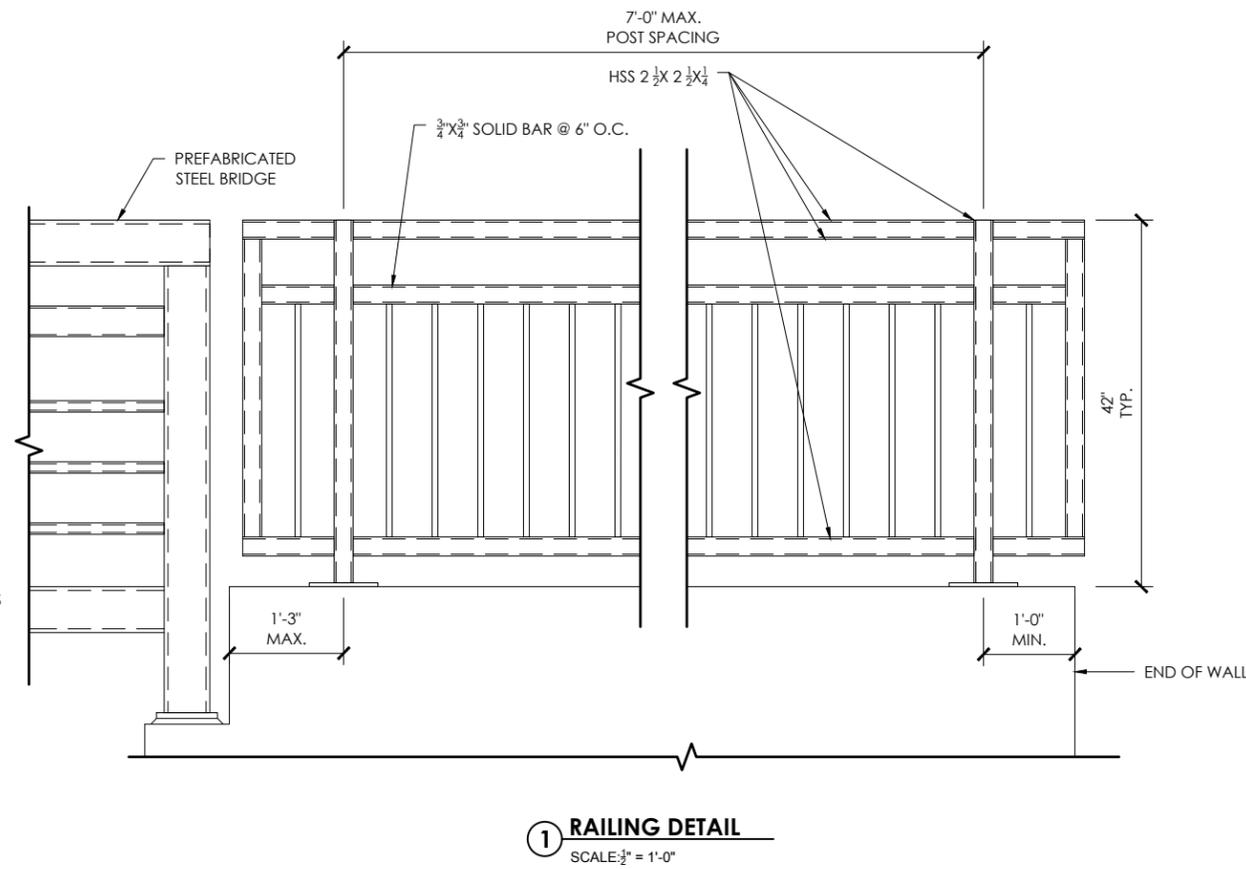
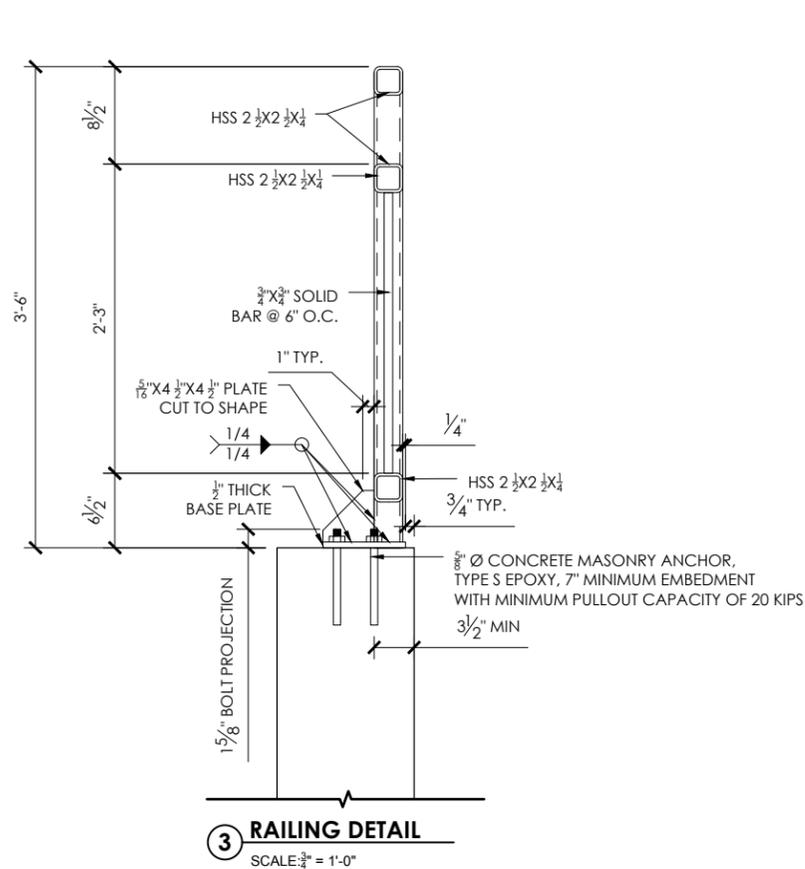
CITY OF FITCHBURG
DANE COUNTY, WI

REVISIONS	NO.	BY	DATE



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REVIEWED BY: KDA
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GEC FILE NO.: 2-1118-535
SHEET NO.

S2.0



NOTES:
POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

RAILS AND POSTS TO BE ASTM A500, GRADE B. BASE PLATES TO BE ASTM A709, GRADE 36.

ALL POST SPACES ARE TAKEN HORIZONTAL, ALONG CENTER LINE OF RAILING AT BASE OF POST.

CAULK AROUND PERIMETER OF BASE PLATES AND FILL PORTION OF SLOTTED HOLES AROUND ANCHOR BOLTS WITH NON-STAINING GRAY NON BITUMINOUS JOINT SEALER.

POSTS AND PICKETS SHALL BE SET VERTICAL AND RAILS SHALL BE SET PARALLEL TO TOP OF WING WALL.

ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM A307. IF A307 IS USED ANCHOR BOLTS, NUTS, AND WASHERS SHALL BE GALVANIZED.

RAILING SHALL BE FABRICATED IN LENGTHS NO MORE THAN 20 FT.

ALL MATERIAL SHALL BE WEATHERING STEEL, COR-TEN, OR APPROVED EQUAL.

SUBMIT SHOP DRAWINGS FOR ENGINEER'S REVIEW AND FABRICATE RAILING COMPONENTS ONLY AFTER SHOP DRAWINGS ARE APPROVED.

BRIDGE RAILING AND ABUTMENT RAILING SHALL BE SET AT THE SAME HEIGHT.



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RAILING DETAILS
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DANE COUNTY PARKS

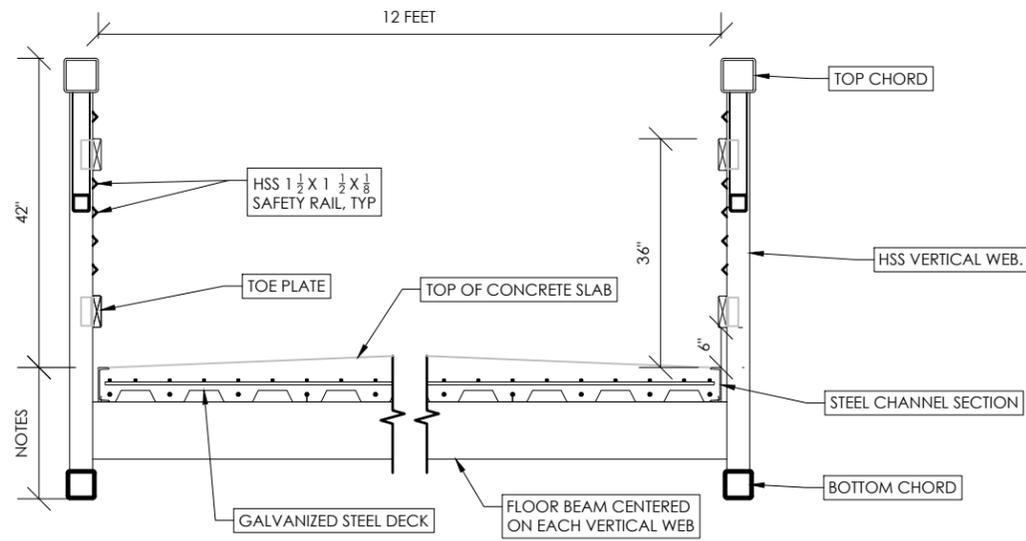
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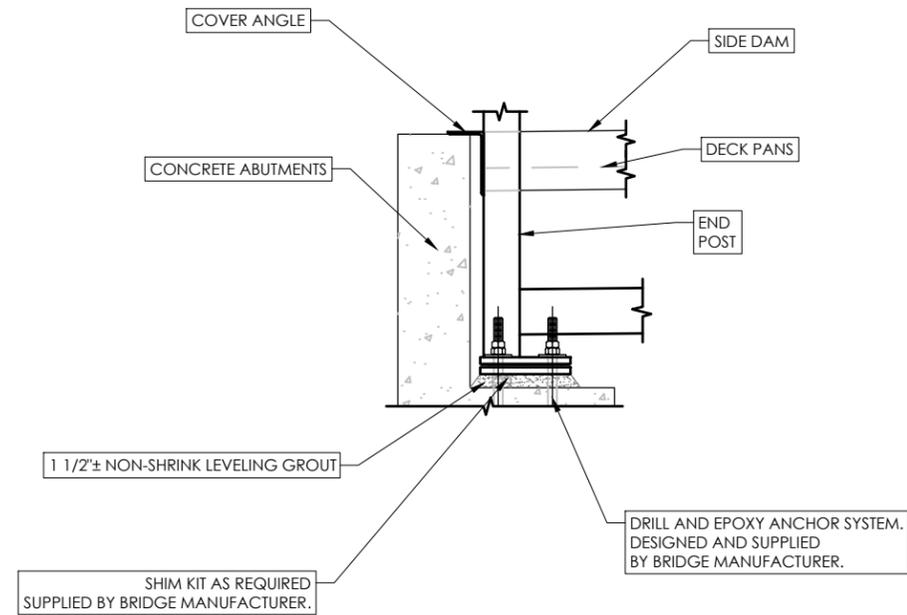
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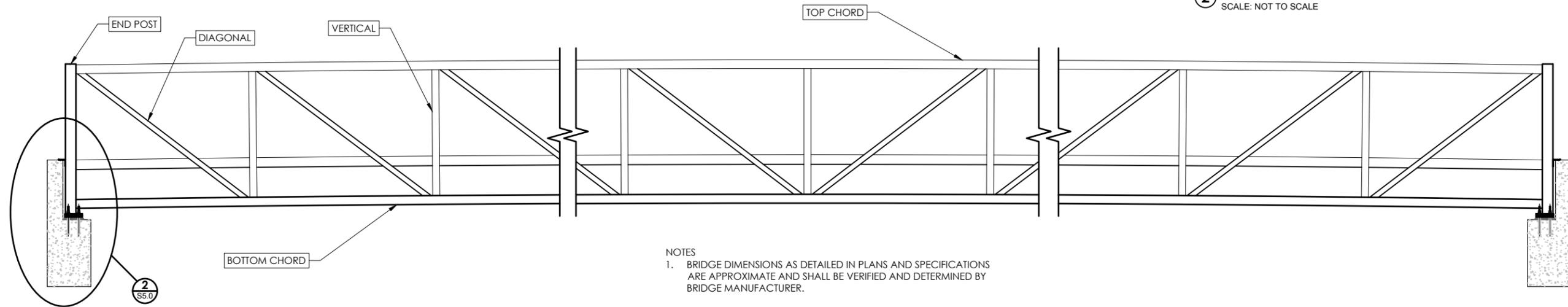


1 TYPICAL SECTION
SCALE: NOT TO SCALE

- NOTES:
1. DEPTH OF TRUSS BELOW TOP OF SLAB TO BE DETERMINED BY THE CONTRACTOR.
 2. BRIDGE DIMENSIONS AS DETAILED IN PLANS AND SPECIFICATIONS ARE APPROXIMATE AND SHALL BE VERIFIED AND DETERMINED BY BRIDGE MANUFACTURER.
 3. CONTRACTOR IS TO PROVIDE FINAL STAMPED BRIDGE AND RAILING PLANS FOR APPROVAL BY DANE COUNTY ENGINEERING DIVISION.
 4. CONTROL JOINTS SHALL BE SPACED PER BRIDGE SUPPLIER REQUIREMENTS.
 5. MAX 2% CROSS SLOPE ON CONCRETE SLAB

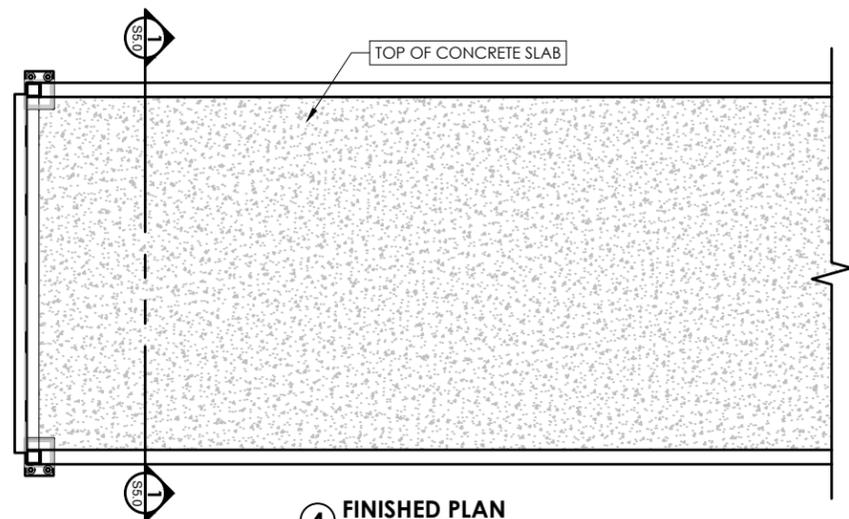


2 BRIDGE BEARING DETAIL
SCALE: NOT TO SCALE

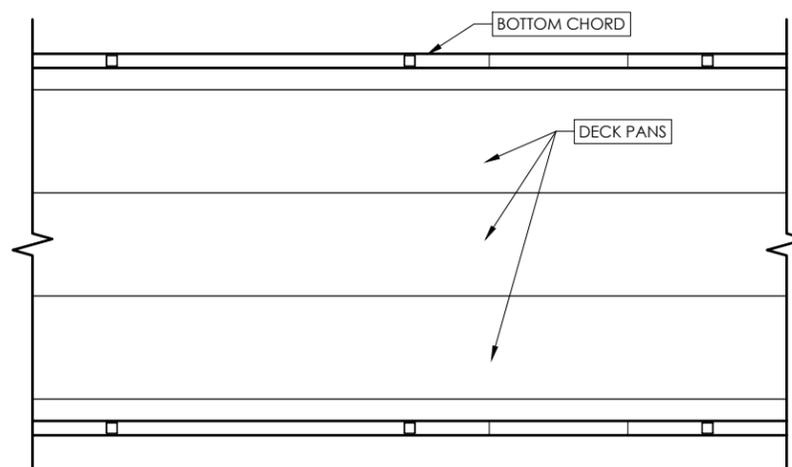


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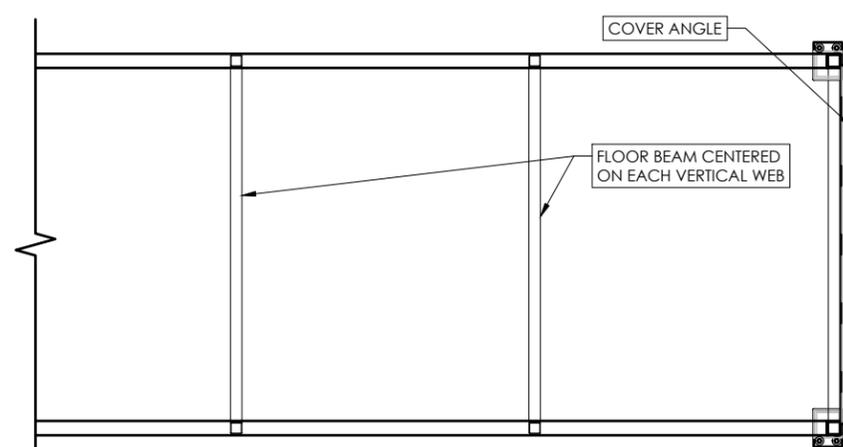
3 ELEVATION
SCALE: NOT TO SCALE



4 FINISHED PLAN
SCALE: NOT TO SCALE



5 DECK PAN LAYOUT
SCALE: NOT TO SCALE



6 FRAMING PLAN
SCALE: NOT TO SCALE



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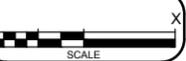
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BRIDGE DETAILS
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