



WISCONSIN
UNIVERSITY OF WISCONSIN-MADISON

ENGINEERING AND LANDSCAPE DESIGNS FOR AHUSKA PARK IN THE CITY OF MONONA



Photo by Kelly Conforti Rupp / UW-Madison

CIVIL & ENVIRONMENTAL ENGINEERING 578: SENIOR CAPSTONE DESIGN

FALL 2016

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PLACES
TOGETHER





1415 Engineering Dr
Madison, WI 53706

December 6, 2016

Jake Anderson, Director
Department of Parks and Recreation, City of Monona
2346 Engineering Hall
1415 Engineering Drive
Madison, WI 53706

**RE: Final Design Documents – Engineering and Landscape Design Services for
Infrastructure and Site Improvements at Ahuska Park**

Dear Mr. Anderson,

E Drive Design Co. is pleased to present its final design documents to the City of Monona for the construction of infrastructure and site improvements at Ahuska Park. Our design aims to strengthen the engagement among the community, the park, and the neighboring wetlands through the enhanced accessibility and quality of Ahuska Park.

Following a thorough evaluation of the sustainability of each of our three preliminary design alternatives, along with community input received during the public information meeting and site visits, the Hybrid Design was selected as the final design. This design focuses on integrating the surrounding wetlands into the park, while expanding on the variety of activities taking place within the park's boundaries. Appealing to the largest demographic, our Hybrid Design has the greatest potential to offer long-lasting value to Monona.

Enclosed you will find the following submittal items: Upfront documents, which include the construction contractor contract and selected technical specifications; a proposed project schedule with anticipated timing for review, permitting, bidding, construction, and closeout; an opinion of probable construction cost; construction drawings set; selected engineering calculations; and a final geotechnical report.

Thank you again for selecting E Drive Design to perform the requested engineering services at Ahuska Park. We appreciate your time and consideration of our final design documents. Following your review, we look forward to overseeing the implementation of our final design to benefit Monona for years to come.

Sincerely,

A handwritten signature in black ink, appearing to read 'Kimberly Klawans', written over a horizontal line.

Kimberly Klawans
Project Manager



STUDENT PROJECT DOCUMENTS

The concepts, drawings and written materials provided here were prepared by students in the Department of Civil & Environmental Engineering at the University of Wisconsin-Madison as an activity in the course CEE 578 – Senior Capstone Design. These do not represent the work products of licensed engineers. These are not for construction purposes.

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Section 1

Up-front Documents



**MANUAL FOR PREPARATION OF GENERAL PRIME CONTRACTOR (GPC)
SPECIFICATIONS
FOR
PROJECTS THAT HAVE A CONSTRUCTION BUDGET GREATER THAN \$185,000**

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EXPLANATION OF GUIDE SPECIFICATIONS

(Rev 10/2014)

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1. PURPOSE

These Guide Specifications have been developed to resolve a pressing need for consistent arrangement of specifications prepared by Architects/Engineers employed by Division of Facilities Development hereinafter termed DFD.

Real benefits will be derived from wide use of a single system, intended to affect uniformity and establish some degree of consistency based on sound principles.

NOTICE: The 2013-15 Wisconsin State Budget (2013 Wisconsin Act 20) significantly altered the bidding and contracting processes for state construction projects. In summary, it created a mandatory pre-bid contractor certification program and required that all projects over \$185,000 are let through a new single prime bidding and contracting process described below. Under the new laws, all potential bidders must become certified by the Wisconsin DFD prior to submitting bids. All bids received from contractors who are not certified will be rejected.

DFD will publicly bid the applicable mechanical, electrical, plumbing, and fire protection (MEP) divisions of work first. Within 5 days of the MEP bid opening, DFD will identify a lowest, qualified, responsible, certified bidder in each applicable MEP division of work. These successful MEP bids must be included in all general prime contractor bids received. No later than 5 days after DFD identifies the successful MEP bids, DFD will publicly open general prime contractor bids. General prime contractor bids that do not include the successful MEP bids will be rejected. The state will enter into a single contract with the lowest, qualified, responsible, certified general prime contractor and this general prime contractor will enter into subcontracts with the successful MEP bidders. If a project does not include any mechanical, electrical, plumbing, or fire protection divisions of work, DFD will bid one bid package for all work to general prime contractors.

2. DESCRIPTION

1 The Guide Specifications are a modified version of the 33 Division Format developed by the Construction
2 Specifications Institute and endorsed by AIA, American Society of Landscape Architects, AGC, Council of
3 Mechanical Specialty contracting Industries, National Society of Professional Engineers, and the Producers'
4 Council.

5
6 The Format has been altered only to the extent found necessary to best fit the method of operation of DFD
7 in its endeavor to meet the requirements of the State Building Program most efficiently. This includes
8 changes in requirements for contractor certification and single prime contracting according to Wis. Stat. s.
9 16.855.

10
11 A major change in the Format is to have Division 1, which applies to all contractors, include all items
12 dealing with "Bidding Requirements", "Contract Forms", "General Conditions", "Supplementary General
13 Conditions", and "General Requirements", instead of merely the "General Requirements". (Division "0" is
14 not to be used.)

15 Division 33 is to be last division number used; creation of division numbers beyond 33 is not allowed.

16 17 **3. DEFINITIONS**

18 In this document, the following terms are defined as:

19
20 (a) "Mechanical, electrical, or plumbing subcontractor" ("MEP Subcontractor") is a contractor that
21 performs mechanical (Heating, Ventilating, and Air Conditioning), electrical, plumbing, or fire protection
22 (fire suppression) work for the Project, and enters into a contract with the General Prime Contractor to
23 perform their division of work.

24
25 (b) "Qualified bidder" means a contractor that the department certifies under Wis. Stat. s.
26 16.855(9m)(b)1.

27
28 (c) "Qualified responsible bidder" means a contractor who is a qualified bidder and who is a
29 responsible bidder.

30
31 (d) "Responsible bidder" means a contractor that the department certifies under Wis. Stat. s.
32 16.855(9m)(b)2.

33
34 (e) "Single prime contracting" means bidding and contracting through a process in which only a
35 general prime contractor has a contractual relationship with the state and all mechanical, electrical, or
36 plumbing subcontractors are identified by the department and are subcontractors to the General Prime
37 Contractor.

38
39 (f) "General Prime Contractor" is a contractor that enters into a contract with the state to perform all
40 work as required by the Contract Documents and enters into contracts with subcontractors including MEP
41 Subcontractors identified by DFD.

42
43 (g) "Non-MEP Subcontractor" is a subcontractor to a General Prime Contractor in divisions of work
44 other than mechanical, electrical, plumbing, and fire protection. This includes suppliers and installers to the
45 General Prime Contractor.

46
47 (h) "Subcontractor" is all subcontractors on a project. This includes MEP Subcontractors,
48 subcontractors to the MEP Subcontractors, and Non-MEP Subcontractors.

49
50 (i) "Contractor" is all contractors working on a project regardless of contractual relationship. This
51 includes the General Prime Contractor, MEP Subcontractors, Non-MEP Subcontractors, and all
52 Subcontractors, regardless of tier of subcontract.

53 54 **4. FUNCTIONS**

1 Requirements that apply to the "Bidder" should be included in the Bidding Documents. Requirements
2 applicable to the "General Prime Contractor" should be included in either the Contract Forms, General
3 Requirements, or in the Technical Specifications. Bidding requirements and Contract requirements should
4 never be intermixed.

5
6 A subject should be covered only under that part of the "Specifications" in which it properly belongs. It
7 should not be repeated elsewhere.

8 9 **5. ADAPTABILITY**

10 The arrangement of the Specifications, as described herein, is adaptable to small and simple jobs as well as
11 to large and complex jobs. It is suitable for jobs having State funds only. A Supplementary General
12 Condition is provided herein to convert the documents to use for projects with Federal funds.

13 14 **6. BASIC PRINCIPLES OF ARRANGEMENT**

15 The Specifications should reflect prevailing practices in the construction industry.

16
17 All paragraphs in the specification sections and any addenda should be identified by numbering each line
18 for ease in reference. Any other type of paragraph identification should be avoided.

19
20 Every type and kind of work shown on the drawings, or to be otherwise included in the contract, should be
21 covered somewhere in the specifications. Although drawings and specifications serve complimentary
22 functions, neither is capable of standing alone. Where an item is shown on the drawings and there is no
23 supporting applicable specification, the Contractor is more or less free to make a selection as to quality and
24 in some cases may even select the actual material he considers suitable for the item. If this happens, and
25 DFD wishes to have something better than minimum quality, DFD is likely to pay an "extra" to obtain the
26 quality desired.

27
28 The "Technical" Specification should be divided into "Sections". Each Section should cover the work of
29 one subcontractor or part of such a subcontract. Each Section should fully delineate and completely
30 describe all of the work within the subcontract and how it ties in with the work of others.

31
32 The subletting of the work covered by several different Sections to one subcontractor is not precluded.

33
34 State licensing laws should be observed. Each type of license requires a separate specification Section, i.e.,
35 "Plumbing" and "Fire Suppression/Protection Sprinklers" should not be combined in one Section.

36
37 New products appearing on the market should not be buried inconspicuously in a long Section, but should
38 be placed in a separate Section so that it stands out.

39
40 Two types of information are given (1) reference and (2) detailed requirements. A requirement should not
41 be repeated, but a reference to the specific requirement may be referred to in other parts of the
42 specifications. Thus, some mention of Bid Guarantee appears in both the Instructions to Bidders and in the
43 Invitation to Bid, but the detailed requirements appear only in the Instructions to Bidders. The Invitation to
44 Bid contains a brief reference to Bid Guarantee only because prospective bidders must know that it is
45 required.

46
47 Overlapping of Sections should be avoided and omissions must be avoided.

48
49 When in doubt, write a separate Section.

50 51 **7. ORDER OF SEQUENCE**

52 The Table of contents should be placed immediately after the cover or title sheet. The word "Index" is not
53 correct for this Table.

Addenda should follow the Table of Contents.

Division 1 should follow the Table of Contents and any addenda that may be issued. Division 1 shall consist of the following documents in the order shown:

The Bidding Documents which include:

- GPC Invitation to Bid, which contains a description of the work
- GPC Instructions to Bidders.
- Bid Form – General Prime Contractor (GPC)
- Sealed Bid Envelope Label
- General Prime Contractor (GPC) Bid Bond Form
- Designation of Confidential and Proprietary Information Form
- Form A - Affidavit of Compliance Form
- Request for Submittal Approval Form
- Request for Subcontractors Approval Form

The Contract Forms which include:

- Performance Bond 100%
- Payment Bond 100%
- Contract Form

The Conditions of the Contract which consist of:

- General Conditions of the General Prime Contractor Contract
- Supplementary General Conditions (and Federal)
- Submittal Log

DIVISION 01

- General Requirements
- 01 74 19 Construction Waste Management and Disposal
- 01 84 13 Sustainable Design Requirements – DFD
- 01 84 13.13 Sustainable Design Requirements – LEED
- 01 91 01 Commissioning Process
- 01 91 02 Commissioning Process

8. TYPES OF BID

Base Bid: Describe the work being bid upon by the Contractor. The description of work is accomplished by referencing the Divisions of the Specifications that constitute the Base Bid.

Informational Bids: If required shall be clearly stated that they are included as part of their related Base Bid (not added to or deducted from) and shall be inserted in the Bid Form following their related Base Bid. Informational bids are amounts requested for accounting purposes and for allocation of funds only. It is not intended to omit any of the work described or related items from this project. Informational Bids will not be considered in establishing the lowest bid.

Unit Price Bids: The Bidder shall state the amount that is included in the Base Bid for all equipment, materials and labor required to complete the work described.

9. TABLE OF CONTENTS

1 The "Table of Contents" must be provided in the specifications. Its use is not merely limited to a quick
2 reference to sections contained in the specifications, but is also used to enumerate the contents of the
3 specifications and drawings that form a part of the Contract Documents.

4
5 The "Table of Contents" should have a heading that identifies the project title and project number, to relate
6 it with the specific project.

7
8 The "Table of Contents" should identify all of the parts of the Specifications. It should list the number of
9 pages in each section and it should include all Divisions and Sections of the Specifications and all sheet
10 numbers of the drawings. If a project does not contain a specific section that is listed in the following
11 Guide for Division 1, the section should be deleted.

12
13 This manual for preparation of specifications contains an example of the format to be used in composing a
14 Table of Contents. The example does not necessarily contain all Divisions and Sections which would be
15 normally included for a specific project. The Architect/Engineer should insert those Divisions and
16 Sections, and edit the applicable items in Division 1 which pertain to the specific project.

17 18 **10. BIDDING DOCUMENTS**

19 **GPC Invitation to Bid:**

20
21 The purpose of the Invitation to Bid is to attract Bidders to bid on the project in sufficient numbers
22 to obtain adequate competition in bidding.

23
24 The Invitation to Bid should be brief and simple, and should be free from extraneous and
25 irrelevant subject matter not consistent with its purpose.

26
27 It should be limited to information that will tell a prospective Bidder whether the work is
28 applicable to the Bidder, whether it is within the firm's capacity, and whether Bidder will have
29 time to prepare a bid prior to bid opening.

30
31 Time for Preparing Bids and Due Dates: Adequate time in which to prepare bids is essential to
32 sound and effective price competition. It is recommended for all major projects that there be at
33 least 30 days from date Invitation to Bid is first published to date set for MEP bid opening.
34 General Prime Contractor bid opening shall be 10 business days following the MEP bid opening.
35 For all projects with a construction budget over \$50,000, if there is a shortened bid period, the
36 Invitation to Bid shall include a statement that there is a less than 30 day bidding period. Also the
37 Division requires the closing of all bids at 2:00 P.M. on the day of the bid opening. Bids are not to
38 be called for on the day following a holiday.

39
40 Bidding documents (drawings, specifications, and addenda) are downloadable from the DFD
41 Bidding web page at
42 [http://wisbuildnet.doa.state.wi.us/\(S\(trmqaglyjufnh11tdy5vp2ps\)\)/public/bidlist_public.aspx](http://wisbuildnet.doa.state.wi.us/(S(trmqaglyjufnh11tdy5vp2ps))/public/bidlist_public.aspx), and
43 are available on compact discs at no cost to bidders.

44
45 If mandatory attendance at a prebid tour is required for a project, it shall be stated in the Invitation
46 to Bid that mandatory attendance is required.

47 48 **GPC Instructions to Bidders:**

49
50 The purpose of Instructions to Bidders is to state the requirements with which the Bidder must
51 comply when submitting the bid, including various "conditions" affecting the award.

1 In contrast to the brevity that is desirable in the Invitation to Bid, the Instructions to Bidders may
2 be as lengthy as is necessary to explain all that the Bidder must comply with during the bidding
3 period, up to the time the award is made, and shortly thereafter.
4

5 **The Architect/Engineer is required to develop a high-level milestone project schedule that**
6 **shall be included in the Instructions to Bidders for both MEP bidders and General Prime**
7 **Contractor bidders.** This schedule will contain start and end dates, by month, for each milestone.
8 The Architect/Engineer must develop realistic schedule milestones for all contractors to base their
9 bids on. These milestones will be incorporated into the master project schedule after the Notice to
10 Proceed is issued. The schedule must include, but is not limited to, the following milestone
11 categories as they apply to the project:
12

- 13 -Mobilization
- 14 -Excavation and Site Work
- 15 -Footings and Foundations
- 16 -Building Enclosure
- 17 -MEP Underground and Site Utilities
- 18 -MEP Overhead Rough-in
- 19 -MEP Finishes
- 20 -Pre-functional Testing and Commissioning
- 21 -Architectural Finishes
- 22 -Substantial Completion
- 23

24 The Architect/Engineer must insert this schedule in the table provided in the Commencement and
25 Completion section of the Instructions to Bidders in both the MEP bid documents and the General
26 Prime Contractor bid documents.
27

28 **The General Prime Contractor must base the Project Schedule on the schedule that the**
29 **MEP Subcontractors and General Prime Contractors bid on (in the specifications or bid**
30 **instructions), unless otherwise agreed to by the MEP Subcontractor.**
31

32 Bid Form:

33

34 The Bid Form is the document upon which the Bidder quotes the price(s) for which the Bidder is
35 willing to enter into a contract and to complete the work in conformance with the Contract
36 Documents. It should be written so that all Bidders will be bidding on the same basis.
37

38 The Bid Form should contain all information required of the Bidder at the time of bid opening and
39 nothing else.
40

41 The Bid Forms including addenda receipt and signature form is to be separately book marked
42 within the PDF for ease of recipients printing for bid submission.
43

44 The base bid on the bid form must have spaces provided for the bidder to enter the numerical
45 amounts for each.
46

47 Unit prices requested on Bid form must be supported in the applicable technical sections, with
48 detailed information as to what the price covers and how it will be incorporated. Generalities will
49 not suffice, such as using unit price intended for foundation wall to be used for concrete steps. A
50 unit price on the Bid Form shall be accompanied by the unit measure upon which the price is
51 based.
52

1 Addenda: The Bid Form should contain a statement that any addenda that have been issued were
2 received and their cost included on the Bid Form. Addenda should be identified by number and
3 date. Each should be acknowledged separately.
4

5 Commencement and Time of Completion of Work should be included in the Proposal so that all
6 Bidders may bid on the same basis as to "time", the only variable then being "Price".
7

8 Bid Bond Form: This document is a preprinted form which must be obtained from DFD's web page and
9 inserted into the specification volume by the A/E. The Instructions to Bidders describe how this document
10 is to be utilized.
11

12 Form A - Affidavit of Compliance - Minority Business Enterprise and Disabled Veteran-Owned Business
13 Provisions and Request for Subcontractors Approval Forms: These documents are preprinted forms which
14 must be obtained from DFD's web page and inserted into the specification volume by the A/E. The
15 Instructions to Bidders describe how these documents are to be utilized.
16

17 Designation of Confidential and Proprietary Information Form: This document is a preprinted form which
18 must be obtained from DFD's web page and inserted into the specification volume by the A/E. The
19 Instructions to Bidders describe how this document is to be utilized.
20

21 **11. CONTRACT FORMS**

22 The contract forms consist of the preprinted Construction Contract and separate 100% Performance and
23 100% Payment Bonds. These forms must be obtained from DFD's web page and inserted into the
24 specification volume by the A/E, for the purpose of informing the Bidders of the contents of the documents
25 that they will be required to execute if awarded the contract.
26

27 **12. GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT**

28 The General Conditions consist of a preprinted document containing the ground rules which govern the
29 construction of the project. The General Conditions must be obtained from DFD's web page and inserted
30 into the specification volume by the A/E.
31

32 Incorporate the Supplementary General Conditions for insertion of the wage rates, regulations covering
33 contractor's payments to sub-contractor or insert the Federal Supplementary General Conditions if the
34 project has Federal funding. The list of debarred contractors that accompany the wage rates must also be
35 added to the Supplementary General Conditions. The wage rates and list of debarred contractors are to be
36 page numbered on the bottom center of each page as part of the Supplementary General Conditions.
37 The General Requirements should include all non-technical requirements not covered by the General
38 Conditions. An index should be provided.
39

40 All technical requirements of a "general" nature, not suitable for inclusion in any of the "trade" or
41 "technical" Sections, should also be included under General Requirements.
42

43 The General Requirements format has been established to provide uniformity to the sequence in which the
44 articles will appear when incorporated into the specification.
45

46 Articles or subjects that do not apply to the job at hand should have "Not applicable to this project." printed
47 underneath the title of the article. The intent is to have all articles numbered in the same from project to
48 project.
49

50 The temporary facilities and utilities, as written, are to be used in their general sense. In all instances, the
51 project requirements should be reviewed and specifications written accordingly. Obviously, remodeling
52 should not be handled in same manner as new work, and the multimillion dollar project require a more
53 refined and detailed specification than one required for a small utility type building. See example in this
54 manual for use as guide specifications for Temporary Heat and Temporary Electrical Work.

1
2 The Architect/Engineer should incorporate into the General Requirements any special condition which the
3 Contractor should be informed of, such as: steam or electrical facilities; parking, loading, access to site, or
4 other special condition necessary to complete the work. Since these items are not generally encountered,
5 they were not included in the Guide specification.

6
7 Insert the submittal log following the Supplementary General Conditions. A sample form is provided with
8 the Master Specification – Front End. Alternate forms may be used if all pertinent information is included.
9 List expected product submittals, shop drawings, mock-ups, training requirements, attic stock, tests,
10 certificates, and required warranty certificates that are longer than the standard one year warranty period.
11 Within each Division, list the construction submittals due at the beginning of the project followed by
12 submittals that are due towards the end of construction.

13
14 The Architect/Engineer shall incorporate Section 01 91 01 or 01 91 02 into the specifications following the
15 General Requirements.

16 17 **13. THE INDIVIDUAL (TECHNICAL) SECTIONS**

18 The Purpose of the Technical Section: The Technical Section governs the Subcontractor and Contractor by
19 establishing the quality of materials and workmanship.

20
21 "Scope" Article of the Technical Section:

22
23 Each Technical Section should cover only one specific subject, subcontract, trade jurisdiction, or
24 finished product that is to be identified in the introductory paragraph.

25
26 Each Technical Section should be cross-referenced to Division 1, and should contain the
27 statement: "**Applicable provisions of Division 1 shall govern work of this section.**"

28
29 The scope article should contain an "Index" to each subject contained in that Section.

30
31 The scope article should also include a paragraph listing "related work of other sections".

32
33 The Format of the Technical Section:

34
35 The format of the Technical Section should be simple, direct, and complete and follow
36 Construction Specifications Institute's format (Part 1 - General, Part 2 - Products and Part 3 -
37 Execution).

38
39 The subject should be set forth clearly, concisely, and systematically. All work shown on the
40 drawings should be covered in the specifications once and once only, under the appropriate
41 Technical Section. State everything that needs to be stated, but state it in the fewest words
42 consistent with the intended purpose. An excess of words lacks practical value, frequently results
43 in confusion, and may discourage careful reading. However, use of "abbreviated" or short form
44 specifications, or telegraphic language, using incomplete sentences often leads to misinterpretation
45 and lack of understanding.

46
47 The complimentary purposes of the drawings and specifications should not be interchanged or
48 duplicated. Drawings should show those project requirements that are best represented in graphic
49 form such as size, shape, number, and location of the various elements while the specifications
50 should include those requirements most readily expressed in words such as the required quality of
51 materials and equipment, workmanship and other technical requirements. Notes on drawings
52 should be made in broad, general terms, leaving more specific identification to the specifications.
53 However, it is well to assure proper coordination by repeating on the drawings the exact

terminology used in the specifications. The use of trade names on the drawings should be avoided.

All Sections, even if written by a consultant, should be written in the same format, and each Section should be a separate entity.

Each page of the Technical Section should have the section number, followed by the page number, and located at the bottom center of the page. This Explanation Section is a good example of the preferred system of page numbering.

The general subjects of the Technical Section should be clearly segregated and not repeated over and over again. General subjects comprise such topics as, Guaranty-Warranty, Shop Drawings, Samples, Tests, Inspections, Special Protection, Standards of Workmanship, Standards of Manufacture, Reference Specifications, Job Conditions, Sequence of Operations, Options, Cleaning, and other such topics of a general nature.

The detail or Technical Requirements of the section comprise such topics as Materials, Construction or Fabrication, and Installation. They must be written with competitive bidding in mind. Performance specifications may be used where no trade names or manufacturer's names are used, provided they are true performance specifications complete in every respect. When products or materials are specified by manufacturer or trade name, at least two or preferably three items of equal quality (similar price grouping and same or greater quality) should be named.

The Technical Section should have an ending. This can be done by simply typing a row of asterisks below final paragraph or by some other symbol indicating finality.

For convenience of reference and to facilitate letting of subcontracts, the Divisions are separated into SECTIONS. Where section numbers are omitted, no work in that section is included, or the work for that section is of a minor nature and is included in another section.

14. PREPRINTED (READ-ONLY) DOCUMENTS

The following documents are read-only and must be obtained from DFD's web page and inserted into the specification volume by the A/E.

- General Prime Contractor (GPC) Bid Bond (DOA-4190)
- Designation of Confidential and Proprietary Information Form (DOA-3027)
- Form A - Affidavit of Compliance – MBE/DVB Provisions (DOA-4266)
- Request for Submittal Approval Form (DOA-4523)
- Request for Subcontractors Approval Form (DOA-4225)

CONTRACT FORMS

- Performance Bond Form (DOA-4188)
- Payment Bond Form (DOA-4187)
- Contract Form (DOA-4504)

CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

- General Conditions of the General Prime Contractor Contract (DOA-4193P)

15. PREPARATION OF ADDENDA

The Addenda, like all other documents to the Contract, must follow a certain format, including numbering each line for ease in reference, and contain the necessary information that will clearly identify it with the Contract Documents and to be made a part thereof.

1 The Addendum shall have a heading that provides the Addendum number, date of issue, project title,
2 location, and project number. The bid closing time and date shall always be included in the Addendum. A
3 standard paragraph will then follow which stipulates the purpose of the Addendum.

4
5 The body of the addendum should consist of four parts as applicable: Changes to Bidding Requirements,
6 Changes to Conditions of Contract, Changes to Specifications and Changes to Drawings. If no changes are
7 being made in any of these parts, they should be left out of the addendum. Each addendum item must be
8 sequentially numbered, without repetition.

9
10 Changes made to the Contract Documents shall always be listed in the Addendum in the same numerical
11 sequence as they occur in the original documents.

12
13 When referencing an item in the specifications, such reference shall include the following, in the order
14 listed: Section number and title, page number, line number, and then pertinent information concerning the
15 item being changed.

16
17 When referencing an item in the drawings, such reference shall include the following, in the order listed:
18 Drawing Sheet Number; word description of item being changed such as 1st Floor plan, Door Schedule,
19 North elevation, etc; detail or section number; followed by description of change.

20
21 Closing on the Addendum shall consist of the title block for the Architect/Engineer and for the Division of
22 Facilities Development. **A sample Addendum is appended to this manual following the General**
23 **Requirements.**

24
25 Holding addendum information for consolidation into one large addendum is not desired. The
26 Architect/Engineer shall endeavor to release addenda in sufficient time for Bidders to review and
27 incorporate into their bids. Bidders are requested to bring inadequacies, omissions or conflicts to
28 Architect/Engineer's attention at least 14 days prior to Bid Opening. **The Architect/Engineer is therefore**
29 **requested to submit his last addendum to DFD no less than 10 days prior to Bid Opening so that**
30 **DFD can issue it no less than 7 days prior to bid opening. The addendum submittal is to be provided**
31 **on CD/DVD following the standard identified in the following Article # 19.** Approval from DFD must
32 be obtained to waive this requirement. If this requirement is waived, and an addendum is issued less than 7
33 days prior to bid opening, it shall contain an extension of the bid opening date for no less than 7 days from
34 the present bid opening date.

35
36 Any change to the bid form by addendum shall require that the corrected bid form be reissued rather than
37 reference the changes to be made. The corrected bid form shall have a heading to read: "REVISED BID
38 FORM".

39
40 DFD will issue an addendum if a "successful" MEP bid is withdrawn or rejected after the MEP
41 Subcontractors have been identified but before the General Prime Contractor bid opening. This addendum
42 will include a revised list of successful MEP bids that must be included in General Prime Contractor bids
43 and will move the General Prime Contractor bid opening five days later to allow bidders sufficient time to
44 update their bids based on the revised MEP list.

45 46 **16. SUPPLEMENTARY GENERAL CONDITIONS**

47 The General Conditions were created for use on projects that are State funded. In order to adapt these
48 documents to fit projects with Federal funds, an additional Supplementary General Conditions is provided
49 herein, which incorporate the necessary language that will satisfy Federal agency requirements.

50
51 When the Federal Supplement is used, it shall be used in lieu of the Standard State Supplementary General
52 Conditions. Everything contained in the Standard State Supplement has been incorporated into the Federal
53 Supplement to alleviate any need of transferring information.

1 **17. GENERAL REQUIREMENTS**

2 The General Requirements section contains numerous articles that may, or may not; apply to your
3 particular project. The articles must be read thoroughly and edited to fit the project. In some cases,
4 instructions to the Architect/Engineer have been included which is screen viewable in bold red print; these
5 instructions must not be included in the finished specifications.

6
7 Incorporate the appropriate commissioning technical section into the specifications following the General
8 Requirements.

9
10 **18. JOB SIGN**

11 Job sign identified as Appendix #1 to the General Requirements Section is to be used for projects involving
12 State funds. Job signs are not to be used on projects unless duration of more than 365 days is specified for
13 project.

14
15 **19. SUBMITTAL OF PRELIMINARY REVIEW DOCUMENTS**

16 With the permission of the Project Manager, the [Division One Preliminary Submittal](#) may be used in lieu of
17 a full Division 1 submittal. Hyperlink is active prior to saving the web document.

18
19 **20. SUBMITTAL OF ELECTRONIC BIDDING DOCUMENTS AND ADDENDA**

20 The original documents submitted to DFD via the DFD SharePoint site for reproduction and distribution in
21 an electronic format must be compiled and formatted to facilitate review and printing by recipients of the
22 electronic document files as though it were a printed specification volume. Specific instructions intended to
23 assist A/E's in preparing and submitting electronic documents ("print ready" drawing files, specification
24 volumes, and addenda) to DFD for distribution are available in Article 5.E.2 of the AE Policy & Procedure
25 Manual.

26 ***

**Ahuska Park Site Improvements
Department of Parks and Recreation
City of Monona
Monona, Wisconsin
GPC (General Prime Contractor) BID DOCUMENT**

Division Project No. 120616

December 6, 2016

FOR
THE STATE OF WISCONSIN
DEPARTMENT OF ADMINISTRATION
DIVISION OF FACILITIES DEVELOPMENT
STATE OF WISCONSIN ADMINISTRATION BUILDING - 7TH FLOOR
101 EAST WILSON STREET - P.O. BOX 7866
MADISON, WISCONSIN 53707

By

E Drive Design Company, 1415 Engineering Dr., Madison, WI 53706

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1 **GPC INVITATION TO BID** (Rev 10/2014)
2 DIVISION OF FACILITIES DEVELOPMENT

3
4 **Ahuska Park Site Improvements**
5 **Department of Parks and Recreation**
6 **City of Monona**
7 **Monona, Wisconsin**
8

9 Division Project No. 120616
10

11 **BID OPENING for MEP BIDDERS: 2:00 P.M., 2/1/17**

12 **BID OPENING for GENERAL PRIME CONTRACTOR BIDDERS: 2:00 P.M., 2/1/17**
13

14 OWNER: State of Wisconsin, Department of Administration, Division of Facilities Development,
15 hereinafter termed DFD.
16

17 **NOTICE: Effective January 1, 2014, all potential bidders must be certified by DOA prior to**
18 **submitting bids on state construction projects over \$50,000.** All bids received from contractors who are
19 not certified will be rejected. Contractor certification applications and instructions for completing the form
20 may be obtained from the DOA Website DFD Contractor Certification page:
21 <http://www.doa.state.wi.us/category.asp?linkcatid=857&linkid=125&locid=4> or upon request from DFD--
22 email dfdcertification@wisconsin.gov.
23

24 **This project is being let using a new single prime bidding and contracting process.** DFD will publicly
25 bid the applicable mechanical, electrical, plumbing, and fire protection (MEP) divisions of work **first**.
26 Within 5 days of the MEP bid opening, DFD will identify a lowest, qualified, responsible, certified bidder
27 in each applicable MEP division of work. These successful MEP bids must be included in all general prime
28 contractor bids received. No later than 5 days after DFD identifies the successful MEP bids, DFD will
29 publicly open general prime contractor bids. **General prime contractor bids that do not include the**
30 **successful MEP bids will be rejected.** The state will enter into a single contract with the lowest, qualified,
31 responsible, certified general prime contractor and this general prime contractor will enter into subcontracts
32 with the successful MEP bidders. If a project does not include any mechanical, electrical, plumbing, or fire
33 protection divisions of work, DFD will bid one bid package for all work to general prime contractors.
34

35 Sealed bids will be received at the State of Wisconsin Administration Building, 7th Floor, 101 East Wilson
36 Street, Madison, Wisconsin 53703, before the time indicated above. The bidder is responsible for the sealed
37 bid being delivered to the indicated location for receipt stamping before the time specified for the bid
38 opening. Third party delivery is entirely at the bidder's risk.
39

40 In general the work consists of (1) renovations to the existing 22-acre Ahuska park in Monona, WI,
41 including a parking lot expansion, shelter expansion, new pathway, athletic field regrading, drainage
42 swales, and rain garden installation; and (2) construction of a helical pile-supported wetland boardwalk
43 system extending approximately 1500' in length with an observation tower. There is a covered landfill
44 below the park that require extra precautions be taken during excavation activities. The majority of the
45 wetland area through which the boardwalk is to be constructed is composed of muck and contains standing
46 water year-round; thus, access to proper equipment will be key for constructability of the boardwalk.
47

48 Bidding documents (drawings, specifications, and addenda) may be obtained only as electronic files (in
49 PDF format): as a downloadable file from the Division's Projects Bidding website (see website address
50 below) and/or on compact discs or DVD by ordering from the Construction Project Bidding Opportunities
51 webpage. Bidding documents may also be seen at various Builders' Exchanges. Additional project bidding
52 information, including plan holders lists are available on the Division of Facilities Development public
53 website: <http://www.doa.state.wi.us/divisions/facilities-development>. After opening the web page, select
54 Current Construction Project Bidding Opportunities at the bottom of the screen.

1
2 Bidder shall identify the division of work they are bidding on when requesting Bidding Documents online.
3
4 **Base Bid will be received for: A single lump sum bid for All Work.**
5
6 No deposit is required to obtain documents for bidding purposes.
7
8 Bid Guarantee in the amount of 10% of the Bid must accompany each bid submitted.
9
10 Contract offer and construction phase records will be processed electronically on the WisBuild™ DFD
11 Information System.
12
13 Prevailing wage rates are applicable to this project. Those rates are included in the Supplementary General
14 Conditions of the Contract the General Prime Contractor will be required to enter into with DFD.
15
16 Bidding Documents will be available online immediately upon the project being advertised for bid.
17
18 ***

GPC INSTRUCTIONS TO BIDDERS (Rev 10/2014)

Division Project No. 120616

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1. DEFINITIONS

(a) "Mechanical, electrical, or plumbing subcontractor" ("MEP Subcontractor") is a contractor that performs mechanical (Heating, Ventilating, and Air Conditioning), electrical, plumbing, or fire protection (fire suppression) work for the Project, and enters into a contract with the General Prime Contractor to perform their division of work.

(b) "Qualified bidder" means a contractor that the department certifies under Wis. Stat. s. 16.855(9m)(b)1.

(c) "Qualified responsible bidder" means a contractor who is a qualified bidder and who is a responsible bidder.

(d) "Responsible bidder" means a contractor that the department certifies under Wis. Stat. s. 16.855(9m)(b)2.

(e) "Single prime contracting" means bidding and contracting through a process in which only a general prime contractor has a contractual relationship with the state and all mechanical, electrical, or plumbing subcontractors are identified by the department and are subcontractors to the General Prime Contractor.

(f) "General Prime Contractor" is a contractor that enters into a contract with the state to perform all work as required by the Contract Documents and enters into contracts with subcontractors including MEP Subcontractors identified by DFD.

(g) "Non-MEP Subcontractor" is a subcontractor to a General Prime Contractor in divisions of work other than mechanical, electrical, plumbing, and fire protection. This includes suppliers and installers to the General Prime Contractor.

(h) "Subcontractor" is all subcontractors on a project. This includes MEP Subcontractors, subcontractors to the MEP Subcontractors, and Non-MEP Subcontractors.

(i) "Contractor" is all contractors working on a project regardless of contractual relationship. This includes the General Prime Contractor, MEP Subcontractors, Non-MEP Subcontractors, and all Subcontractors, regardless of tier of subcontract.

2. GENERAL

Time for bid opening shall be the prevailing central standard or daylight saving time in force at Madison, Wisconsin, on the date set forth in the Invitation to Bid.

All potential bidders must be certified by DOA prior to submitting bids on state construction projects over \$50,000. All bids received from contractors who are not certified will be rejected. Contractor certification applications and instructions for completing the form may be obtained from the DOA Website DFD Contractor Certification page:
<http://www.doa.state.wi.us/category.asp?linkcatid=857&linkid=125&locid=4> or upon request from DFD-- email dfdcertification@wisconsin.gov.

This project is being let using a new single prime bidding and contracting process. DFD will publicly bid the applicable mechanical, electrical, plumbing, and fire protection (MEP) divisions of work first. Within 5 days of the MEP bid opening, DFD will identify a lowest, qualified, responsible, certified bidder in each applicable MEP division of work. These successful MEP bids must be included in all general prime contractor bids received. No later than 5 days after DFD identifies the successful MEP bids, DFD will publicly open general prime contractor bids. General prime contractor bids that do not include the successful MEP bids will be rejected. The state will enter into a single contract with the lowest, qualified, responsible, certified general prime contractor and this general prime contractor will enter into subcontracts with the successful MEP bidders. If a project does not include any mechanical, electrical, plumbing, or fire protection divisions of work, DFD will bid one bid package for all work to general prime contractors.

DFD will issue an addendum if a successful MEP bid is withdrawn or rejected after the MEP Subcontractors have been identified but before the General Prime Contractor bid opening. This addendum will include a revised list of successful MEP bids that must be included in General Prime Contractor bids and will move the General Prime Contractor bid opening five days later to allow bidders sufficient time to update their bids based on the revised MEP list.

Before submitting a bid, the Bidder shall examine all of the Bidding and Contract Documents listed in the Table of Contents of these specifications. The successful Bidder will be required to do all work which is shown on the drawings, mentioned in the specifications or reasonably implied as necessary to complete the contract for this project.

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

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

1
2 All bidders shall have established and diligently maintained a satisfactory safety program, and if eligible
3 for Experience Modification Rating (EMR), must have a rating of 1.20 or less as established by the
4 Wisconsin Compensation Rating Bureau (WCRB) or the National Council on Compensation Insurance
5 (NCCI).
6

7 **3. DRAWINGS AND SPECIFICATIONS**

8 The drawings and specifications that form a part of this contract, as stated in Article 3 of the General
9 Conditions, are listed in the Table of Contents of these specifications.
10

11 Complete sets of Contract Documents for all trades will be issued to all Bidders, irrespective of the
12 category of work to be bid on, in order that all Bidders may be familiar with the work of other trades as
13 they affect their bid.
14

15 **4. INTERPRETATION**

16 No verbal explanation or instructions will be given in regard to the meaning of the drawings or
17 specifications during the bid period. Bidders shall bring inadequacies, omissions or conflicts to the
18 Architect/Engineer's attention at least ten (10) days before the date set for bid opening. Prompt clarification
19 will be supplied to all bidders of record by addendum.
20

21 Failure to so request clarification or interpretation of the drawings and specifications will not relieve the
22 successful Bidder of responsibility. Signing of the contract will be considered as implicitly denoting that
23 the Contractor has thorough understanding of the scope of work and comprehension of the contract
24 documents.
25

26 Neither the Architect/Engineer nor DFD will be responsible for verbal instructions.
27

28 **5. MANDATORY PRE-BID DOA CERTIFICATION**

29 All potential bidders must become certified as qualified and responsible bidders **before** they can bid on
30 state projects over \$50,000. The criteria for determining certification of qualified and responsible bidders
31 are itemized in Wis. Stat. s. 16.855(9m). If DFD determines that more experience is necessary for a
32 particular project, DFD may include additional requirements.
33

34 **6. BID GUARANTEE**

35 A bid bond prepared on the Bid Bond Form bound herein, payable to the State in the amount not less than
36 10% of the maximum bid shall accompany each bid as a guarantee. A bank certified check or a cashier's
37 check may accompany each bid as a guarantee pursuant to Wis. Stat. s. 779.14(1m)(c)2.b. and 779.14(1s).
38 Failure to enter into the contract with the state (including failure to obtain certificate of insurance and
39 separate 100% performance and 100% payment bonds) may result in forfeiture of the Bid Bond. The
40 company issuing the Bonds must be licensed to do business in Wisconsin.
41

42 Any bid which is not accompanied by a bid guarantee will not be accepted and will not be read at the bid
43 opening.
44

45 All checks tendered as bid guarantee, except those of the three lowest bidders, will be returned to their
46 makers within three (3) days after bid opening. All such retained checks will be returned immediately upon
47 execution of the contract between the General Prime Contractor and the state.
48

49 **7. WITHDRAWAL OF BIDS**

50 Prior to the time fixed for bid opening, bids may be withdrawn by written request from the Bidder, without
51 prejudice to the right of the Bidder to file a new bid. Withdrawn bids will be returned unopened.
52

53 After the bid has been opened, negligence on the part of the Bidder in preparing their bid confers **no** right
54 for withdrawal of the bid without penalty.

1
2 If a bid contains an error, omission, or mistake, the bidder may limit liability to the amount of their bid
3 guarantee by giving DFD written Notice, within seventy-two (72) hours of the bid opening, of their intent
4 not to execute the contract with the state. If no such notice is given, DFD reserves the right to obtain the
5 amount of the difference in bid price between the low bidder and the next low bidder.
6

7 **8. CONTRACT FORM**

8 These specifications include a copy of the contract the successful Bidder is required to enter into with the
9 state. Bidders shall read and understand the conditions contained in this contract. The successful Bidder
10 will be offered a contract through WisBuild to the contact provided by the bidder on the Bid Form.
11

12 **9. CONTRACT INTERESTS BY STATE PUBLIC OFFICIALS**

13 In accordance with section 19.45(6) of the Wisconsin Statutes, no state public official, member of a state
14 public official's immediate family, nor any organization with which the state public official or a member of
15 the official's immediate family owns or controls at least 10% of the outstanding equity, voting rights, or
16 outstanding indebtedness may enter into any contract or lease involving a payment or payments of more
17 than \$3,000 within a twelve (12) month period, in whole or in part derived from state funds unless the state
18 public official has first made written disclosure of the nature and extent of such relationship or interest to
19 the board and to the department acting for the state in regard to such contract or lease. Any contract or
20 lease entered into in violation of this subsection may be voided by the state in an action commenced within
21 three (3) years of the date on which the ethics board, or the department or officer acting for the state in
22 regard to the allocation of state funds from which such payment is derived, knew or should have known
23 that a violation of this subsection had occurred. This subsection does not affect the application of s.946.13.
24

25 **10. DISCLOSURE OF OWNERSHIP**

26 The Bidder shall disclose on the date of submitting a bid for this project, the name of any construction
27 business of which the Bidder has had a 25% or greater interest as a shareholder, officer, partner, or owner
28 at any time during the preceding three (3) years, if said construction business has been found by the
29 Department of Workforce Development to have failed to pay the prevailing wage rate or at least 1.5 times
30 the hourly basic rate of pay for hours worked in excess of the prevailing hours of labor to any employee at
31 any time within the preceding three (3) years.
32

33 The "Disclosure of Ownership" form may be obtained at no charge from the Department of Workforce
34 Development, Equal Rights Division, P.O. Box 8928, Madison, Wisconsin 53708.
35

36 **11. MINORITY BUSINESS ENTERPRISE AND DISABLED VETERAN-OWNED BUSINESS** 37 **INVOLVEMENT**

38
39 "Minority Business Enterprise" (MBE) means: a business certified by the Wisconsin Supplier Diversity
40 Program under Wis. Stat. s. 16.287(2).
41

42 "Disabled Veteran-Owned Business" (DVB) means: a business certified by the Wisconsin Supplier
43 Diversity Program under Wis. Stat. s. 16.283(3).
44

45 In awarding construction contracts, the Department of Administration shall attempt to ensure that 5 percent
46 of the total amount expended in each fiscal year is awarded to contractors which are minority businesses, as
47 defined under Wis. Stat. s. 16.75(3m)(a). The General Prime Contractor Bidder shall make every effort to
48 award a minimum of 15% of the work to minority business enterprises (MBE) involvement for all projects
49 within 60 mile radius of Milwaukee and 5% for projects located elsewhere.
50

51 In awarding construction contracts, the Department of Administration shall attempt to ensure that at least 1
52 percent of the total amount expended each fiscal year is awarded to contractors that are disabled veteran-
53 owned businesses.
54

1 In order to assist the department in these endeavors we strongly encourage General Prime Contractors to
2 use MBEs and DVBs.

3
4 General Prime Contractor Bidders shall submit a "Form A Affidavit of Compliance – Minority Business
5 Enterprise and Disabled Veteran-Owned Business Provision" with their bid or within seven days of the
6 general prime contractor bid opening. This form should indicate the percentage of MBE/DVB participation
7 commitment. Submission of a completed Affidavit of Compliance is an element of responsiveness. Failure
8 to submit this completed form within the above time limits may be considered unresponsiveness and may
9 result in contract award to the next apparent low bidder. All MEP Subcontractor Bidders shall also make
10 every effort to encourage MBE and DVB involvement.

11
12 Every General Prime Contractor will be required to submit a report to DFD, on a monthly basis and upon
13 completion of the contract, which identifies the Minority Business Enterprises and Disabled Veteran-
14 Owned Business to whom work was directly subcontracted and the value of said work. Subcontractors,
15 material suppliers, etc. under contract to a subcontractor of a General Prime Contractor may not be used for
16 reporting purposes under this paragraph without prior approval of the Wisconsin Supplier Diversity
17 Program office. A MBE/DVB monthly report form will be sent to the Bidder after the Notice to Proceed is
18 issued.

19
20 For assistance in identifying DOA certified MBE and DVB companies, please contact the Department of
21 Administration Supplier Diversity Program at: DOABDMBD@wisconsin.gov, or by telephone at:
22 (608)267-9550, or visit their website at: [http://www.doa.wi.gov/Divisions/Enterprise-Operations/Supplier-](http://www.doa.wi.gov/Divisions/Enterprise-Operations/Supplier-Diversity-Program)
23 [Diversity-Program](http://www.doa.wi.gov/Divisions/Enterprise-Operations/Supplier-Diversity-Program).

24 25 **12. SUBSTANCE ABUSE PREVENTION**

26 Mission/Purpose: The State of Wisconsin recognizes and supports drug-free workplace programs as an
27 important element in the national strategy to reduce the devastating effects of drug and alcohol abuse in our
28 society. The State requires contractors, subcontractors, suppliers and vendors to establish and enforce
29 drug-free workplace policies and programs that conform to Sec 103.503 of the Wisconsin Statutes.

30
31 Statement: The possession, use of, distribution or purchase of illegal drugs, or use of alcohol at work by
32 any employee on State of Wisconsin construction job sites, is strictly prohibited.

33
34 The terms of this Substance Abuse Program Statement shall cover all construction personnel who are
35 working on State of Wisconsin job sites. This includes employees of all Contractors, Subcontractors,
36 contractor suppliers, and their employees working at the job site.

37
38 General Prime Contractor's and Subcontractor's Written Program: Each General Prime Contractor and
39 Subcontractor shall have in place a written Substance Abuse Program conforming to Sec 103.503(3) of the
40 Wisconsin Statutes.

41
42 In addition, representatives of the State who believe that any General Prime Contractor's or Subcontractor's
43 employee may be under the influence of alcohol or drugs shall, where deemed appropriate, contact the
44 General Prime Contractor's or Subcontractor's appropriate management/supervision authority and request
45 that appropriate action be taken. The General Prime Contractor's or Subcontractor's employer shall
46 immediately remove an employee who is suspected of being under the influence of illegal drugs or alcohol
47 shall be immediately removed from the job site.

48
49 Procedures for testing and handling of positive drug tests shall be in compliance and consistent with State
50 and Federal laws.

51
52 Costs of Substance Abuse Programs and Testing: The cost associated with the development,
53 implementation and enforcement of Substance Abuse Programs and any testing required shall be the
54 responsibility of each individual General Prime Contractor and Subcontractor for their respective

employees working on the job site. The State will not be responsible for any cost of substance abuse testing, rehabilitation or medical reviews related to substance abuse.

The General Prime Contractor and Subcontractors shall indemnify and hold the State harmless from any damages or other costs incurred that are related to the implementation or enforcement of any substance abuse policy or program.

13. METHOD OF AWARD - RESERVATION

General prime contractor bids that do not include the successful MEP bids identified by DFD will be rejected.

The general prime contract will be awarded based on the following, as long as the cost does not exceed the amount of project funds available:

The lowest dollar amount is submitted by a qualified, responsible, certified bidder on a SINGLE BASE BID for all work comprising the project.

Should a qualified, responsible, certified minority business enterprise or disabled veteran-owned business submit a bid that is no more than 5% higher than the apparent low bid, the Contract may be awarded to the minority business enterprise or disabled veteran-owned business.

Firms wishing to be considered for the 5% bidding preference must be certified as a minority business enterprise or disabled veteran-owned business by the Wisconsin Supplier Diversity Program and so indicate in the space provided on the Bid Form that preference is requested.

DFD reserves the right to reject any and all bids, or to waive any informality in any bid, or to accept any bid which will serve the best interests of the State.

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

14. SECURITY FOR SEPARATE 100% PERFORMANCE AND SEPARATE 100% PAYMENT

Bidder is required to furnish separate 100 % performance and 100 % payment bonds to the benefit of the Department of Administration as the sole obligee. These bonds shall be delivered to the State with the signed contract. The Surety Company shall be licensed to do business in Wisconsin. The Bond must be dated the same date or subsequent to the date of the Contract.

A certified copy of power of attorney shall be provided by the Surety Company showing that the agent who signs the Bond has the power of attorney to sign for the Surety Company. This power of attorney must be signed by the Secretary or Assistant Secretary of the company and not by an attorney-in-fact. The power of attorney must bear the same or later date as the bond.

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

If the Bidder is a corporation, a current certified copy of the resolution or other official act of the directors of the corporation must be submitted showing that the person who signs the contract is authorized to sign contracts for the corporation. The corporate seal must be affixed to the resolution, contract, and separate performance and payment bonds. If the Bidder's corporation has no seal, the above documents must include a statement or notation to the effect that the corporation has no seal.

15. TAXES

The Bidder shall include in the bid, all Sales, Consumer, Use and other similar taxes required by law.

1
2 In accordance with section 71.80(16)(a), Wis. Stats., SURETY BOND; NONRESIDENT CONTRACTOR.
3 "All nonresident persons, whether incorporated or not, engaging in construction contracting in this state as
4 contractor or subcontractor and not otherwise regularly engaged in business in this state, shall file a surety
5 bond with the department (Wisconsin Department of Revenue MS 5-77 Attn: Non-Resident Surety Bonds,
6 2135 Rimrock Rd., Madison, WI 53713, telephone (608)266-2776) payable to the department of revenue,
7 to guarantee the payment of income taxes, required unemployment compensation contributions, sales and
8 use taxes and income taxes withheld from wages of employees, together with any penalties and interest
9 thereon. The amount of the bond shall be 3% of the contract or subcontract price on all contracts of
10 \$50,000 or more..."

11 12 **16. SUBMISSION OF BIDS**

13 All bids shall be submitted on the standard Bid Forms and only bids that are made on the Bid Forms will be
14 considered. The entire Bid Form including the Addendum Receipt/Signature page, the Bid Bond Form, (if
15 used), and other supporting documents (if any), shall be filled out and submitted in the manner specified
16 hereinafter. SPECIFICATIONS SHALL NOT ACCOMPANY BID.

17
18 No bids for any subdivision or any subclassification of this work, except as indicated, will be accepted.
19 Any conditional bid, amendment to the Bid Form or appendant thereto, the inclusion of any
20 correspondence, written or printed matter, unsolicited material or data, or details of any nature other than
21 the information specifically called for, will disqualify the Bid. Telecommunication alterations to the bid
22 will not be accepted.

23
24 Space is provided on the Bid Form for General Prime Contractor's single bid. Appropriate insertions are as
25 follows: numerals indicating the cost of the work, \$0 if there is no cost for the work, or the words 'No Bid'
26 if the bidder is not intending to bid the work. Blank space(s) will be considered the same as 'No Bid'.
27

28 **Bidders shall submit a Single Base Bid for all the work.**

29
30 Spaces are also provided on the Bid Form for General Prime Contractor's to list the successful MEP
31 Subcontractors bids included in the General Prime Contractor's single base bid.
32

33 **General prime contractor bids that do not include the successful MEP bids identified by DFD will be**
34 **rejected.**

35
36 Any addendum issued during the time of bidding shall become a part of the Contract Documents. Bidders
37 shall acknowledge receipt of such addendum in the appropriate space provided on the Bid Form. Bid will
38 be rejected if receipt of an addendum applicable to the award of contract has not been acknowledged on the
39 Bid Form.
40

41 All Bidders are encouraged to submit their bids using the **SEALED BID** envelope label that is provided
42 within the specifications. DFD is not responsible for bids not clearly labeled as required. Bids shall be
43 signed, sealed, and delivered to the place indicated in the Invitation to Bid before the time designated in the
44 Invitation to Bid. All bids shall be identified with the Project Name, Project Number, Project Location,
45 Category of Work being bid on, Bid Date, and the Name and Address of Bidder. **Delivery to a post office**
46 **box does not constitute receipt of a bid.**
47

48 Bidder shall be responsible for the sealed bid being delivered to the place designated for the bid opening
49 before the time specified. Bids received after the time indicated in the Invitation to Bid will be rejected and
50 returned to Bidder unopened.
51

52 Bid will be considered invalid and will be rejected if it has not been signed by the Bidder.
53

Bids will be rejected if the bidder is not certified by DOA in the division(s) of work they bid on and/or if their bid amount exceeds their certification threshold in that division of work.

17. BASE BID

Base Bids shall be received as follows:

SINGLE BASE BID FOR ALL THE WORK.

Base Bid No. 1. All Work, as per specification Divisions 2 thru 33, applicable provisions of Division 1 and related drawings.

General prime contractor bids that do not include the successful MEP bids identified by DFD will be rejected.

18. INFORMATIONAL BIDS

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

19. UNIT PRICES

Unit prices requested on the Bid Form shall be given and, if included in the General Prime Contract, will be used for additions to or deductions from amount of work required under the Contract. Unit prices shall include all costs of materials, labor, insurance, taxes, overhead and profit.

DFD reserves the right to reject any unit prices as given in the bid if they are considered excessive or unreasonable, or to accept any or all of the unit prices that may be considered fair and reasonable. If any unit price is rejected, the work governed by such unit price, if required, shall be treated as specified in General Conditions, Article entitled "Changes in the Work".

The Bidder shall refer to the Bid Form and the applicable technical section to determine the basis of unit measure and the detailed information related to each unit price item requested.

The GPC shall list a **total** unit price for each item requested on the Bid Form. The **total** unit price listed should be calculated by adding the unit price included with the MEP bid to the cost of any GPC work required for that item.

20. STATED ALLOWANCES

The Bidder shall include the following cash allowances in the bid:

None

21. SUBCONTRACTORS

GENERAL PRIME CONTRACTOR SUBCONTRACT WITH MEP SUBCONTRACTORS:

The successful General Prime Contractor will offer a subcontract to the successful MEP Subcontractors identified by DFD and included in the General Prime Contractor's bid. This subcontract between a General Prime Contractor and a MEP Subcontractor **must** include a scope of work clause identical to the scope of work clause included in the Bid Documents and the contract between the General Prime Contractor and the state. A General Prime Contractor and an MEP Subcontractor may not enter any agreement in connection with bids submitted that would alter or affect the scope or price of the contracts entered into. This prohibition does **not** apply to DFD change orders that result in changes to the plans or specifications, or to back charges allowed by the contract.

1 The General Prime Contractor must base the Project Schedule on the schedule that the MEP Subcontractors
2 and General Prime Contractors bid on (in the specifications or bid instructions), unless otherwise agreed to
3 by the MEP Subcontractor.

4
5 As the work progresses under any MEP subcontract for construction of a project, the General Prime
6 Contractor shall, upon request of a subcontractor, pay to the subcontractor an amount equal to the
7 proportionate value of the subcontractor's work properly completed, less retainage. The retainage shall be
8 an amount equal to not more than 5 percent of the subcontractor's work completed until 50 percent of the
9 subcontractor's work has been completed. At 50 percent completion, no additional amounts may be
10 retained, and partial payments shall be made in full to the subcontractor unless the department certifies that
11 the subcontractor's work is not proceeding satisfactorily. At 50 percent completion or any time thereafter
12 when the progress of the subcontractor's work is not satisfactory, additional amounts may be retained but
13 the total retainage may not be more than 10 percent of the value of the work completed. Upon substantial
14 completion of the subcontractor's work, any amount retained shall be paid to the subcontractor, less the
15 value of any required corrective work or uncompleted work. All payments the General Prime Contractor
16 makes under this paragraph shall be within 7 calendar days after the date on which the General Prime
17 Contractor receives payment from the department.

18
19 The contract entered into between the General Prime Contractor and an MEP Subcontractor must contain
20 all of the following clauses:

21
22 **Scope of Work.** The MEP Subcontractor scope of work is identical to the General Prime
23 Contractor scope of work included in these bidding and contract documents. By submitting and
24 signing a bid, all bidders have examined all of the Bidding Documents listed in the Table of
25 Contents of the project specifications. The successful bidders will be required to do all work
26 which is shown on the drawings, mentioned in the specifications, or reasonably implied as
27 necessary to complete the division of work bid for this project.

28
29 **Prompt Payment.** (general prime contractor) shall pay (mechanical, electrical, or plumbing
30 subcontractor) in accordance with section 16.855(19)(b), Wisconsin stats, for work that has been
31 satisfactorily completed and properly invoiced by (mechanical, electrical, or plumbing
32 subcontractor). A payment is timely if it is mailed, delivered, or transferred to (mechanical,
33 electrical, or plumbing subcontractor) by the deadline under section 16.855(19)(b), Wisconsin
34 stats.

35 If (mechanical, electrical, or plumbing subcontractor) is not paid by the deadline in this contract,
36 (general prime contractor) shall pay interest on the balance due from the eighth day after the
37 (general prime contractor) receives payment from the Department of Administration for the work
38 for which payment is due and owing to (mechanical, electrical, or plumbing subcontractor), at the
39 rate specified in section 71.82, Wisconsin stats., compounded monthly.

40 A (mechanical, electrical, or plumbing subcontractor) that receives payment as provided under this
41 contract and that subcontracts with another entity shall pay those subcontractors, and be liable for
42 interest on late payments to those subcontractors, in the same manner as the (general prime
43 contractor) is required to pay the (mechanical, electrical, or plumbing subcontractor) under this
44 contract.

45
46 **Insurance and Bonds.** (mechanical, electrical, or plumbing subcontractor) shall not commence
47 work under this contract until it has obtained all necessary insurance required of (mechanical,
48 electrical, or plumbing subcontractor) in the contract between the (general prime contractor) and
49 the Department of Administration. (mechanical, electrical, or plumbing subcontractor) shall
50 provide a separate 100 percent performance bond and a separate 100 percent payment bond to the
51 benefit of the (general prime contractor) as the sole named obligee. Original bonds shall be given
52 to the (general prime contractor) and a copy shall be given to the Department of Administration no
53 later than 10 days after execution of this contract.

1 **Indemnification.** To the fullest extent permitted by law, (mechanical, electrical, or plumbing
2 subcontractor) shall defend, indemnify, and hold harmless (general prime contractor) and its
3 officers, directors, agents, and any others whom (general prime contractor) is required to
4 indemnify under its contract with the department, and the employees of any of them, from and
5 against claims, damages, fines, penalties, losses, and expenses, including but not limited to
6 attorney fees, arising in any way out of or resulting from the performance of the work under this
7 contract, but only to the extent such claim, damage, fine, penalty, loss, or expense: (1) is
8 attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of property,
9 including but not limited to loss of use resulting therefrom and is caused by the negligence, or acts
10 or omissions, of (mechanical, electrical, or plumbing subcontractor), its subcontractors, any of
11 their employees, and anyone directly or indirectly employed by them or anyone for whose acts
12 they may be liable, or (2) as related to such claims, damages, fines, penalties, losses, and expense
13 of or against (general prime contractor), results from or arises out of the negligence of the (general
14 prime contractor) or other fault in providing general supervision or oversight of the work of
15 (mechanical, electrical, or plumbing subcontractor) or (3) as related to claims, damages, fines,
16 penalties, losses, and expense against the Department of Administration, arises out of the
17 department's status as owner of the project or project site.

18 In addition (mechanical, electrical, or plumbing subcontractor) shall defend, indemnify, and hold
19 harmless (general prime contractor) and its officers, directors, agents, and any others (general
20 prime contractor) is required to indemnify under its contract with the department, and the
21 employees of any of them, from any liability, including liability resulting from a violation of any
22 applicable safe place act, that (general prime contractor) or the state incurs to any employee of
23 (mechanical, electrical, or plumbing subcontractor) or any third party where the liability arises
24 from a derivative claim from said employee, when the liability arises out of the failure of the
25 (general prime contractor) or the state to properly supervise, inspect, or approve the work or work
26 area of (mechanical, electrical, or plumbing subcontractor), but only to the extent that the liability
27 arises out of the acts or omissions of (mechanical, electrical, or plumbing subcontractor), its
28 employees, or anyone for whom (mechanical, electrical, or plumbing subcontractor) may be liable,
29 or from (mechanical, electrical, or plumbing subcontractor's) breach of its contractual
30 responsibilities or arises out of (general prime contractor's) negligence or other fault in providing
31 general supervision or oversight of (mechanical, electrical, or plumbing subcontractor's) work or
32 arises out of the Department of Administration's status as owner of the project or project site. In
33 claims against (general prime contractor) or the state by an employee of (mechanical, electrical, or
34 plumbing subcontractor) or its subcontractors or anyone for whose acts (mechanical, electrical, or
35 plumbing subcontractor) may be liable, the indemnification obligation of this paragraph is not
36 limited by a limitation on amount or type of damage, compensation, or other benefits payable by
37 or for the (mechanical, electrical, or plumbing subcontractor) subcontractors under workers
38 compensation act.

39 Except as identified above, the obligations of (mechanical, electrical, or plumbing subcontractor)
40 under this indemnification do not extend to the liability of (general prime contractor) and its
41 agents or employees arising out of (1) preparation or approval of maps, drawings, opinions,
42 reports, surveys, change orders, designs, or specifications; (2) the giving of or failure to give
43 directions or instructions by the (general prime contractor) or the Department of Administration or
44 their agents or employees provided the giving or failure to give is the cause of the injury or
45 damage; or (3) the acts or omissions of other subcontractors.

46
47 **Retainage.** Retainage shall occur and be in amounts and on a schedule equal to that in the
48 contract between (general prime contractor) and the Department of Administration.
49

50 **MEP AND NON-MEP SUBCONTRACTORS:**

51 Bidders shall submit a completed Request for Subcontractor Approval (Form DOA-4225) with their bid or
52 within seven days of the general prime contractor bid opening. The Request for Subcontractor Form shall
53 also include, to the extent practicable, a list of their suppliers furnishing materials for the project.
54 Submission of a completed Request for Subcontractor Approval form is an element of responsiveness.

Failure to submit this completed form within the above time limits will be considered unresponsiveness and may result in contract award to the next apparent low bidder. Refer to Article 11 of the General Conditions for further information.

22. COMMENCEMENT AND COMPLETION

The successful General Prime Contractor Bidder must agree to commence the work on or before a date to be specified in a written "Notice to Proceed" issued by the state and to fully complete all the work within [] consecutive calendar days thereafter. Completion time will be converted to a specific date at the time the "Notice to Proceed" is issued. Refer also to General Conditions, Article entitled "Time for Completion of the Project."

The General Prime Contractor must base the Project Schedule on the schedule that the MEP Subcontractors and General Prime Contractors bid on (in the specifications or bid instructions), unless otherwise agreed to by the MEP Subcontractor. These milestones will be incorporated into the master project schedule after the Notice to Proceed is issued. The schedule must include, but is not limited to, the following milestone categories as they apply to the project:

Start Date (Month/Year)	End Date (Month/Year)	Schedule Milestones
		Mobilization
		Excavation and Site Work
		Footings and Foundations
		Building Enclosure
		MEP Underground and Site Utilities
		MEP Overhead Rough-in
		MEP Finishes
		Pre-functional Testing and Commissioning
		Architectural Finishes
		Substantial Completion

23. WisBuild™ DFD INFORMATION SYSTEM

Contract offer and construction phase records including Questions, Requests for Information, Construction Bulletins, Proposals, Change Orders, Schedule of Values, and Requests for Payment will be processed electronically on the WisBuild™ DFD Information System. Other construction phase records and applications will be implemented, as they become available.

Successful Bidders shall have available for use within 72 hours of the bid date and maintain over the course of the construction phase, from date of Notice-to-Proceed through receipt of Final Payment, an Internet connection to access and utilize the WisBuild™ DFD Information System.

24. WORK BY THE STATE

The following work will be accomplished by DFD or will be let under separate contracts and will not be included under the General Prime Contract:

ASBESTOS ABATEMENT:

Removal of building materials identified as asbestos-containing materials (ACM) that will be disturbed by renovation work, including ACM thermal system insulation, ACM spray applied and trowel applied surfaces, cement-asbestos products, ACM flooring and associated ACM flooring mastics and friable miscellaneous ACM. See General Requirements, HAZARDOUS SUBSTANCES for regulatory requirements, materials testing results, and General Prime Contractor's responsibility regarding ACM.

BID FORM – GENERAL PRIME CONTRACTOR (GPC) (Rev 10/2014)
DIVISION OF FACILITIES DEVELOPMENT
s.16.855 Wis. Stats.

**Ahuska Park Site Improvements
Department of Parks and Recreation
City of Monona
Monona, Wisconsin**

Division Project No. 120616

General Prime Contractor (GPC) Bid Opening: 2:00 P.M., 2/1/17

To: State of Wisconsin, Department of Administration, Division of Facilities Development

(a joint venture)

(a corporation)

(a partnership)

We _____ (an individual)

(Cross out inapplicable)

Of _____
Street City County State Zip

hereby agree to execute a contract with the Division of Facilities Development (DFD) and a subcontract with all successful MEP Bidders identified by DFD and listed in this bid, and to furnish satisfactory separate 100% Performance Bond and 100% Payment Bond in the amount specified no later than ten (10) days of the contract offer, and to provide all labor and material required for the construction of the project designated above, for the prices hereinafter set forth, in strict accordance with the Contract Documents prepared by **E Drive Design** for DFD and dated **2/1/17**.

WisBuild™ Data Information System Contact Instructions:

(For use by DFD to offer contract and activate WisBuild™ accounts to the successful bidders)

Contact name: _____

Telephone Number: _____

Email address: _____

FAX Number: _____

IMPORTANT: BEFORE SUBMITTING YOUR BID, PLEASE VERIFY THAT:

1. You have been **certified by DOA as a qualified and responsible bidder** for the amount of your bid within the division(s) of work being bid.
2. You have **entered all Bid amounts in numeric characters** (Example: \$9,999);
3. You have **acknowledged receipt of all addenda**;
4. You have **signed the Bid Form**
5. You have **included a valid Bid Guarantee** for not less than 10% of the value of the bid as either:
 - a) a Bid Bond signed by the contractor and surety and with a Power of Attorney attached, **or**
 - b) a Cashier's Check or Bank Check pursuant to Wis stats. s. 779.14(1m)(c)2.b. and 779.14(1s). A Company or Personal Check will not be accepted.

SINGLE BASE BID - GENERAL PRIME CONTRACTOR

ALL WORK

BASE BID NO 1. ALL WORK required to fully complete the project in accordance with the Contract Documents,

for the sum of (\$_____)

Enter bid amount in numeric characters only (Example: \$9,999). See Instructions to Bidders 'Article 16 Submission of Base Bids' for detailed instructions.

Base Bid No. 1 includes the bids from the following successful MEP Subcontractors identified by DFD for the mechanical, electrical, plumbing, and fire protection divisions of work in this project. The General Prime Contractor shall enter into subcontracts with these MEP Subcontractors:

Fire Suppression Base Bid No. 2:

Identified Subcontractor:_____

Amount:_____

Plumbing Base Bid No. 3:

Identified Subcontractor:_____

Amount:_____

Heating Ventilating and Air Conditioning Base Bid No. 4:

Identified Subcontractor:_____

Amount:_____

Electrical Base Bid No. 5:

Identified Subcontractor:_____

Amount:_____

INFORMATIONAL BID NO. 1-IA, For accounting purposes only, the following lump sum amount has been included in Base Bid No. 1 for

(\$_____)

Enter bid amount in numeric characters only (Example: \$9,999).

UNIT PRICES (listed below are for additions to or deductions from amount of work required under the contract.) (Applicable to Base Bid No. 1)

Item	Unit Price
------	------------

\$_____	Per
---------	-----

Enter bid amount in numeric characters only (Example: \$9,999).

1 COMMENCEMENT AND COMPLETION OF CONTRACT WORK
2 The undersigned agrees, if awarded the contract, to enter into a subcontract with the MEP Bidders
3 identified by DFD, and to commence the Contract work on or before a date to be specified in a written
4 Notice to Proceed, and to complete the work in accordance with the project schedule in the Instructions to
5 Bidders.
6
7 ADDENDUM RECEIPT
8 We acknowledge receipt of the following Addenda:
9
10 Addendum No. _____ Date _____
11
12 Addendum No. _____ Date _____
13
14 Addendum No. _____ Date _____
15
16 Addendum No. _____ Date _____
17
18 PRIOR TO SIGNING, BIDDERS' ATTENTION IS DIRECTED TO INSTRUCTIONS TO BIDDERS TO
19 AVOID THE POSSIBILITY OF INVALIDATING THIS BID.
20
21 BY SIGNING THIS BID FORM, THE BIDDER ATTESTS TO PERSONAL KNOWLEDGE OF THE
22 FOLLOWING:
23

- | | |
|----|---|
| 1. | Bidder is <u>certified</u> by DOA as a qualified and responsible bidder for the amount of the bid submitted, within the division(s) of work being bid. |
| 2. | In accordance with Wis. Stats. 16.855 (13) and (14) and ARTICLE 21 of these Bidding Documents, Bidder agrees to enter into a subcontract with the successful MEP Subcontractors identified by DFD. |
| 3. | Bidder has examined the drawings and specifications, carefully prepared the bid form, and has reviewed all forms in detail before submitting bid; and bidder, or the agents, officers, or employees thereof, have not, either directly or indirectly, entered into any agreement, bid rigging, bid rotation, participated in any collusion, or otherwise taken any action in restraint of free competitive bidding in connection with this bid. |
| 4. | That all work will be performed at the Bidder's own proper cost and expense, that the Bidder will furnish all necessary materials, labor, tools, machinery, apparatus, and other means of construction in the manner provided in the applicable specifications, and at the time stated in the contract. |

24
25
26
27 _____
28 (Firm Name)
29
30 (Seal, if bid is by a corporation) _____
31 (Bidder's Printed Name)
32 Date: _____ By _____
33 (Signature of Bidder)
34
35 [] Place an "X" in the box if Bidder is certified as a minority business enterprise or disabled
36 veteran-owned business by the Wisconsin Supplier Diversity Program and wishes to be
37 considered for the 5% bidder preference.

From:

IMPORTANT: BEFORE SUBMITTING YOUR BID, PLEASE VERIFY THAT:

- 1. You have been **certified by DOA as a qualified and responsible bidder** for the amount of your bid within the division(s) of work being bid.
- 2. You have **entered all Bid amounts in numeric characters** (Example: \$9,999);
- 3. You have **acknowledged receipt of all addenda**;
- 4. You have **signed the Bid Form**
- 5. You have **included a valid Bid Guarantee** for not less than 10% of the value of the bid as either:
 - a) a Bid Bond signed by the contractor and surety and with a Power of Attorney attached, **or**
 - b) a Cashier’s Check or Bank Check pursuant to Wis. Stat. s. 779.14(1m)(c)2.b. and 779.14(1s). A Company or Personal Check will not be accepted.

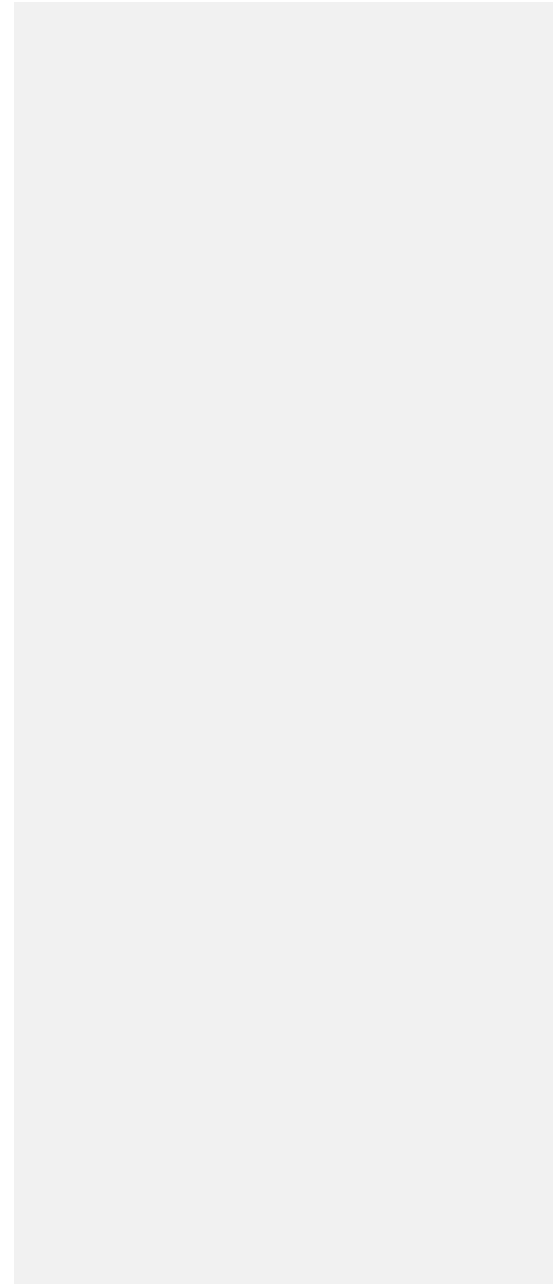
SEALED BID

Project Name	<hr/>
Project No.	<hr/>
Location	<hr/>
Bid Category	<hr/>
Bid Date	<hr/>

To: **Department of Administration
Division of Facilities Development
101 E. Wilson Street, 7th Floor
Madison, WI 53703**

(Complete and securely tape to exterior of sealed envelope)

Left Blank





GENERAL PRIME CONTRACTOR (GPC) BID BOND

KNOW ALL PEOPLE BY THESE PRESENTS, that _____
(a corporation of the State of _____) (individual), (partnership) (hereinafter referred to as the
"Principal"), and _____, a corporation of the State of _____

Name of Surety

(hereinafter referred to as the "Surety"), are held and firmly bound unto the State of Wisconsin, for Department of Administration, Division of Facilities Development (hereinafter referred to as "DFD"), in the penal sum of ten percent (10%) of the amount of the total bid or bids of the Principal herein accepted by DFD, for the payment of which the Principal and the Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

The conditions of this obligation are such that, whereas the Principal has submitted, or is about to submit, to the State of Wisconsin a certain bid, including the related combined bids attached hereto and hereby made a part hereof, to enter into a Contract in writing for _____

Type of Work

for the _____
Project

- (1) If said bid is rejected by DFD, then this obligation shall be void; or
- (2) If said bid is accepted by DFD and the Principal shall execute and deliver a Contract in the form specified by DFD (properly completed in accordance with said bid) and shall furnish a separate 100% performance bond for the Principal's faithful performance of said Contract, and a 100% payment bond for the payment of all persons performing labor or furnishing materials in connection therewith, and shall in all other respects perform the agreement created by the acceptance of said bid, then this obligation shall be void; or
- (3) If said bid is accepted by DFD and the Principal shall fail to execute and deliver the Contract and the performance and payment bonds noted in (2) above, all within the time specified or any extension thereof, the Principal and Surety agree jointly and severally to forfeit to DFD the penal sum mentioned above, it being understood that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal sum of this obligation as stated. Notice will be given by DFD to the Principal and Surety of intent to request payment of all or any part of the penal sum, a minimum of 7 calendar days before making demand of payment. Payment of the penal sum by the Surety and its bond shall be received by DFD within 72 hours following demand by DFD.

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

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

SEAL:

Principal

Date

By: _____

SEAL:

Name of Surety

Date

By: _____

NOTE TO SURETY AND PRINCIPAL: The bid submitted, which this bond guarantees, may be rejected if the following instrument is not attached to this bond: Power of Attorney showing that the agent of Surety is currently authorized to execute bonds on behalf of the Surety, and in the amounts referenced above.



DESIGNATION OF CONFIDENTIAL AND PROPRIETARY INFORMATION

The attached material submitted in response to Bid/Proposal #_____ includes proprietary and confidential information which qualifies as a trade secret, as provided in s. 19.36(5), Wis. Stats., or is otherwise material that can be kept confidential under the Wisconsin Open Records Law. As such, we ask that certain pages, as indicated below, of this bid/proposal response be treated as confidential material and not be released without our written approval.

Prices always become public information when bids/proposals are opened, and therefore cannot be kept confidential.

Other information cannot be kept confidential unless it is a trade secret. Trade secret is defined in s. 134.90(1)(c), Wis. Stats. as follows: "Trade secret" means information, including a formula, pattern, compilation, program, device, method, technique or process to which all of the following apply:

1. The information derives independent economic value, actual or potential, from not being generally known to, and not being readily ascertainable by proper means by, other persons who can obtain economic value from its disclosure or use.
2. The information is the subject of efforts to maintain its secrecy that are reasonable under the circumstances.

We request that the following pages not be released

Section	Page #	Topic

IN THE EVENT THE DESIGNATION OF CONFIDENTIALITY OF THIS INFORMATION IS CHALLENGED, THE UNDERSIGNED HEREBY AGREES TO PROVIDE LEGAL COUNSEL OR OTHER NECESSARY ASSISTANCE TO DEFEND THE DESIGNATION OF CONFIDENTIALITY.

Failure to include this form in the bid/proposal response may mean that all information provided as part of the bid/proposal response will be open to examination and copying. The state considers other markings of confidential in the bid/proposal document to be insufficient. The undersigned agrees to hold the state harmless for any damages arising out of the release of any materials unless they are specifically identified above.

Name - Authorized Representative

Signature - Authorized Representative

Company Name

Date



Form A — Affidavit of Compliance Minority Business Enterprise (MBE) / Disabled Veteran-Owned Business (DVB) Provisions

Project Title _____

Project Location _____ Project No. _____

The State of Wisconsin has an active Diversity Business Initiative. The purpose of this initiative, in the interest of fairness and equity, is to encourage increased voluntary expenditure of State construction dollars by prime contractors under subcontracts with MBE / DVB firms. **Please refer to the checklist on page 2 of this form which is provided to assist you in this effort.**

To that end, the bidder's commitment for MBE participation on this project is _____% and DVB participation is _____%.

The State of Wisconsin, Department of Administration, Division of Facilities Development reserves the right to reject and disqualify any bidder who does not include this completed form and who fails to comply with the State's bid requirements as outlined in the bid specifications.

I, the apparent low bidder, acknowledge, understand and agree to comply with my commitment for MBE/DVB participation on this contract including submission of all information required.

I attest that, to the best of my knowledge, all of the above information is true and correct.

Dated (mm/dd/ccyy) _____

Authorized Signature

Printed Name

Title

Company Name

Telephone Number

State of _____

County of _____

On this _____ day of _____, 20____, I confirm that _____
Bidder's Name

came before me and signed the document for the purposes stated.

I witness, and set my hand and official stamp or seal.

Notary Public

County, State of _____

My Commission expires _____, 20____

“Good Faith Effort” To Obtain Minority Business Enterprise / Disabled Veteran-Owned Business Participation

All “Yes” boxes must be checked to ensure that a “Good Faith Effort” has been made to obtain MBE participation.

- Have you checked the State of Wis. Minority Business/Disabled Veteran-Owned Business directories?
<http://www.doa.wi.gov> ☐ Yes ☐ No

- Have you made an early (prior to bidding) contact with the Supplier Diversity Program office to solicit their assistance in getting MBE/DVB participation on the project? Tel. (608) 267-7806; Fax (608) 267-0600; email godwin.amegashie@wisconsin.gov . ☐ Yes ☐ No

- Have you provided MBE/DVB firms adequate project information about plans, specifications and requirements pertaining to their work? ☐ Yes ☐ No

- Have you communicated with any MBE/DVB that performs the type of services needed for the project and was there any follow-up? ☐ Yes ☐ No

- Was MBE/DVB participation advertised (newspaper, radio, etc.) for this project? (You may be asked to submit evidence.) ☐ Yes ☐ No

- Did you contact any MBE/DVB trade associations to assist in locating MBE/DVBs or have you made contact with any MBEs/DVBs that may not yet be certified by the State? (You may be asked to verify.) ☐ Yes ☐ No

- Have you determined if there are other possible opportunities for MBE/DVB participation such as suppliers, haulers, etc. or using a group of MBEs/DVBs jointly? ☐ Yes ☐ No

- Have you considered creating a plan of action with the assistance of the Supplier Diversity Program office to ensure that future contracts can have MBE/DVB participation and meet the construction requirements and goals of the State? (These plans may include mentoring, technical support and other innovative opportunities.) ☐ Yes ☐ No

- Did you negotiate in good faith? (You may be asked to verify.) ☐ Yes ☐ No



REQUEST FOR SUBMITTAL APPROVAL

Project Name _____ DFD Project No. _____
Contractor Name _____ Contractor Phone No. _____
Subcontractor/Supplier Name _____ Specification Section No. _____

- a. This Submittal is made under the provisions of the General Conditions of the Contract Documents. The Contractor makes an express warranty to DFD, by express affirmation, that if installed into or made a part of this project, the work which forms the basis of this Submittal will conform to the design requirements of the Contract Documents.
- b. It is the purpose of this Submittal to describe the goods proposed for use by the Contractor and to demonstrate conformance of that description to the Contract Documents.
- c. At the time of this submission, the Contractor acknowledges awareness that the purpose of this Submittal is to obtain DFD's authorization to use this Work for purposes of Contract Document compliance by the Contractor, and further, that DFD, in doing so, relies upon the skill, judgment and integrity of the Contractor to insure that this submitted Work complies with requirements of the Contract Documents. Contractor hereby acknowledges that it has, through the use of its own resources, found and selected the Work submitted herewith and that the Work submitted is usable for the purpose of being fit and suitable in the final construction under this Contract Documents.
- d. Notwithstanding any provision of this Contract Documents to the contrary, the Contractor hereby notifies DFD that the following features of the Submittal MAY NOT BE IN CONFORMANCE with Contract Document requirements, but nevertheless asks approval thereof. (Contractor shall include brief, specific description of each potential nonconformity. If NONE, Contractor shall so state.)

1.

2.

3.

4.

☐ Check if additional page(s) of potential nonconformity are attached.

Signed _____
Contractor's Authorized Representative _____ Date _____

Note: Contractors are required to copy and use this form as a cover sheet accompanying all submittals, as described in the General Conditions of the Contract Documents. All pages of submittals are to be consecutively numbered, with a front index page listing the total sequence of pages included.



Request for Subcontractor Approval

Contractor Name		Project Title
Street Address	PO Box	Location
City	State	ZIP + 4
Contact Person	Phone Number	DFD Project Manager
Prime Contractor Business Certification <input type="checkbox"/> MBE* <input type="checkbox"/> DVB*		Contract Amount \$

The use of any subcontractors for this project must have prior approval by DFD.

☐ Revised Form _____

☐ **No Subcontractors will be used on this project**

Subcontractor Name / Phone Contact Person / Email	City, State	Type of Work/Service	Estimated Contract Amount	MBE*	DVB*
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>
				<input type="checkbox"/>	<input type="checkbox"/>

* MBE Minority Business Enterprise / DVB Disabled Veteran-Owned Business

☐ Additional Pages Attached

Prepared By:

Signature Date (mm/dd/ccyy)

Printed Name

Title

For DFD Use Only

Screened By Date (mm/dd/ccyy)

- ☐ Subcontractors Approved
☐ Subcontractors Approved Except as Noted

Project Manager Date (mm/dd/ccyy)



PERFORMANCE BOND (100%)

This Surety Bond instrument is hereby executed to guarantee performance of a proposed contract between the herein named Principal and the State, dated _____, 20__, a copy of which is hereto attached and made a part hereof, herein called "Contract," for the construction of

Project Title _____

Project Location _____

Project Number _____ Contract For _____ work.
All, General, HVAC, Roofing, Etc.

KNOW ALL PEOPLE BY THESE PRESENTS That _____
Name of Contractor

of _____ as contractor, herein called "Principal", and _____
City and State Name of Surety

_____ of _____ as Surety, herein called
City and State

"Surety", are held firmly bound to the State of Wisconsin, for the Department of Administration, Division of Facilities Development herein called "the Owner", in the amount of \$_____ for the faithful performance of the Contract as hereinafter set forth. For the payment of which, well and truly to be made, we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the said bounded Principal shall promptly and faithfully perform and fulfill all the undertakings, covenants, terms, conditions, and agreements of the Contract, in all respects, and within the time prescribed in the Contract (or as such time may be extended as provided in the Contract), and shall indemnify and save harmless the Owner, its officers, employees and agents against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered in connection with or arising out of the performance of the Contract by Principal or its subcontractors, and shall in all respects perform the Contract according to law, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

FURTHER, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

FURTHER, that no change, extension of time, alteration or addition to the work to be performed, or amount of, the Contract shall in any way affect Principal's or Surety's obligations on this bond, and Surety does hereby waive notice of any change, extension of time, alterations or additions thereunder.

PROVIDED, FURTHER, that the undersigned states that pursuant to express authority the corporate seal affixed to this instrument is the seal of this surety company, that the seal was affixed and this instrument was executed for and on behalf of this surety company; that authority has not been revoked by this surety company; that this instrument was executed as the free act and deed of this surety company; that the certificate of authority from the Commissioner of Insurance showing authority of this surety company to transact business in the State of Wisconsin has been obtained and will be provided to the Owner upon request; and further, that this surety bond was written through an agent duly licensed as such on the date thereof.

IN WITNESS WHEREOF, this instrument is executed this the _____ day of _____, 20____.

FOR THE PRINCIPAL

By _____
Corporate Secretary Signature
(Seal)

President, Partner or Individual Signature
Witnessed by _____

Witnessed by _____
Two witnesses must attest above signatures.

FOR THE SURETY

By _____
*Corporate Secretary Signature
(Seal)

Attorney in Fact or Authorized Officer

Street or PO Box

City, State and Zip Code

Telephone Number

Email Address
(This email address will be used to notify Surety of Project Start Date)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF _____)

I, _____, a Notary Public of said County and State, do hereby certify that _____
_____, Attorney-in-Fact or authorized officer of _____,
Name of Surety

who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he/she signed, sealed and delivered said instrument for and on behalf of _____, for the uses
and purposes therein set forth. Name of Surety

Given under my hand and notarial seal at my office at _____, _____, in said county,
City State

this _____ day of _____, 20____, A.D.

Notary Public

My commission expires _____

This Performance Bond is

APPROVED

Administrator, Division of Facilities Development



PAYMENT BOND (100%)

This Surety Bond instrument is hereby executed to guarantee payment of certain amounts related to a proposed contract between the herein named Principal and the State, dated _____, 20__, a copy of which is hereto attached and made a part hereof, hereinafter called "Contract," for the construction of

Project Title _____

Project Location _____

Project Number _____ Contract For _____ work.
All, General, HVAC, Roofing, Etc.

KNOW ALL PEOPLE BY THESE PRESENTS That _____
Name of Contractor

of _____ as contractor, herein called "Principal", and _____
City and State Name of Surety

_____ of _____ as Surety, herein called
City and State

"Surety", are held firmly bound to the State of Wisconsin, for the Department of Administration, Division of Facilities Development herein called "the Owner", in the amount of \$_____ for the payment of all claims, costs, charges and other amounts arising in connection with, or related to, the Contract as hereinafter set forth. For the payment of which, well and truly to be made, we bind ourselves, our heirs, successors, executors, and administrators, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION is such that if the said bounded Principal shall promptly make payment pursuant to Section 779.14 of the Wisconsin Statutes to all persons who supply labor and material to said project in the prosecution of the work arising in connection with, or related to, the Contract, and shall pay all other just debts, dues and demands incurred in the performance of the Contract, and shall indemnify and save harmless the Owner, its officers, employees and agents against any direct or indirect damages of every kind and description that shall be suffered or claimed to be suffered as the result of Principal's failure to pay any amounts in connection with, or related to, the Contract, then this obligation shall be void; otherwise it shall be and remain in full force and effect.

FURTHER, labor performed and materials furnished, used or consumed in making the public improvement or performing the public work, include, without limitation because of enumeration, fuel, lumber, building materials, machinery, vehicles, tractors, equipment, fixtures, apparatus, tools, appliances, supplies, electric energy, gasoline, motor oil, lubricating oil, greases, state imposed taxes, premiums for worker's compensation insurance and contributions for unemployment compensation.

FURTHER, that no final settlement between the Owner and the Principal shall abridge the right of any beneficiary hereunder, whose claim may be unsatisfied.

FURTHER, that no change, extension of time, alteration or addition to the work to be performed, or amount of, the Contract shall in any way affect Principal's or Surety's obligations on this bond, and Surety does hereby waive notice of any change, extension of time, alterations or additions thereunder.

PROVIDED, FURTHER, that the undersigned states that pursuant to express authority the corporate seal affixed to this instrument is the seal of this surety company, that the seal was affixed and this instrument was executed for and on behalf of this surety company; that authority has not been revoked by this surety company; that this instrument was executed as the free act and deed of this surety company; that the certificate of authority from the Commissioner of Insurance showing authority of this surety company to transact business in the State of Wisconsin has been obtained and will be provided to the Owner upon request; and further, that this surety bond was written through an agent duly licensed as such on the date thereof.

IN WITNESS WHEREOF, this instrument is executed this the _____ day of _____, 20____.

FOR THE PRINCIPAL

By _____
Corporate Secretary Signature
(Seal)

President, Partner or Individual Signature
Witnessed by _____

Witnessed by _____
Two witnesses must attest above signatures.

FOR THE SURETY

By _____
*Corporate Secretary Signature
(Seal)

Attorney in Fact or Authorized Officer

Street or PO Box

City, State and Zip Code

Telephone Number

Email Address
(This email address will be used to notify Surety of Project Start Date)

ACKNOWLEDGEMENT

STATE OF _____)
) ss
COUNTY OF _____)

I, _____, a Notary Public of said County and State, do hereby certify that _____
_____, Attorney-in-Fact or authorized officer of _____,
Name of Surety

who is personally known to me to be the same person whose name is subscribed to the foregoing instrument, appeared before me this day in person and acknowledged that he/she signed, sealed and delivered said instrument for and on behalf of _____, for the uses
and purposes therein set forth. Name of Surety

Given under my hand and notarial seal at my office at _____, _____, in said county,
City State

this _____ day of _____, 20____, A.D.

Notary Public

My commission expires _____

This Payment Bond is

APPROVED

Administrator, Division of Facilities Development



CONSTRUCTION CONTRACT

Date _____

Project No. _____

Contract No. _____

THIS AGREEMENT is between the State of Wisconsin by its Department of Administration, represented by its Division of Facilities Development, herein called "DFD", and _____
doing business as _____,
of the City of _____ and State of _____ hereinafter called "CONTRACTOR".

WITNESSETH: That for and in consideration of the payments and arrangements hereinafter mentioned, to be directed by DFD, the CONTRACTOR will commence and complete the construction described as follows:

hereinafter called the "Project", for the sum of _____ Dollars (\$ _____ .00)
and all other work in connection therewith, under the terms as stated in the Contract Documents; 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 said Project in accordance with the conditions and prices stated in the Bid Form, Bidding and Contract Requirements, the drawings which include all maps, plats, plans, and other drawings and printed or written explanatory matter thereof, and the technical portion of the specifications therefor; as prepared by _____
herein called the A/E, and as enumerated in the Specification's Table of Contents, all of which are made a part hereof and collectively evidence and constitute the Contract Documents.

The CONTRACTOR hereby agrees to commence work under this Contract on or after a date to be specified in a written "Notice to Proceed" and to complete this work by _____.

DFD agrees to have the CONTRACTOR paid in current funds for the performance of the contract subject to additions and deductions, as provided in the General Conditions of the Contract, and to authorize payments on account thereof as provided in the Article entitled, "Payments to Contractor" of the General Conditions.

DFD has the delegated power and duty pursuant to Sec. 16.85(l), to act on all matters and for all purposes under this Contract; including additions and modifications therein incorporated.

IN WITNESS WHEREOF, DFD and the CONTRACTOR have executed this contract.

(Seal)	CONTRACTOR	<i>Contractor Firm Name</i>	
		<i>Address</i>	
		<i>State, City Zip</i>	
		By _____	_____
			Signature Date
		_____ Printed Name	
_____	Secretary of Corp.	_____ Title	
_____	Witness	_____ Employer Number (FEIN) or Social Security Number	

This Contract is not valid or effectual for any purpose until executed by all parties, and no work is authorized until the CONTRACTOR has been given Notice to Proceed by DFD.

APPROVED (if Contract is over \$150,000)

Administrator, Division of Facilities Development Date

Governor of Wisconsin Date

Note: If Contractor is a corporation, Secretary should attest. In accordance with current Federal IRS Regulations, all service provider entities are required to submit either their Employer Number or Social Security Number in order to receive payment for services rendered. The State of Wisconsin requests Tax ID numbers for all entities providing either goods or services, to facilitate approved payments to vendors in accordance with certain State Statutes and/or Administrative Rules.



GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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1. CONTRACT ADMINISTRATION

- A. The intention of the Contract Documents is to include all labor, materials, and equipment necessary for the completion of the Work in accordance with the standard of quality established by the Contract Documents and within the allowable time period specified.
- B. The General Prime Contractor shall attend a Pre-Construction Meeting, which will be scheduled by DFD. DFD shall designate DFD'S "PROJECT REPRESENTATIVE" at the Project Pre-Construction Meeting. This person is delegated authority to act on behalf of DFD, unless the Contract Documents specifically identify another party responsible for DFD Work activities. It is the intent of DFD to provide, to the extent possible, a single point of contact and communication for the General Prime Contractor to facilitate efficient, timely, and cost cost-effective completion of the Work.
- C. The General Prime Contractor shall employ, and specifically assign to the Project, a construction superintendent or foreman, experienced in Work of the character required by the Contract Documents. This person shall be delegated authority to act on behalf of the General Prime Contractor, and shall be, to the extent possible, a single point of contact and communication for DFD and all Subcontractors to facilitate efficient, timely, and cost effective completion of the Work.
- D. DFD will periodically schedule progress meetings. At each such progress meeting, the parties will discuss the above-mentioned items, cooperate with others to assure successful completion of the Work, and help to quickly resolve problems which arise.

2. DEFINITIONS

THE FOLLOWING TERMS AS USED IN THE CONTRACT DOCUMENTS ARE DEFINED AS FOLLOWS:

- A. "ADDENDUM" means a written or graphic instruction which clarifies, amends, or interprets the Bidding Documents.
- B. "A/E" and "ARCHITECT/ENGINEER" means a person, partnership, corporation, or other business organization under Contract with DFD to prepare drawings and specifications, to advise DFD, to provide DFD with design services, and in certain cases, to perform inspection and review for the sole benefit of DFD during construction.
- C. "BIDDING AND CONTRACT REQUIREMENTS" means all items as described in Division 1 including "Bidding Requirements," "Contract Forms," "General Conditions," "Supplementary General Conditions," "General Requirements."
- D. "CONTRACT DOCUMENTS" means collectively, all documents listed in the Table of Contents of this Specification, the Drawings, Addenda, Change Orders, Notice to Proceed, and any changes in the Work approved by DFD and General Prime Contractor before the execution of the Contract.
- E. "CONTRACTOR" means any individual, firm, corporation, or other non-governmental organization which, in cooperation with other Contractors and persons, performs Work required by the Contract Documents. "Contractor" is all contractors working on a project regardless of contractual relationship. This includes the General Prime Contractor, MEP Subcontractors, Non-MEP Subcontractors, and all Subcontractors, regardless of tier of subcontract. The term "Contractor" does not include the State or the A/E.
- F. "DAMAGES FOR UNTIMELY PERFORMANCE" means a predetermined monetary amount to be paid to the State, based on anticipated real costs which the State will incur, due to the General Prime Contractor's failure to complete the Work within the allowable time identified in the Contract Documents.
- G. "DELAY" means an event that causes an increase in the duration of the Project, or that changes the sequence of the Work or individual Work activities, thereby preventing completion of the Project within the time period specified in the Contract Documents.
- H. "DFD" means Division of Facilities Development. (See "OWNER").

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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- I. "DFD'S PROJECT REPRESENTATIVE" means the person or persons' delegated authority to act on behalf of DFD. Such person or persons may be the employees of DFD, or Consultants hired to perform the activities and responsibilities of DFD. "DFD's Project Representative" will be designated in writing at the Pre-Construction Meeting. DFD reserves the right to change its designated Project Representative at any stage of the Work, upon prior written notice to the General Prime Contractor.
- J. "DRAWINGS" means the graphic and pictorial portions of the Contract Documents, showing the design, type of construction, location, dimension and character of the Work to be provided by the General Prime Contractor, generally including, but not limited to plans, elevations, sections, details, schedules, diagrams, notes and portions of Specification.
- K. "EQUALS" means material, equipment or methods proposed and warranted by the General Prime Contractor as being equivalent to essential attributes of the material, equipment or method specified in the Contract Documents, and approved by DFD.
- L. "EXTENDED AND UNABSORBED OVERHEAD COSTS" means extended and unabsorbed overhead costs and related damages calculated pursuant to the original and modified Eichleay formulas adopted and recognized by the Armed Services Board of Contract Appeals and the United States Court of Appeals for the Federal Circuit.
- M. "FIELD ORDER" means changes in the Work made by DFD through use of direction, instruction, interpretation, determination, or any other mode or manner.
- N. "GENERAL PRIME CONTRACTOR" means the individual, firm, corporation, or other non-governmental organization that enters into a contract with the state to perform all work as required by the Contract Documents and enters into contracts with subcontractors including MEP Subcontractors identified by DFD. The term "General Prime Contractor" does not include the State or the A/E.
- O. "MECHANICAL, ELECTRICAL, OR PLUMBING SUBCONTRACTOR" ("MEP SUBCONTRACTOR") is any individual, firm, corporation, or other non-governmental organization that performs mechanical (Heating, Ventilating, and Air Conditioning), electrical, plumbing, or fire protection (fire suppression) work for the Project, and is identified by DFD as the successful MEP Subcontractor to enter into a contract with the General Prime Contractor to perform their division of work described in the contract documents.
- P. "NON-MEP SUBCONTRACTOR" means any subcontractor to a General Prime Contractor in divisions of work other than mechanical, electrical, plumbing, and fire protection. "Non-MEP Subcontractor" includes suppliers and installers to the General Prime Contractor.
- Q. "SUBCONTRACTOR" means all subcontractors on a project. "Subcontractor" includes MEP Subcontractors, subcontractors to the MEP Subcontractors, and Non-MEP Subcontractors.
- R. "NOTICE TO PROCEED" means a written notice provided by DFD to the General Prime Contractor authorizing the General Prime Contractor to proceed with the Work and establishing the date for completion of the Work.
- S. "OWNER" means the State of Wisconsin, Department of Administration, Division of Facilities Development, herein termed "DFD." DFD exercises the powers and duties prescribed by Wis. Stats. §§ 16.85 and 16.855.
- T. "PROJECT" means the total and complete construction of the Work required by the Contract Documents.
- U. "PROJECT SCHEDULE" means a graphic and written analysis of activity duration and sequencing, which is required for successful completion of the Project within the time period identified in the Contract Documents.
- V. "SHOP DRAWINGS" means drawings, diagrams, illustrations, schedules, performance charts, brochures, catalog data, and other data or samples specially prepared or provided by the General Prime Contractor, a Subcontractor including MEP Subcontractor Non-MEP Subcontractor, or Material Supplier to illustrate some portion of the Work. The terms "SHOP DRAWINGS" and "SUBMITTALS" may be used interchangeably in the Contract Documents.

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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- W. "SPECIFICATIONS" means the Volume assembled for the Work which typically includes the Bidding and Contract Requirements, forms, and Technical Sections.
- X. "STATE" means the State of Wisconsin and its officers, employees, agents, divisions, bureaus, commissions, boards, authorities, and universities, colleges, and other institutions of higher learning.
- Y. "SUBMITTALS" means the terms "SUBMITTALS" and "SHOP DRAWINGS" may be used interchangeably in the Contract Documents. Refer to the definition of "SHOP DRAWINGS" contained herein.
- Z. "SUBSTANTIAL COMPLETION" means the stage in the progress of the Work when DFD determines that the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Project, or designated portion thereof, can be occupied and used for its intended purpose.
- AA. "SUBSTITUTIONS" means the use of material or equipment not specified in the Contract Documents, but that the General Prime Contractor proposes and warrants as suitable for the use intended and conforms to all other physical, functional, and performance requirements of the Contract Documents.
- BB. "SURETY" means a person or entity licensed to do business in the State of Wisconsin, who provides separate Performance Bonds and Payment Bonds to a General Prime Contractor to indemnify the State against all damages suffered by failure of the General Prime Contractor to perform the Work and to pay all lawful claims of Subcontractors, Material Suppliers, and laborers.
- CC. "WORK" means the plant, labor, materials, service, supplies, equipment, and other facilities and items comprising the whole of the Contract Documents.

3. CONTRACT DOCUMENTS

- A. The Contract Documents as defined in Article 2 shall form a part of this Contract. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all.
- B. The technical provisions of this Contract are set forth in the Specifications. The Specifications are complemented by the "Drawings" which may also be referred to as the "Plans." The Specifications and Drawings for this Contract are complementary and are to be so interpreted, unless that interpretation is so clearly erroneous as to defy the intent of the parties.
- C. The General Prime Contractor's bid price shall include complementary interpretation, and the performance of all Work which;
 - 1. in accordance with industry standards, customary practice, or by reasonable inference are details of Work that are necessary as part of the construction, operation, and coordination and interface of the Work;
 - 2. would necessarily be readily apparent to one skilled in the trades; or,
 - 3. a competent and experienced contractor would recognize as part of its responsibility.
- D. The failure of the General Prime Contractor to include in its bid the Work as defined in Paragraph 3.B. shall not relieve the General Prime Contractor from performing such Work and it shall be performed as if fully and correctly set forth and described in the Drawings and Specifications.
- E. Periodically, DFD may provide the General Prime Contractor additional instructions and drawings necessary to perform the Work. DFD shall make a good faith effort to coordinate such instructions and drawings with the Contract Documents, preparing them so they can be reasonably interpreted as a part thereof.

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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4. CONFLICTING CONDITIONS

- A. DFD shall take all reasonable steps to assure that the Contract Documents are as accurate as possible, and provide information which, in the opinion of DFD, is necessary in preparing bids and constructing the Project. However, it is mutually understood that discrepancies or conflicts in the Contract Documents may be identified, in which case:
 - 1. Amendments and addenda take precedence over the Specifications;
 - 2. The Specifications take precedence over the Drawings;
 - 3. Stated dimensions take precedence over scaled dimensions;
 - 4. Large-scale detail drawings take precedence over small-scale drawings;
 - 5. Schedules take precedence over other data on the plans.
- B. Notwithstanding the above order of precedence, any clearly stated requirement of duties of the General Prime Contractor shall control over any rule of contract interpretation which might otherwise place those duties in conflict with other provisions of the Contract, and such duties shall be included in the General Prime Contractor's bid.
- C. The failure to inquire about any ambiguity in any provision of the Contract Documents which would be reasonably apparent to any bidder knowledgeable and skilled in the Work required by the bid shall grant DFD the right to interpret that ambiguity.
- D. Where the terms "A/E," "Architect/Engineer," "Architect," or "Engineer" are used in technical Sections of the Specifications, the General Prime Contractor shall understand that actions indicated to be accomplished by such named parties are actions which are solely as the professional technical advisor and consultant to DFD and such actions thus require final approval by DFD.
- E. In the event of any conflict between the terms of this Contract and any provision of law, the provision of law shall control and the parties hereto shall not be free to Contract contrary to law.

5. CONTRACT SECURITY

- A. The General Prime Contractor shall furnish a Performance Bond in an amount equal to one hundred percent (100%) of the Contract price, and a Payment Bond in an amount equal to one hundred percent (100%) of the Contract price, as security for the faithful performance of this Contract, payment of all persons performing labor or furnishing materials for the Project, and payment of all other debts incurred in the performance of the Work.
- B. The Performance Bond and Payment Bond Forms that the General Prime Contractor is required to execute are bound into the Specifications. Before the Construction Contract can be executed, the Performance Bond and Payment Bond must be delivered to and approved by DFD. Such approval will be predicated on prior satisfactory performance of a Surety.

6. SAFETY AND ACCIDENT PREVENTION

- A. The General Prime Contractor shall provide and maintain a Work environment and procedures which will:
 - 1. Safeguard the public and State personnel and agents, property, material, supplies, and equipment exposed to General Prime Contractor and all Subcontractors including, MEP Subcontractors and Non-MEP Subcontractors operations and activities;
 - 2. Avoid interruptions of user agency operations and delays in Contract completion dates; and,
 - 3. Control costs in the performance of this Contract.
- B. For these purposes, the General Prime Contractor shall:

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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1. Provide appropriate safety barricades, signs, and signal lights;
 2. Comply with any safety requirement published by any governmental authority with jurisdiction over the site, including Federal, State, or local jurisdictions;
 3. Ensure that any additional measures which are reasonably necessary for the purposes stated are taken.
- C. The General Prime Contractor shall strictly comply with, and bear full responsibility for, any safety procedure set forth in the Contract Documents. In the absence of such compliance, the General Prime Contractor shall be responsible for indemnification of the State for any cost or expense, including legal fees. At the discretion of DFD, the General Prime Contractor may also be subject to termination of the Contract for default.
- D. If DFD becomes aware of any noncompliance by the General Prime Contractor or any Subcontractor, with the safety conditions of this Contract or of any condition caused by the General Prime Contractor or any Subcontractor, which poses a serious or imminent danger to the health or safety of the public or to State personnel, DFD's Project Representative shall notify the General Prime Contractor orally, with written confirmation, and direct immediate initiation of corrective action. This Notice, when given to the General Prime Contractor or the General Prime Contractor's Representative at the Work site, shall be deemed sufficient notice of noncompliance and that corrective action is required. After receiving the Notice, the General Prime Contractor shall immediately take corrective action. If the General Prime Contractor fails or refuses to promptly take corrective action, DFD may issue an order stopping all or part of the Work until satisfactory corrective action has been taken. The General Prime Contractor shall not be entitled to an equitable adjustment of the Contract price or an extension of the performance schedule by reason of the issuance of any stop Work order under this Article 6.
- E. The General Prime Contractor shall cause this Article 6, including this Paragraph E., with appropriate changes in paragraph designation, to be incorporated in all MEP Subcontracts and Non-MEP Subcontracts, regardless of tier.

7. PROTECTION OF WORK AND PROPERTY

- A. The General Prime Contractor shall at all times safely guard State property and adjacent property from injury, loss, release of hazardous or toxic materials, or damage in connection with the Contract Documents or the performance of the Work hereunder. The General Prime Contractor shall replace or make good any damage, loss, or injury caused as a result of failure to comply with Contract Documents. This contract provision shall be incorporated into the contracts between the General Prime Contractor, MEP Subcontractors, and Non-MEP Subcontractor.
- B. In case of an emergency which threatens loss or injury of property, or safety of life, the General Prime Contractor will be allowed to act, without previous instructions from DFD, in a diligent manner. The General Prime Contractor shall notify DFD immediately thereafter. Any claim for compensation by the General Prime Contractor due to such extra Work shall be promptly submitted to DFD for approval as provided for in Article 18 of the General Conditions.
- C. In the event of temporary suspension of Work, or during inclement weather, or whenever DFD shall direct, the General Prime Contractor shall carefully protect all Work and materials against damage or injury from the weather. This contract provision shall be incorporated into the contracts between the General Prime Contractor, MEP Subcontractors, and Non-MEP Subcontractors. If, in the opinion of DFD, any Work or materials have been damaged or injured by reason of failure on the part of the General Prime Contractor Subcontractors including MEP Subcontractor or Non-MEP Subcontractors to protect the Work, such materials shall be removed and replaced at the expense of the General Prime Contractor.
- D. The General Prime Contractor shall promptly, and without prior demand by DFD, remedy and repair any damage caused by the General Prime Contractor and all Subcontractors, suppliers, and vendors to completed or partially completed construction or to property of DFD or other Subcontractors

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

(REV 1/2014)

8. PERMITS, REGULATIONS, UTILITIES, AND TAXES

- A. The General Prime Contractor shall procure all permits, licenses, and approvals necessary for the execution of this Contract and performance of the Work, and shall provide evidence of such permits, licenses, and approvals at the Pre-Construction Meeting or before commencement of the Work.
- B. Where Contract Documents require abatement of asbestos containing materials, prior written Notice to the State of Wisconsin, Department of Natural Resources is required. The General Prime Contractor shall provide evidence of such Notice prior to commencement of the Work.
- C. Work under this Contract shall be in compliance with all applicable state laws, codes, and regulations relating to environmental quality and safety, the performance of the Work, the protection of adjacent property, and the maintenance of passageways, guard fences, or other protective facilities. Such Work shall not be subject to the ordinances or regulations (except land use zoning) of the municipality in which the construction takes place, including ordinances or regulations relating to materials used, permits, supervision of construction or installation, payment of permit fees, or other restrictions of any nature whatsoever. DFD shall be notified by the General Prime Contractor of any Notices of noncompliance or violation associated with Work required by the Contract Documents.
- D. The General Prime Contractor shall pay all Sales, Consumer, Use, and other similar taxes required by law assessed to or arising out of the construction of the Project.
- E. If the General Prime Contractor believes that any of the Work required by the Contract Documents is in violation of any State law, code, rule, or regulation, the General Prime Contractor shall promptly notify DFD. Upon such notification, DFD will determine whether corrective action is required and make such changes, if any, at no additional cost to the General Prime Contractor provided such violation was not caused by the General Prime Contractor or a Subcontractor including, a MEP Subcontractors, or a Non-MEP Subcontractors.
- F. Charges for water, sewer, and other utility connections made by municipalities will be paid by the State. Payment for use of such services and utilities before Substantial Completion shall be in accordance with provisions of the General Requirements of the Contract.

9. STATE RESPONSIBILITY FOR THE SITE

- A. Prior to start of construction, the State shall furnish all land and rights-of-way necessary for the carrying out and completion of the Work to be performed under this Contract.
- B. DFD will furnish to the General Prime Contractor site, topography, and property surveys which DFD reasonably believes necessary for the execution of the Work.
- C. DFD, upon receipt of the Notice set forth in Paragraph 10.E., shall promptly investigate the site conditions reported by the General Prime Contractor to determine whether the conditions discovered differ materially from those indicated in the Contract Documents, are of an unknown and unusual nature which could not have been discovered by a reasonable site investigation by the General Prime Contractor as required by the Contract Documents, or which differ materially from those ordinarily encountered and generally recognized as being inherent in the Work of the character required by the Contract Documents at the site where Work is to be performed.
- D. DFD shall act on any General Prime Contractor Notice, as described in Paragraph 10.E. of the General Conditions, as soon as practicable, but in no case later than ten (10) working days after the receipt of such Notice. If DFD determines that the conditions reported by the General Prime Contractor differ materially from those indicated in the Contract Documents, or are of an unknown and unusual nature which could not have been discovered during a reasonable site investigation by the General Prime Contractor, then to the extent established by the General Prime Contractor and approved by DFD, DFD shall authorize an increase or decrease in the cost or time required for performing any part of the Work under this Contract.
- E. No request by the General Prime Contractor for an equitable adjustment to the Contract under this Article 9 shall be allowed, unless the General Prime Contractor gives proper Notice, which is a CONDITION PRECEDENT to any liability on the part of the State.

GENERAL CONDITIONS OF THE GENERAL PRIME CONTRACTOR CONTRACT

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- F. In no event shall any claim by the General Prime Contractor for equitable adjustment to the Contract for differing site conditions be allowed if presented after final payment under this Contract is made.

10. GENERAL PRIME CONTRACTOR RESPONSIBILITY FOR CONDITIONS AT THE SITE

- A. The General Prime Contractor is responsible for and hereby acknowledges that it has taken the steps reasonably necessary to prepare a bid which includes the costs for Work, the requirement for which would reasonably be known to a competent contractor, in overcoming normal subsurface conditions at the site where the Work is to be performed and in order to accomplish the Work described in the Contract Documents. Additionally, the General Prime Contractor certifies that it has investigated the site and satisfied itself as to the general and local conditions which affect the Work or its cost, including, but not limited to:
 - 1. Conditions bearing upon transportation, disposal, handling, and storage of materials;
 - 2. The availability of labor, water, electric power, and roads or access;
 - 3. Uncertainties of weather, river stages, tides, or similar physical conditions at the site;
 - 4. The conformations and conditions of the ground; and
 - 5. The character of facilities and equipment as represented by the Contract Documents.
- B. The General Prime Contractor also acknowledges that it has satisfied itself as to the character, quality and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is reasonably ascertainable from an inspection of the site, and information included in the Contract Documents.
- C. Any failure of the General Prime Contractor to take the actions described and acknowledged in this Article 10 will not relieve the General Prime Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the Work, or for proceeding to successfully perform the Work without additional expense to the State.
- D. The State assumes no responsibility for any erroneous conclusions or interpretations made by the General Prime Contractor based on the information made available by DFD. If an analysis of such data is only meaningful to a person skilled in the geotechnical sciences, then the General Prime Contractor is responsible for, and certifies that it has obtained, such an analysis or has otherwise decided that the data is understandable by it, as presented. The State assumes no responsibility for any understanding reached or representation made concerning conditions which can affect the Work by any of its officers, representatives, or agents before the execution of this Contract, unless that understanding or representation is expressly stated in the Contract Documents.
- E. If the General Prime Contractor discovers, in the performance of the Work, a subsurface or latent physical condition at the site, including but not limited to possible environmental contamination or hazardous substances, which it did not discover pursuant to this Article 10, then the General Prime Contractor shall promptly, and before the condition is disturbed, give written Notice to DFD. Such Notice shall be subject to the procedures and limitations set forth in Article 20 hereof, entitled "Notice Requirements. The General Prime Contractor shall disclose in such Notice all the facts and circumstances then known to it, including the impact of such condition on the price, time, or quality of the Work remaining to be done.

11. SUBCONTRACTS

- A. The General Prime Contractor must subcontract with all successful MEP Subcontractors identified by DFD. The General Prime Contractor may enter into subcontracts for work other than MEP Subcontractor work, if subcontractors are approved by DFD through the Request for Subcontractor Approval Form. However, the election to subcontract Work shall not relieve the General Prime Contractor from responsibility or liability which it has assumed under this Contract. The General Prime Contractor shall remain liable to the same extent that its liability would attach, as if the Work had been performed by the General Prime Contractor's own employees. If the Specifications require or otherwise designate only one Subcontractor or source of supply for Work required under

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the Contract Documents, the General Prime Contractor's failure to acquire suitable Contract arrangements with such Subcontractor or source of supply shall not excuse the General Prime Contractor from full responsibility and liability for any failure or default of such source of supply.

- B. All Non-MEP Subcontractors are subject to DFD approval. DFD may request, or the General Prime Contractor may provide, any of the following information to substantiate the proposed Subcontractors' qualifications or ability to perform the Work. DFD shall consider such information when reviewing the qualifications of proposed Subcontractors to determine whether such qualifications serve the best interests of the Project.
 - 1. The amount of experience completing similar Work to that required by the Contract Documents;
 - 2. The quality of Work the proposed Subcontractor has provided on past Projects;
 - 3. The extent of available staffing and financial resources of the proposed Subcontractor;
 - 4. The General Prime Contractor's intended method of monitoring the proposed Subcontractor's Work;
 - 5. The level of supervision of the Subcontractor's Work which the General Prime Contractor will provide;
 - 6. Any other information regarding the proposed Subcontractor's ability to complete the Work.
- C. Bidders shall submit a completed Request for Subcontractor Approval Form with their bid or within seven days of the general prime contractor bid opening. Submission of a completed Request for Subcontractor Approval Form is an element of responsiveness. Failure to submit this completed form within the above time limits will be considered unresponsiveness and may result in contract award to the next apparent low bidder. When no Subcontractors are anticipated, the General Prime Contractor shall give DFD notice of this fact on the Form within the time limits noted above.
- D. The General Prime Contractor shall not replace any DFD identified or approved Subcontractor or material supplier without written approval of DFD. Any General Prime Contractor request for replacement of a Subcontractor previously approved by DFD shall include the reason(s) for such replacement and all documentation necessary to substantiate such change.
- E. The General Prime Contractor agrees, to the extent practicable, to maintain a list of all Subcontractors and suppliers performing labor or furnishing materials for the project.
- F. The General Prime Contractor shall be fully responsible for all acts and omissions of all Subcontractors and shall be responsible for scheduling and coordinating the Work of all Subcontractors, including MEP Subcontractors, Non-MEP Subcontractors and material suppliers.
- G. Nothing herein shall be construed to create any express or implied Contractual relationship between DFD and any of the General Prime Contractor's MEP Subcontractors, Non-MEP Subcontractors, suppliers or vendors.
- H. Notwithstanding Paragraphs 11.C. and 11.D., the General Prime Contractor shall insert the following mandatory provisions in all subcontracts with Subcontractors s:
 - 1. All provisions of this Article 11
 - 2. Article 26 - Payments to General Prime Contractor
 - 3. Article 27 - Payments by General Prime Contractor
 - 4. Article 32 - Nondiscrimination/Affirmative Action
 - 5. Article 33 - Minimum Wages

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The General Prime Contractor shall include the mandatory provisions in Article 12 MEP SUBCONTRACTORS in all MEP subcontracts.

12. MECHANICAL, ELECTRICAL, PLUMBING, AND FIRE PROTECTION (MEP) SUBCONTRACTORS

- A. The General Prime Contractor will offer a subcontract to the successful MEP Subcontractors identified by DFD and included in the General Prime Contractor's bid. This subcontract between a General Prime Contractor and a MEP Subcontractor must include a scope of work clause identical to the scope of work clause included in the Bid Documents and the contract between the General Prime Contractor and the state (see item D below). A General Prime Contractor and an MEP Subcontractor may not enter any agreement in connection with bids submitted that would alter or affect the scope or price of the contracts entered into. This prohibition does not apply to DFD change orders that result in changes to the plans or specifications, or to back charges allowed by the contract. The General Prime Contractor shall base its project schedule on the schedule in the specifications or bid instructions unless otherwise agreed to by the MEP Subcontractor.

- B. **Pursuant to Wis. Stat. §16.855 (14m)(a), The contract entered into between the General Prime Contractor and an MEP Subcontractor must contain all of the following clauses:**

Prompt Payment. (general prime contractor) shall pay (mechanical, electrical, or plumbing subcontractor) in accordance with section 16.855(19)(b), Wisconsin stats, for work that has been satisfactorily completed and properly invoiced by (mechanical, electrical, or plumbing subcontractor). A payment is timely if it is mailed, delivered, or transferred to (mechanical, electrical, or plumbing subcontractor) by the deadline under section 16.855(19)(b), Wisconsin stats.

If (mechanical, electrical, or plumbing subcontractor) is not paid by the deadline in this contract, (general prime contractor) shall pay interest on the balance due from the eighth day after the (general prime contractor) receives payment from the Department of Administration for the work for which payment is due and owing to (mechanical, electrical, or plumbing subcontractor), at the rate specified in section 71.82, Wisconsin stats., compounded monthly. A (mechanical, electrical, or plumbing subcontractor) that receives payment as provided under this contract and that subcontracts with another entity shall pay those subcontractors, and be liable for interest on late payments to those subcontractors, in the same manner as the (general prime contractor) is required to pay the (mechanical, electrical, or plumbing subcontractor) under this contract.

Insurance and Bonds. (mechanical, electrical, or plumbing subcontractor) shall not commence work under this contract until it has obtained all necessary insurance required of (mechanical, electrical, or plumbing subcontractor) in the contract between the (general prime contractor) and the Department of Administration. (mechanical, electrical, or plumbing subcontractor) shall provide a separate 100 percent performance bond and a separate 100 percent payment bond to the benefit of the (general prime contractor) as the sole named obligee. Original bonds shall be given to the (general prime contractor) and a copy shall be given to the Department of Administration no later than 10 days after execution of this contract.

Indemnification. To the fullest extent permitted by law, (mechanical, electrical, or plumbing subcontractor) shall defend, indemnify, and hold harmless (general prime contractor) and its officers, directors, agents, and any others whom (general prime contractor) is required to indemnify under its contract with the department, and the employees of any of them, from and against claims, damages, fines, penalties, losses, and expenses, including but not limited to attorney fees, arising in any way out of or resulting from the performance of the work under this contract, but only to the extent such claim, damage, fine, penalty, loss, or expense: (1) is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of property, including but not limited to loss of use resulting therefrom and is caused by the negligence, or acts or omissions, of (mechanical, electrical, or plumbing subcontractor), its subcontractors, any of their employees, and anyone directly or indirectly employed by them or anyone for whose acts they may be liable, or (2) as related to such claims, damages, fines, penalties, losses, and expense of or against (general prime contractor), results from or arises out of the negligence of the (general prime contractor) or other fault in providing general supervision or oversight of the work of (mechanical, electrical, or plumbing subcontractor) or (3) as related to claims, damages, fines, penalties, losses, and expense against the Department of Administration, arises out of the department's status as owner of the project or project site.

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In addition (mechanical, electrical, or plumbing subcontractor) shall defend, indemnify, and hold harmless (general prime contractor) and its officers, directors, agents, and any others (general prime contractor) is required to indemnify under its contract with the department, and the employees of any of them, from any liability, including liability resulting from a violation of any applicable safe place act, that (general prime contractor) or the state incurs to any employee of (mechanical, electrical, or plumbing subcontractor) or any third party where the liability arises from a derivative claim from said employee, when the liability arises out of the failure of the (general prime contractor) or the state to properly supervise, inspect, or approve the work or work area of (mechanical, electrical, or plumbing subcontractor), but only to the extent that the liability arises out of the acts or omissions of (mechanical, electrical, or plumbing subcontractor), its employees, or anyone for whom (mechanical, electrical, or plumbing subcontractor) may be liable, or from (mechanical, electrical, or plumbing subcontractor's) breach of its contractual responsibilities or arises out of (general prime contractor's) negligence or other fault in providing general supervision or oversight of (mechanical, electrical, or plumbing subcontractor's) work or arises out of the Department of Administration's status as owner of the project or project site. In claims against (general prime contractor) or the state by an employee of (mechanical, electrical, or plumbing subcontractor) or its subcontractors or anyone for whose acts (mechanical, electrical, or plumbing subcontractor) may be liable, the indemnification obligation of this paragraph is not limited by a limitation on amount or type of damage, compensation, or other benefits payable by or for the (mechanical, electrical, or plumbing subcontractor) subcontractors under workers compensation act.

Except as identified above, the obligations of (mechanical, electrical, or plumbing subcontractor) under this indemnification do not extend to the liability of (general prime contractor) and its agents or employees arising out of (1) preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs, or specifications; (2) the giving of or failure to give directions or instructions by the (general prime contractor) or the Department of Administration or their agents or employees provided the giving or failure to give is the cause of the injury or damage; or (3) the acts or omissions of other subcontractors.

Retainage. Retainage shall occur and be in amounts and on a schedule equal to that in the contract between (general prime contractor) and the Department of Administration.

- C. Pursuant to Wis. Stat. § 16.855(19)(b), Retainage between General Prime Contractor and MEP Subcontractors is governed as follows:

As the work progresses under any MEP subcontract for construction of a project, the general prime contractor shall, upon request of a subcontractor, pay to the subcontractor an amount equal to the proportionate value of the subcontractor's work properly completed, less retainage. The retainage shall be an amount equal to not more than 5 percent of the subcontractor's work completed until 50 percent of the subcontractor's work has been completed. At 50 percent completion, no additional amounts may be retained, and partial payments shall be made in full to the subcontractor unless the department certifies that the subcontractor's work is not proceeding satisfactorily. At 50 percent completion or any time thereafter when the progress of the subcontractor's work is not satisfactory, additional amounts may be retained but the total retainage may not be more than 10 percent of the value of the work completed. Upon substantial completion of the subcontractor's work, any amount retained shall be paid to the subcontractor, less the value of any required corrective work or uncompleted work. All payments the general prime contractor makes under this paragraph shall be within 7 calendar days after the date on which the general prime contractor receives payment from the department.

- D. Pursuant to Wis. Stat. § 16.855(14m)(b), the MEP Subcontracts must include a scope of work clause that is identical to the scope of work clause on which the MEP Subcontractor bid. The following Scope of Work language shall be included in the contracts between the General Prime Contractor and MEP Subcontractors:

Scope of Work. The MEP Subcontractor scope of work is identical to the General Prime Contractor scope of work included in these bidding and contract documents. By submitting and signing a bid, all bidders have examined all of the Bidding Documents listed in the Table of Contents of the project specifications. The successful bidders will be required to do all work which is shown on the drawings, mentioned in the specifications, or reasonably implied as necessary to complete the division of work bid for this project.

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13. SCHEDULING AND COORDINATION OF WORK

- A. The General Prime Contractor has the full and complete responsibility for the accomplishment of all Work within the specified time indicated in the Contract Documents, except where the Contract Documents explicitly and specifically place a limited duty for completion on the State.
- B. DFD and the General Prime Contractor hereby commit themselves to good faith negotiation, coordination, and cooperation to assure the timely completion of the Project. By accepting this Contract, the General Prime Contractor agrees that scheduling, coordination, and monitoring activity for All Work will be placed under the direct control and supervision of a person experienced in construction scheduling, means and methods. If such experience and knowledge must be obtained by Contracting with a separate scheduling consultant, the entire cost of such consultant shall be borne by the General Prime Contractor. Additionally, the General Prime Contractor fully agrees to cooperate in all respects with all Subcontractors, including MEP Subcontractors, Non-MEP Subcontractors, and suppliers to provide all data required, and shall coordinate the activities of its own Work forces and the Work forces of the Subcontractors, in such manner and at such time as to not cause a delay in the Project.
- C. The General Prime Contractor and the State shall be given the opportunity to schedule its own Work as conveniently as is consistent with the overall needs of the Project Schedule.
- D. The General Prime Contractor shall afford the State and any other parties performing Work on the Project, reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities at the site.
- E. The Project Schedule shall incorporate all activities, events, and milestones required for successful Project completion within the allowable time for completion specified in the Contract Documents. The General Prime Contractor shall prepare a breakdown of all Work activities or events, whether the activities are to be performed by the General Prime Contractor's own forces, those of Subcontractors, including MEP Subcontractors and Non-MEP Subcontractors, or the State, indicating the proposed duration and sequencing of such activities for successful completion of the Project within the allowable time specified in the Contract Documents. The General Prime Contractor shall also identify whether any Work activity or event is dependent on the Work of its own forces or with those of the State. The failure to list any activity or to perform any other duty required by or incident to that required by these General Conditions shall not be the basis of a claim for adjustment of any provision of this Contract, or of any other type of claim whatsoever.
- F. The General Prime Contractor shall, within fourteen (14) calendar days from the Notice to Proceed, develop and publish a Project Schedule for the first sixty (60) calendar days of the Project. The completed Project Schedule, for all Work activities through Project completion, shall be developed and published within this sixty (60) day period. **Pursuant to 16.855 (14m)(d), the General Prime Contractor must base this Project Schedule on the schedule that the MEP Subcontractors and General Prime Contractors bid on (in the specifications or bid instructions), unless otherwise agreed to by the MEP Subcontractor.** No provision of this Contract shall be construed to relieve the General Prime Contractor of this requirement. Monthly updates of the schedule shall be developed, analyzed and published and each subsequent update shall include a breakdown of major activities to be performed by each separate Contractor or entity, and all activities required for development, monitoring, and updating the Project Schedule.
- G. If the General Prime Contractor's Work depends upon construction or operations by the State, the General Prime Contractor shall, prior to proceeding with that portion of the Work, promptly give Notice to DFD of any apparent deficiencies or defects in such other construction that would render it unsuitable for such proper execution and results. Failure of the General Prime Contractor to so report shall constitute an acknowledgment that the State's completed or partially completed construction is fit and proper to receive the General Prime Contractor's Work, except as to defects not then reasonably discoverable.
- H. The General Prime Contractor shall identify forthwith any critical event which will require DFD to act or to refrain from acting, or critical time periods within which the State must complete activities or Work for which DFD is responsible under the Contract. Timely Notice of any such identified event or time period shall be given to DFD. The giving of such Notice is a CONDITION PRECEDENT to the creation of any duty of DFD to take any action or to refrain from taking any action. The failure of the General Prime Contractor to give such Notice forthwith shall

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thereafter bar and preclude any claim by the General Prime Contractor for adjustment of any Contract provision or claim predicated on the breach of any obligation by DFD.

- I. Where any Work activity required for completion of the Project, is completed in less time than that required, anticipated, or otherwise allowed by the Project Schedule, the unused time, hereinafter called Float, shall belong to the Project, to be used by the General Prime Contractor as the Project needs determine, including but not limited to providing additional time for completion of any other Work activities required for completion of the Project. Float shall not be considered owned, subject to the exclusive use, or management by any of the interested participants. No claim against DFD or the General Prime Contractor shall be made by any party for the loss of Float time.
- J. The General Prime Contractor shall be independently responsible for resolving any time related matters with Subcontractors, including MEP Subcontractors, Non-MEP Subcontractors, suppliers, or others who may furnish supplies or services on the Project, as a result of Contractual relations with the General Prime Contractor. No liability shall attach to the State, for the failure of any party to carry out the coordination and scheduling responsibilities which they have assumed under this Article 13.
- K. The General Prime Contractor is hereby put on Notice that failure to furnish data or cooperate in good faith is a MATERIAL BREACH OF CONTRACT and may be the basis for a Termination for Default under the procedures set forth in these General Conditions. In such cases DFD, in addition to, and not in lieu of the right to termination for default, may acquire the services of a scheduling specialist to perform any such duties and charge the cost thereof to the General Prime Contractor. In the event that DFD is required to acquire any replacement scheduling services, the General Prime Contractor shall conform to any revised schedule resulting therefrom.
- L. In addition to the criteria set forth in these General Conditions, the full and complete performance of duties required to be performed under this Article 13, is a CONDITION PRECEDENT to the right of the General Prime Contractor to payment of any sums due.. In the event of any delays by the General Prime Contractor or other breach hereof which gives rise to penalties and/or damages to the State, then in any such event DFD may offset such penalties and damages against the sums due or to become due the General Prime Contractor hereunder.
- M. The bonds furnished to secure these commitments shall be applicable to each and every one of these time and scheduling commitments and may be enforced by any person or entity who is entitled to enforce the bonds as a matter of law and who is damaged as a result of breach of these commitments by the General Prime Contractor on the Project to which these provisions apply. The State shall not be responsible for the default of the General Prime Contractor and the remedies of any damaged party shall be limited to an action by the damaged party against the defaulting General Prime Contractor and/or its bonding company, in addition to any other coverage for the bond.
- N. The General Prime Contractor is cautioned that the reporting requirements specified in or for the Schedule Requirements, are in addition to any such similar requirements set forth in the Articles hereof entitled, "REPORTS, RECORDS AND DATA", "QUALITY CONTROL & INSPECTION, and "NOTICE".
- O. In the event it becomes necessary to interpret this Article 13, the construction or interpretation shall strive to achieve the purpose for which this Article 13 was designed to accomplish, i.e. timely, effective and efficient performance of the Work under the Contract within the allowable time identified in the Contract Documents, and at no extra cost or inconvenience to any party, if at all possible.

14. GENERAL PRIME CONTRACTOR'S OBLIGATIONS AND SUPERINTENDENCE

- A. The General Prime Contractor shall provide and pay for all materials, labor, tools, equipment, transportation, and superintendence necessary to execute, complete, and deliver the Work within the specified time.
- B. Where technically and economically feasible, the General Prime Contractor shall use the least hazardous materials, equipment, and processes to execute the Work. If materials are used which are considered an OSHA hazardous material, the General Prime Contractor shall comply with all OSHA rules and regulations.
- C. No materials or supplies which are to become part of the Work shall be purchased by the General Prime Contractor or by any Subcontractor, including MEP Subcontractor or Non-MEP Subcontractor subject to any chattel mortgage, conditional sale contract, or other agreement by which a security interest is retained by the seller. Upon Substantial

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Completion of the Work, good title to all materials and supplies incorporated into the Work shall be conveyed to the State, free and clear of all liens and encumbrances.

- D. General Prime Contractor's obligation for inspection and quality control shall be as provided for in Article 15, entitled "QUALITY CONTROL & INSPECTION", of these General Conditions.
- E. General Prime Contractor's obligation for scheduling of Work and coordination with other entities performing Work required for the completion of the Project shall be as provided for in Article 13, entitled "SCHEDULING AND COORDINATION OF WORK", of these General Conditions.
- F. Any Work necessary to be performed after regular working hours, on Sundays, or Legal Holidays, and for which the General Prime Contractor is responsible, shall be performed without additional expense to the State.
- G. The General Prime Contractor shall furnish, erect, maintain, and remove such temporary Works as identified in the General Requirements of the Contract.
- H. The General Prime Contractor shall give continuous personal superintendence to the Work and its performance at the site, or shall employ a construction superintendent or foreman, experienced in Work of the character covered by the Contract Documents, who shall have full authority to act for the General Prime Contractor.
- I. The presence and observation of the Work by DFD's Project Representative shall not relieve the General Prime Contractor of any obligations.
- J. The premises and surrounding area shall be kept reasonably free from accumulation of waste material or rubbish as specified in the General Requirements of the Contract.
- K. Unused and discarded materials shall be managed or disposed of as specified in the General Requirements of the Contract.
- L. If, in the opinion of DFD, the actions or Work of an employee of the General Prime Contractor or a Subcontractor, including MEP Subcontractor or Non-MEP Subcontractor are judged to be unsatisfactory, careless, incompetent, unskilled, in violation of any environmental or safety standards, or otherwise objectionable, the employee shall be removed from the Project or other corrective action taken upon Notice from DFD.

15. QUALITY CONTROL & INSPECTION

- A. The General Prime Contractor shall, except where a provision of the Contract Documents explicitly states to the contrary, have the full, complete, and absolute responsibility and obligation for insuring that the Work performed by the General Prime Contractor and Subcontractors, including MEP Subcontractors, and Non-MEP Subcontractors strictly conforms to the requirements set forth in the Contract Documents. The General Prime Contractor shall maintain an adequate inspection and quality control system and shall perform such inspections as will ensure that the Work performed under this Contract conforms to the requirements of the Contract Documents.
- B. At the Pre-Construction Meeting, the General Prime Contractor shall provide DFD a full description of the General Prime Contractor's quality control and inspection system and method of implementation.
- C. Prior to the start of significant on-site work by any trade, DFD's Project Representative, the General Prime Contractor's Superintendent and the Subcontractor's foremen, including the MEP Subcontractor foremen and Non-MEP Subcontractors' foremen, shall conduct a pre-installation conference. The purpose of the meeting is to review and discuss Contract requirements applicable to the work, samples required, level of quality necessary, and find answers to any questions that may arise. Such meeting is in addition to regularly-scheduled progress meetings and will be arranged on-site by DFD's Project Representative.
- D. The General Prime Contractor shall maintain complete inspection records and test data to ensure that quality of the Work is in strict compliance with the terms of the Contract Documents. These records shall be available to DFD's Project Representative at all reasonable times and places. The doctrine of "substantial conformity" to the quality

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requirements of the Contract Documents, shall have no application, unless DFD accepts the Work in accordance with Paragraph 15.F

- E. DFD reserves the right to conduct its own quality assurance verification, and to observe, inspect, and /or conduct tests relative to General Prime Contractor and Subcontractor performance. If, when conducting its own quality assurance program, DFD determines that the Work or a portion thereof does not comply with requirements of the Contract Documents, DFD shall attempt to notify the General Prime Contractor of such deficiencies as soon as practicable. However, DFD's exercise of rights under this provision does not:
 - 1. Relieve the General Prime Contractor of the responsibility for providing adequate inspection and quality control measures or the proper documentation of the occurrence of the events required to be tested or monitored in the performance of the Work required by the Contract Documents; and shall provide no basis for waiver or estoppel claims to be asserted against the State;
 - 2. Relieve the General Prime Contractor of responsibility for damage to or loss of the material before acceptance;
 - 3. Constitute or imply acceptance on the part of DFD;
 - 4. Affect the continuing rights of the State after acceptance of the completed Work, except as specifically stated to the contrary, in the Contract Documents.
- F. The presence or absence of DFD's Project Representative does not relieve the General Prime Contractor from any Contract requirement. If the General Prime Contractor desires waiver of any technical or Contract requirement or any other deviation from the strict requirements of the Contract Documents, a specific request for such waiver or deviation must be made to DFD's Project Representative for consideration.
- G. The General Prime Contractor shall, without charge, replace or correct Work found not to conform to the Contract Document requirements, unless in the public interest, DFD agrees to accept the non-conforming Work with an appropriate adjustment in the Contract price thereof. Such acceptance of non-conforming Work shall, whether the determination is to be made at the time of final completion or during the performance of Work, be based upon a determination by DFD that the deviation from Contract Document requirements does not adversely affect the integrity of completed Work.
- H. When DFD directs the General Prime Contractor to replace or correct rejected Work and the General Prime Contractor fails to take such action within the time period identified by DFD, DFD may:
 - 1. Terminate this Contract for default under Article 29, hereof entitled "DFD'S RIGHT TO TERMINATE CONTRACT", or
 - 2. Suspend or stop the Work under Article 28, hereof entitled "DFD'S RIGHT TO SUSPEND, STOP, OR COMPLETE WORK".
- I. If, before acceptance, DFD decides to examine already completed Work by removing it, or removing other Work to expose it, the General Prime Contractor shall promptly furnish all necessary facilities, labor, and material necessary to accomplish the examination. If the Work is found to be defective or non-conforming in any material respect due to the fault of the General Prime Contractor or Subcontractor, or otherwise fails, in the judgment of DFD, to meet the requirements set forth in Paragraph 15.F., the General Prime Contractor shall be responsible for all costs associated with replacement or repair of the defective Work, including the costs of removing or tearing the Work out and satisfactory reconstruction. However, if the Work is found to meet Contract requirements, DFD shall make an equitable adjustment for the additional services involved in the examination and reconstruction, including, if completion of the Work was thereby delayed, an extension of time.
- J. Costs caused by defective construction shall be borne by the General Prime Contractor.

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- K. Unless otherwise specified in the Contract, DFD shall accept, as reasonably as practicable after completion and inspection, all Work completed under the Contract or that portion of the Work which DFD determines can be accepted separately.

16. SUBMITTALS

- A. The General Prime Contractor shall submit at the Pre-Construction Meeting a register listing all known submittals required for the project.
- B. When the General Prime Contractor makes a "Submittal" to describe how it will fulfill its responsibility under this Contract by submitting Shop Drawings, Samples, Cuts, Catalogues, Models, Mockups, or other preliminary information, the following provisions shall apply:
 - 1. THE GENERAL PRIME CONTRACTOR NOTES THE CONSPICUOUS NATURE OF THIS ARTICLE and agrees that these provisions are material provisions and are to be enforced, in the event of controversy, in such a manner as to place upon the General Prime Contractor the full, complete, and total responsibility for the submittal's conformance with the requirements of this Contract, and suitability or usability of preliminary submissions by the General Prime Contractor, without regard to any DFD action or failure to act;
 - 2. All Submittals and supporting information shall be delivered to a party designated by DFD, who shall act on any such Submittal within ten (10) working days or notify the General Prime Contractor in writing, of the time required for such action if greater than the aforementioned ten (10) day period. Such designation shall take place at the Project Pre-Construction Meeting. Review of the Submittals for conformance with requirements of the Contract Documents shall be completed by the party responsible to DFD for Project design. A copy of all such submittal and transmittal forms shall also be sent to DFD's Project Representative;
 - 3. The General Prime Contractor shall make submittals in a timely fashion to assure completion of the entire Project within the allowable time specified in the Contract Documents. The timing of such Submittals shall be subject to the provisions of Paragraphs 13.C. and 13.H.;
 - 4. Each Submittal by the General Prime Contractor shall contain the cover page included in the Specifications. Such cover page shall be signed by a representative of the General Prime Contractor responsible for review of the Submittal to assure compliance with requirements of the Contract Documents.
- C. Submittals shall be provided in response to requests for submittals by DFD, or whenever required by the Contract Documents.
- D. If the General Prime Contractor submits for approval items which do not strictly comply with the design requirements of Contract Documents, the General Prime Contractor shall provide all engineering or design information necessary for complete evaluation of the Submittal by DFD. If it is determined by the General Prime Contractor or DFD that the services of a professional consultant, engineer or architect are required to provide such information, the General Prime Contractor shall acquire such services at its own expense.
- E. If the General Prime Contractor believes that requirements of the Contract Documents are in conflict with the manufacturer's recommended method of installation or application of specified materials, products, or systems, the General Prime Contractor shall indicate such possible conflicts at the time of submittal.

17. EQUALS AND SUBSTITUTIONS

- A. It is not the intention of DFD to limit or restrict competition by the use of any "Brand Name", reference to a particular manufacturer, process, technique, catalog number or other identifying information. Such proprietary specifications or use of "Brand Names" are intended to establish a level of quality or the minimum essential requirements to which the General Prime Contractor must conform, unless more explicit restrictions are stated to apply.

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- B. When the Contract Documents list performance or functional characteristics in connection with Work to be performed, these characteristics are mandatory for reasons of design. Use of any "Equal" or "Substitution" shall be subject to the prior written approval of DFD.
- C. Material, equipment, or processes offered for use as an "Equal" or "Substitution" may be proposed by the General Prime Contractor in writing. Such proposals shall guarantee the proposed "Equal" or "Substitution" to be capable of performing the duties of the originally specified material, equipment, or process. DFD shall respond to any such proposal as soon as practicable, but in no case later than seven (7) working days after receipt of such proposal.
- D. It shall be the sole responsibility of the General Prime Contractor to provide all documentation, regardless of type or quantity, to clearly establish the qualifications of items proposed as "Equals" or "Substitutions" under this Article 17. If the value of the "Equal" or "Substitution" is less than the item specified in the Contract Documents, then an equitable reduction of the price of the Contract shall be made.
- E. When "Equals" or "Substitutions" are approved by DFD and incorporated into the Project by the General Prime Contractor, all costs incurred to 1) correct deficiencies in items, 2) provide for installation or hookup, or 3) to achieve performance specified in the Contract Documents, will be borne by the General Prime Contractor.
- F. Any substitute material or equipment installed by the General Prime Contractor without approval of DFD shall be subject to immediate removal and all costs required to conform to the Contract Documents shall be borne by the General Prime Contractor.
- G. The General Prime Contractor shall assume all liability and responsibility for any changes in the Work or additional Work required to accommodate use of proposed and approved "Equals" or "Substitutions." DFD's approval of such "Equals" or "Substitutions" does not relieve the General Prime Contractor from the obligation to pay all additional costs resulting from their inclusion in the Work, even if additional costs or Work become apparent after execution of the change or installation of the "Equal" or "Substitution." The General Prime Contractor's liability shall include payment of any additional costs incurred by the State, made necessary by, or directly connected to, such changes.

18. CHANGES IN THE WORK

- A. Except in cases of emergency, no changes in the Work required by the Contract Documents may be made by the General Prime Contractor without having prior approval of DFD.
- B. DFD may at any time, without invalidating the Contract and without Notice to Sureties, order changes in the Work by written Change Order or Field Order. Such changes may include additions and/or deletions.
- C. Where DFD desires to make changes in the Work through use of written Change Order, the following procedures shall apply:
 - 1. If requested by DFD, the General Prime Contractor shall prepare and submit a detailed proposal, including all cost and time adjustments to which the General Prime Contractor believes it will be entitled if the change proposed is incorporated into the Contract. DFD shall be under no legal obligation to issue a Change Order for such proposal;
 - 2. The parties shall attempt in good faith to reach agreement on the adjustments needed to the Contract to properly incorporate the proposed change(s) into the Work. In the event that the parties agree on such adjustments, DFD may issue a Change Order and incorporate such changes and agreed to adjustments, if any;
 - 3. In some instances, it may be necessary for DFD to authorize Work or direct changes in Work for which no final and binding agreement has been reached and for which unit prices are not applicable. In such cases the following shall apply:
 - a. Upon written request by DFD, the General Prime Contractor shall perform the proposed Work;
 - b. The cost of such changes shall be determined in accordance with subparagraph 18.I.3..

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- c. In the event agreement cannot be accomplished as contemplated herein, DFD may authorize the Work to be performed by State forces or to hire others to complete the Work. Such action on the part of the State shall not be the basis of a claim by the General Prime Contractor for failure to allow it to perform the changed Work.
- D. Where changes in the Work are made by DFD through use of a Field Order, the General Prime Contractor shall as soon as practicable, and in no case later than ten (10) working days from the receipt of such order, unless another time period has been agreed to by both parties, give DFD written Notice, stating:
 - 1. The date, circumstances and source of the Field Order; and,
 - 2. The cost of performing Work described by such Order, if any; and,
 - 3. Effect of the order on the required completion date of the Project, if any.
- E. The giving of each Notice by the General Prime Contractor as prescribed by this Article 18, shall be a CONDITION PRECEDENT to liability of the State for payment of any additional costs incurred by the General Prime Contractor in implementing changes in the Work. Under this Article 18, no order or statement of the State shall be treated as a Change Order, or shall entitle the General Prime Contractor to an equitable adjustment of the terms of this Contract or damages for costs incurred by the General Prime Contractor on any activity for which the Notice was not given.
- F. In the event Work is required due to an emergency as described in Article 7.B., the General Prime Contractor must request an equitable adjustment as soon as practicable, and in no case later than ten (10) working days of the commencement of such emergency.
- G. All General Prime Contractor requests for equitable adjustment shall be submitted to DFD's Project Representative in written form. Such requests shall set forth with specificity the amount of and reason(s) for the proposed adjustment and shall be accompanied by supporting information and documents. The review, resolution, and payment of such requests shall be governed by Article 30.
- H. No adjustment of any kind shall be made to this Contract, if asserted by the General Prime Contractor for the first time, after the date of final payment.
- I. When DFD makes changes in the Work through written Change Order or Field Order, an amount to be added to or deducted from the Contract shall, at the sole discretion of DFD, be calculated using one of the following methods:
 - 1. By unit prices stated in the Contract Documents or subsequently agreed upon by DFD and the General Prime Contractor; or
 - 2. By a lump sum agreed upon by the General Prime Contractor and DFD, which includes and is limited to the following:
 - a. LABOR: Actual labor rate includes the base rate, taxes, insurance and fringe benefits required by agreement or custom. Unit labor is the labor time anticipated to be expended to install the corresponding unit of actual materials, as taken from the appropriate column of a DFD pre-approved current national manual of labor units. Labor cost is the labor hours approved by DFD multiplied by the DFD pre-approved composite hourly labor rates;
 - b. MATERIAL: Actual material cost is the amount paid or to be paid by the General Prime Contractor for materials, supplies and equipment entering permanently into the Work, including cost of transportation and applicable taxes. This cost shall be substantiated by the Vendor/Supplier's verified invoices/quotes or by using a DFD approved current national pricing service, lowest column price, multiplied by 0.75. The cost shall not exceed the usual and customary cost for such items available in the geographical area of the project. DFD shall have the option of using either or both methods of substantiation to determine the cost to be used;

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- c. **LARGE TOOLS AND MAJOR EQUIPMENT:** Large tools and major equipment are those with an initial cost greater than \$1,000, whether from the General Prime Contractor or other sources. Allowable rental rate is the lesser of the General Prime Contractor's actual rental schedule pre-approved by DFD or a DFD-approved nationally accepted manual of equipment rental rates, lowest column price, multiplied by 0.75. The rental rate shall not exceed the usual and customary amount for such items available in the geographical area of the project. Tool and equipment use time allowed is only for the extra Change Order work. Rental cost is the above tool and equipment time approved by DFD multiplied by the DFD pre-approved rental rates also described above. When large tools and equipment needed for Change Order work are not already at the job site, the actual labor cost to get them there is also reimbursable;
 - d. **BOND COST:** The cost is the actual rate paid for the performance and payment bonds;
 - e. **SUBCONTRACTOR COSTS:** Subcontractor costs (including MEP Subcontractor and Non-MEP Subcontractor costs) are for those subcontracted specialties required to complete the Change Order work, with maximum markups as outlined hereinafter;
 - f. **OVERHEAD AND PROFIT ALLOWANCE:** The maximum allowable markup for overhead and profit markup on Change Order proposals shall not exceed 15 percent total. The General Prime Contractor markup of change order work done by Subcontractors shall not exceed 7 ½ percent. When the value of a Change Order proposal exceeds \$30,000, a declining scale will be used to negotiate the allowable combined overhead and profit margin. Where Change Order proposals involve a credit only, a reasonable allowance for overhead and profit are properly included as part of the downward adjustment for a deductive change exceeding \$15,000. The amount of such allowance is subject to negotiation.
 - g. **EXCLUSIONS:** All other Change Order expenses are part of the overhead and profit allowance which are not reimbursable as separate items and include the following:
 - (1) **CHANGE ORDER PREPARATION:** All costs associated with the processing of the Change Order are included in the overhead and profit allowance;
 - (2) **DESIGN, ESTIMATING, AND SUPERVISION:** All such efforts, unless specifically requested by DFD as additional Work to be documented as a Change Order proposal or portion thereof, is included in the overhead and profit allowance;
 - (3) **INSTALLATION LAYOUT:** The layout required for the installation of material and equipment, and installation design, is the responsibility of the General Prime Contractor and is included in the overhead and profit allowance;
 - (4) **SMALL TOOLS AND SUPPLIES:** The cost of small hand tools with an initial cost of \$1,000 or less, along with consumable supplies and expendable items such as drill bits, saw blades, gasoline, lubricating or cutting oil, and similar items, is included in the overhead and profit allowance;
 - (5) **GENERAL EXPENSE:** The general expense, which is those items that are a specific job cost not associated with direct labor and material, is included in the overhead and profit allowance;
 - (6) **RECORD DRAWINGS:** The preparation of record or as-built drawings required is included in the overhead and profit allowance;
 - (7) **OTHER COSTS:** a) All association dues, assessments, and similar items are included in the overhead and profit allowance. b) All education, training, and similar items are included in the overhead and profit allowance. c) All drafting and/or engineering, unless specifically requested by DFD as additional Work to be documented as a Change Order proposal or portion thereof, is included in the overhead and profit allowance. d) All other cost items such as, but not necessarily limited to, review, coordination, estimating, and expediting, relative to Change Order proposals, are associated with field and office supervision and are included in the overhead and profit allowance.
3. By segregating the cost for Work performed and monitoring such costs. These costs shall be recorded daily, reported as a part of the General Prime Contractor's daily report procedure, and certified by DFD's Project

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Representative. Such costs shall be limited to those identified in subparagraph 18.I.2., except that actual rather than estimated labor expended and material installed shall be used in determining the cost adjustment.

- J. The General Prime Contractor shall provide DFD with costs for all proposed Change Orders as outlined in the *"Procedures for the Change Order Proposal"* document, to be provided by DFD to the General Prime Contractor at the Pre-construction meeting. Typical labor rates to be used shall be provided by the General Prime Contractor to DFD no later than submittal of the first payment request.
- K. The completion date is determined by DFD. The schedule, however, is the responsibility of the General Prime Contractor. Time extensions for extra Work will be considered when a schedule analysis shows that the Change Order places the Work beyond the completion date stated in the Notice To Proceed. Unless the cumulative time extensions for extra Work places the Work beyond the original completion time specified in the Instructions To Bidders, all extended overhead costs are included in the overhead and profit allowance. If significant scope changes occur which places the extra Work beyond the original completion time specified in the Instructions To Bidders, actual additional costs will be considered in accordance with Article 30, CLAIMS.

19. REPORTS, RECORDS AND DATA

- A. The General Prime Contractor shall submit to DFD's Project Representative daily Work activity reports for each day on which Work is performed by any employee or entity for which the General Prime Contractor is responsible. Such reports shall include all relevant data concerning the progress of Work activities the General Prime Contractor and Subcontractors are responsible for and the effect of that activity on the time of performance of the Contract or the cost thereof.
- B. Daily Work activity reports shall be completed and signed by the General Prime Contractor's Job Superintendent or other on-site representative authorized by the General Prime Contractor to make such reports, who shall be personally responsible for assuring that each such report is current, accurate and complete. The signature of the General Prime Contractor's representative shall constitute a warranty to DFD that, after suitable inquiry, to the best of their knowledge and belief, all such data is current, accurate and complete as of the date of the report.
- C. The General Prime Contractor shall submit to DFD's Project Representative schedules of quantities and costs, progress schedules, wage rates, reports, estimates, invoices, records and other data as DFD may request concerning Work performed or to be performed under this Contract if DFD determines such information is needed to substantiate Change Order proposals, claims, or to resolve disputes.

20. NOTICE REQUIREMENTS

- A. Except as otherwise expressly provided in the Contract Documents, all notices, demands and other communications that are required to be made or delivered to DFD shall be signed by or on behalf of the General Prime Contractor, and shall be deemed fully made and effective immediately upon presentation to DFD's Project Representative or the deposit thereof in the United States mail, postage prepaid and addressed to DFD's Project Representative.
- B. The General Prime Contractor's presentation to DFD's Project Representative or mailing of such Notice to DFD's Project Representative is a CONDITION PRECEDENT to any liability of DFD for any actual or alleged breach of DFD's contractual obligations hereunder. The General Prime Contractor's failure to give such written Notice in the manner and time prescribed by the Contract Documents shall result in the waiver of any and all claims, demands and causes of action that the General Prime Contractor may have against DFD arising from or in connection with the actual or alleged breach.

21. TIME FOR COMPLETION OF THE PROJECT

- A. It is hereby understood and mutually agreed, by and between the General Prime Contractor and DFD that the time for completion of the Work required by the Contract Documents is an ESSENTIAL CONDITION of this Contract.
- B. The General Prime Contractor agrees that the Work required by the Contract Documents will be prosecuted regularly and diligently at a rate of progress that will ensure its full completion within the time specified in the Contract Documents. It is expressly understood and agreed, by and between the General Prime Contractor and DFD, that the

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specified time period for completion of the Work described in the Contract Documents is a reasonable time for the completion of the Work, taking into consideration the average weather conditions and usual industrial conditions prevailing in the locality in which the Work is to be completed.

- C. When events occur which, in the opinion of the General Prime Contractor, prevent completion of the Project within the time period allowed by the Contract Documents, the General Prime Contractor shall request an extension of the specified time for completion. Such request shall include the reasons for delay, the amount of time extension being requested, and any cost(s) associated with the delay. All such requests shall be made in writing and delivered to DFD's Project Representative within ten (10) working days from the beginning of such delay, or within ten (10) working days from the time when the circumstance with potential for delay becomes reasonably known to the General Prime Contractor, whichever is earlier. DFD shall act on such requests as soon as practicable and notify the General Prime Contractor of DFD's decision.
- D. If any activity is delayed, or anticipated to be delayed, thereby delaying the completion of the entire Project, the General Prime Contractor shall have the right to take action as may be necessary to recapture any delay. Such action shall include, but not be limited to:
 - 1. Increase in staffing
 - 2. Increase in shifts, hours of Work, or number of days of Work
 - 3. Use of available float
 - 4. Changing the sequence of Work activities
- E. Costs caused by delays or improperly timed activities shall be borne by the party responsible therefor, and Change Orders, as deemed appropriate by DFD, shall be issued in accordance with Article 18 of these General Conditions.
- F. Costs for acceleration of Work activities to allow completion of the Project in less time than that allowed by the Contract Documents shall be borne by the party requesting such acceleration or early completion. No claim for delay shall be valid against DFD for compensation for delayed completion which extends completion beyond the early finish date, but which does not continue beyond the stated time for completion as set forth in the Contract.
- G. Where abnormal weather conditions may have substantially contributed to the delay of Project completion, such determination shall only be made by DFD upon written request by the General Prime Contractor, and by comparing the total season in which such weather occurs with the average of the previous five years. Where DFD determines that weather has substantially delayed Work, thereby delaying completion of the Project within the time specified in the Contract Documents, DFD shall extend the allowable time for completion an amount equal, in the opinion of DFD, to the delay caused by such weather conditions. Extension(s) in the allowable time for completion, when granted by DFD as a result of abnormal weather conditions, shall not be cause for any request for additional compensation by the General Prime Contractor.
- H. Where, under the Contract, DFD extends the amount of time specified for completion of the Project, the new time limit fixed by such extension shall be the essence of this Contract.
- I. Time extensions and associated adjustments in the Contract Documents which are implemented by, or based on Change Orders and Field Orders for which an overhead allowance would otherwise be permitted hereunder, shall not include any allowance for extended and unabsorbed overhead costs.
- J. Permitting the Work or any part of it to continue after the time fixed for its completion, or after the date to which the time for completion may have been extended, shall in no way operate as a waiver on the part of DFD, of any of DFD's rights under the Contract or a waiver of any default by the General Prime Contractor.
- K. If the General Prime Contractor fails to complete the Work within the time specified in the Contract and such failure is due to reasons which were not beyond the reasonable control of the General Prime Contractor or if the General Prime Contractor fails to complete the Work within the time specified in the Contract and fails to make the written

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request as provided for in Paragraph 21(C), then in any such event the General Prime Contractor shall pay to DFD actual damages. When such damages can be reasonably predetermined, the amount will be indicated in the Supplementary General Conditions.

- L. If DFD terminates the Contract, or suspends or stops Work in accordance with Paragraphs 28.B. or 29.A. due to the fault of the General Prime Contractor, the damages described in Paragraph 22.M shall be assessed for each day (or any part thereof) such Work is stopped on the Project. If DFD does not elect to terminate the Contract or to suspend or stop the Work, the damages shall be assessed for each day of delay in Substantial Completion.
- M. Nothing contained herein shall be construed as limiting the right of the State to recover actual damages sustained as a result of any delay by the General Prime Contractor which exceed the amounts specified in the Supplementary General Conditions.
- N. DFD may, at its discretion, waive damages due the State, or any portion thereof.

22. USE AND POSSESSION PRIOR TO COMPLETION

- A. DFD shall have the right to authorize possession or use of any completed or partially completed part of the Work. Before the State takes possession or uses any part of the Project:
 - 1. DFD and the General Prime Contractor shall prepare a list of items of Work remaining to be performed or corrected on those portions of the Project that the State intends to take possession of or use;
 - 2. Failure to include on this list any item of Work clearly required to be performed by the General Prime Contractor shall not relieve the General Prime Contractor of responsibility for complying with the terms of the Contract;
 - 3. The State's possession or use shall not be deemed an acceptance of any Work under the Contract Documents.
- B. While the State has such possession or use, the General Prime Contractor shall be relieved of the responsibility for loss or damage to the Work resulting from the State's possession or use.

23. SUBSTANTIAL COMPLETION

- A. Prior to the General Prime Contractor's request for final inspection by DFD, the General Prime Contractor shall conduct an inspection to determine if building systems are functional, Work activities complete, and the Work product is in strict accordance with the requirements of the Contract Documents. If, in the course of this inspection, items are identified which are in need of repair, replacement, correction, or completion, the General Prime Contractor shall make every attempt to complete or correct those items prior to any request for DFD inspection of the Work or Certification of Substantial Completion.
- B. When the General Prime Contractor considers that the Work, or a designated portion thereof, is Substantially Complete, the General Prime Contractor shall provide written Notice and Request for Inspection to DFD. Such Notice shall include a list of all known incomplete and non-conforming work along with a schedule for completing each item as appropriate. Upon the receipt of the General Prime Contractor's Notice, DFD will make an inspection to determine whether the Work or designated portion thereof is Substantially Complete. If, during such inspection, DFD identifies items not complete, in need of correction, replacement, or otherwise not in accordance with the requirements of the Contract Documents, the General Prime Contractor shall complete or correct such items. After completion of such punch list items, the General Prime Contractor may request subsequent inspection by DFD.
- C. When in the judgment of DFD the Work, or designated portion thereof is Substantially Complete, DFD will prepare a Certificate of Substantial Completion, establishing the responsibilities of the State and General Prime Contractor for security, maintenance, heat, utilities, damage to the Work, and insurance.
- D. Where items have been identified which are not complete or are in need of correction DFD may, at its sole discretion declare the Work, or designated portion thereof Substantially Complete, noting such deficiencies. In such case, the

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Certificate of Substantial Completion shall fix the time within which the General Prime Contractor shall finish all items not completed or corrected.

- E. At the time DFD declares the Work or designated portion thereof Substantially Complete, the General Prime Contractor may request payment, reflecting adjustment in retainage, if any, for such Work or portion thereof as provided in the Contract Documents.

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24. FINAL COMPLETION AND FINAL PAYMENT

- A. Prior to Request for Final Payment, the General Prime Contractor shall provide a Certification that all debts and claims against this Project have either been paid in full or otherwise satisfied and give final evidence of release of all liens against the Project, the State, and all proceeds payable hereunder. The General Prime Contractor shall certify upon such payment request that the data contained therein is current, accurate, and complete. General Prime Contractor shall permit, if requested by DFD, the final inspection to be jointly conducted by the General Prime Contractor and DFD's Project Representative. The General Prime Contractor shall give Notice at least 72 hours in advance of the time set for final inspection.
- B. Upon completion of the project and before receiving final payment for work on the project, the General Prime Contractor shall file with DFD an affidavit stating that the General Prime Contractor has complied fully with Section 103.49(4r) Wis. Stat. and that the General Prime Contractor has received an affidavit from each of the General Prime Contractor's agents, MEP Subcontractors, and Non-MEP Subcontractors stating that they also have complied fully with Wis. Stat. § 103.49(4r).
- C. As a CONDITION PRECEDENT to Final Payment, all corrective action to remedy deficiencies in the Work required by Contract Documents and Work identified on the punch list must have been completed. In addition, where required by Contract Documents, all training of the user agency's staff in the proper operation and maintenance of the Work shall have been completed, Operating and Maintenance Manuals and Instructions as well as drawings marked up to reflect "as built" conditions must have been transmitted to DFD's Project Representative, and all Warranty certificates signed and presented for DFD acceptance.
- D. When to the satisfaction of DFD the Work has been completed, and is of the quality required by the Contract Documents, DFD may authorize payment of all sums then due the General Prime Contractor. Receipt of the final payment, as provided for herein shall constitute a waiver of any and all claims against the State arising out of, under, or incident to the Work performed under the Contract.
- E. If the General Prime Contractor fails to submit a Request for Final Payment or make satisfactory arrangements with DFD within thirty (30) calendar days of notification, no further payments will be made and the Contract will be closed. The last Request for Certification for Payment will be considered the Final Payment under the terms and conditions of the Contract.
- F. The authorizing of Final Payment by DFD shall constitute the final acceptance of the Work but shall not constitute a waiver of any claims by DFD including, but not limited to the following:
 - 1. Outstanding lien claims or claims for liens;
 - 2. Defective Work which was specifically identified before the making of final payment;
 - 3. Defects which result from the General Prime Contractor's failure to perform the Work in strict accordance with the Contract Documents;
 - 4. Any warranty or guarantee required by the Contract Documents;
 - 5. Any other right surviving the State as to which the General Prime Contractor was specifically given notice before or during the final inspection and final payment process;
 - 6. Rights surviving to the State as a matter of law.

25. WARRANTIES

- A. The General Prime Contractor Warrants to DFD that all materials and supplies used in the Work are free from all liens, claims, or encumbrances, and good title to materials and supplies is retained by the General Prime Contractor and shall be conveyed to DFD on or before the date of Substantial Completion.

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- B. The General Prime Contractor Warrants to DFD that all materials and equipment furnished under the Contract will be of good quality and new unless otherwise required or permitted by the Contract Documents, that the Work will be free from defects not inherent in the quality required or permitted, and that the Work will strictly conform with the requirements of the Contract Documents. Work not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective.
- C. Printed, signed copies of Manufacturer's warranties, which are required by the Contract Documents, shall be presented to DFD prior to approval of final payment.
- D. All warranties, including manufacturer's warranties and General Prime Contractor warranties, shall take effect on the date of Substantial Completion and shall remain in effect for a period of one (1) year thereafter, unless Contract Documents specifically require a different warranty period.
- E. If any part of the Work is declared Substantially Complete by DFD, and the user agency takes possession of that portion of the Work before completion of the entire Project, the warranty for that portion of the Work shall continue for a period of one (1) year from the date of Substantial Completion for that portion of the Work, unless Contract Documents specifically require a different warranty period.
- F. The General Prime Contractor shall remedy, at the General Prime Contractor's expense, any defect in the Work. In addition, the General Prime Contractor shall remedy, at the General Prime Contractor's expense, any damage to State owned or controlled real or personal property, when the damage is the result of:
 - 1. The General Prime Contractor's failure to conform to Contract Document requirements; or
 - 2. Any defect in equipment, material, Workmanship, or design furnished by the General Prime Contractor or Subcontractors regardless of tier.
- G. The General Prime Contractor shall warrant any Work restored or replaced due to damage caused in fulfilling the terms and conditions of this Article 25, or during performance of any Work required by the Contract Documents. The General Prime Contractor's warranty with respect to Work repaired or replaced will run for one (1) year from the date of Substantial Completion of said repair or replacement.
- H. DFD shall notify the General Prime Contractor, in writing, within a reasonable time after discovery of any failure, defect, or damage.
- I. If, after the receipt of Notice of a claim under this warranty, the General Prime Contractor fails to remedy any failure, defect, or damage within a time judged reasonable by DFD, DFD shall have the right to replace, repair, or otherwise remedy the failure, defect, or damage, at the General Prime Contractor's expense.
- J. All warranties under this Contract or in any related to this contract, express or implied, shall be obtained for and shall be subject to direct enforcement by DFD. The General Prime Contractor shall provide in each subcontract, or other purchase agreement, for the assignment to DFD of all such warranties and for the right of enforcement by DFD. In addition, if necessary the General Prime Contractor shall:
 - 1. Obtain for the State's benefit all warranties that would be given in normal commercial practice;
 - 2. Require all warranties to be executed, in writing, for the benefit of the State, if so directed by DFD;
 - 3. Enforce all warranties for the benefit of the State, if directed to do so by DFD;
 - 4. Obtain for the State's benefit all warranties given by any Subcontractor, at any tier, if such warranty is in excess of the one (1) year warranty period set forth herein.
- K. Unless a defect is caused by the negligence of the General Prime Contractor or Subcontractors at any tier, the General Prime Contractor shall not be liable for the repair of any defects of material or design furnished by the State.
- L. This warranty shall not limit the State's rights under Articles entitled:

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1. Article 15 - "QUALITY CONTROL & INSPECTION"
 2. Article 26 - "PAYMENTS TO GENERAL PRIME CONTRACTOR"
 3. Article 27 - "PAYMENTS BY GENERAL PRIME CONTRACTOR"
- M. Defects in design or manufacture of equipment specified by DFD on a "Brand Name" basis shall not be included in this warranty. In this event, the General Prime Contractor shall require any Subcontractor manufacturers, or suppliers to execute their warranties, in writing, directly to DFD.

26. PAYMENTS TO GENERAL PRIME CONTRACTOR

- A. Payments to the General Prime Contractor under the Contract Documents will be made as provided for in Wis. Stat. § 16.855(19)(a), as the Work progresses on this Project. Payment requests will be processed monthly, except for special circumstances approved by DFD. The General Prime Contractor must perform all of the conditions required for payment and must have met the obligations which are necessary to qualify for any partial payments.
1. No General Prime Contractor whose Work is deficient or whose Work fails to conform to the quality standards set forth in the Contract Documents shall be entitled to interim, progress or partial payments;
 2. As a CONDITION PRECEDENT to entitlement to payment, the General Prime Contractor shall, at the request of DFD, submit satisfactory evidence to establish that the sum set forth in any application for payment represents the "Proportionate Value" of Work completed;
 3. The General Prime Contractor shall certify each request for payment as being a true, accurate, and complete statement of account as of the date on which the certificate was made, and that the stated sums are then earned and payable to the General Prime Contractor;
 4. The General Prime Contractor shall certify that it holds clear title to all property of every description which serves as the basis for the application for payment. General Prime Contractor warrants that title to any such property is being transferred to the State free and clear of all liens. If requested by DFD, the General Prime Contractor shall produce satisfactory evidence of transfer of title from suppliers and Subcontractors, including MEP Subcontractors or Non-MEP Subcontractors, to the General Prime Contractor, without reservation, or with adequate waiver of lien. These payments may include any fabricated or manufactured materials and components specified, previously paid for by General Prime Contractor and delivered to the site, properly stored, and suitable for incorporation into the Work embraced in the Contract;
 5. All material and Work, title to which has been transferred to the State as a result of the making of a partial payment, shall become the sole property of the State. Nothing in this Article shall be construed as relieving the General Prime Contractor from the risk of loss or damage to any such property. The General Prime Contractor shall have the sole responsibility for obtaining proper insurance on, as well as the responsibility for the care and protection of materials and Work upon which payments have been made. The General Prime Contractor shall be responsible for the restoration of any damaged Work. Nothing herein shall operate as a waiver of the rights of DFD to require fulfillment of all of the terms of the Contract.
 6. As soon as possible after the notice to proceed is received, the General Prime Contractor shall submit to DFD's Project Representative a cost breakdown of the proposed values for work to be performed, as prescribed by the Contract Documents and in the detail requested by DFD. The cost breakdown items shall reflect actual work progress stages as closely as feasible which, if approved by DFD, will become the basis for construction progress payments.
- B. All requests for payment shall be submitted to DFD's Project Representative. To expedite payment of sums due under the Contract, the General Prime Contractor and DFD's Project Representative shall, where possible, jointly review any such request for payment at the site, inspecting the Work, if necessary to determine the validity of the request or modifications to the request which are necessary to accurately represent the value of Work completed in accordance with the Contract Documents.

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- C. The General Prime Contractor shall furnish any and all accounting records requested by DFD to validate all or any part of any request for payment. The General Prime Contractor shall maintain these accounting records for a period of three (3) years from the date DFD authorizes final payment.
- D. For the purposes of this Article 26, requests for payment may include any fabricated or manufactured materials or components specified, previously paid for by the General Prime Contractor and delivered to the Work site, or properly stored and suitable for incorporation in the Work embraced in the Contract Documents. The General Prime Contractor shall identify the method of storage for such materials and shall complete an "Off-site Storage Agreement" form which is available from DFD. Proper evidence of insurance shall be presented to protect the interest of the State. If payment is intended to be requested for any off-site storage items, such items shall be listed as separate lines in the request and certification for payment, cost breakdown.
- E. If separate prices are set forth in the Contract Documents for identifiable items of Work, payment for such prices shall be made at the time of completion of those items of Work. Payment under this Paragraph (E) shall be an interim payment until the time of Final Payment and acceptance of the Work by DFD.
- F. As the work progresses under the general prime contract for construction of a project the department, from time to time, shall grant to the General Prime Contractor an estimate of the amount and proportionate value of the work properly completed, which shall entitle the contractor to receive the amount, less the retainage, from the proper fund. The retainage shall be an amount equal to not more than 5% of the estimate until 50% of the work has been completed. At 50% completion, no additional amounts shall be retained, and partial payments shall be made in full to the contractor unless the department certifies that the job is not proceeding satisfactorily. At 50% completion or any time thereafter when the progress of the work is not satisfactory, additional amounts may be retained but in no event shall the total retainage be more than 10% of the value of the work completed. Upon substantial completion of the work, any amount retained shall be paid to the General Prime Contractor, less the value of any required corrective work or uncompleted work. For the purposes of this section, estimates may include any fabricated or manufactured materials and components specified, previously paid for by General Prime Contractor and delivered to the work or properly stored and suitable for incorporation in the work embraced in the contract.

Nothing herein shall preclude DFD from deducting from any request for payment such amounts as will properly represent the value of Work which fails to meet the quality standards of the Contract Documents or which the General Prime Contractor fails to complete.

- G. In the event DFD receives Notice from any person, Subcontractor, or other third party, that the Contractor has failed to pay such person(s) for Work performed in accordance with the Contract Documents, the Contractor shall, at the request of DFD, and in no more than 10 calendar days, provide all documentation DFD believes necessary to determine whether such payment is due, or reasons for non-payment of disputed amounts. In the event DFD determines the claim to be valid and payment is due, or in the absence of aforementioned documentation, DFD may authorize direct payment of any unpaid bills, withholding from the General Prime Contractor's unpaid compensation a sum of money deemed reasonably sufficient to pay any and all such claims until satisfactory documentation is furnished that all liabilities have been fully discharged or reasons for non-payment of disputed amounts are provided by the General Prime Contractor. In no event shall these provisions be construed to impose any obligations upon the State to either the General Prime Contractor or the General Prime Contractor's Surety.
- H. In paying any unpaid bills of the General Prime Contractor relating to the Work, the State shall be deemed the agent of the General Prime Contractor, and any payment so made by the State shall be considered as a payment made under the Contract by the State to the General Prime Contractor for its account and the State shall not be liable to the General Prime Contractor for any such payment made in good faith.
- I. The General Prime Contractor agrees to indemnify and hold the State harmless from all claims growing out of lawful demands of Subcontractors (including MEP Subcontractors and Non-MEP Subcontractors), laborers, Workers, mechanics, material persons, and furnishers of machinery and parts thereof, equipment, power tools, and all supplies, including commissary, incurred in the performance the Work required by Contract Documents.
- J. The General Prime Contractor shall, at DFD's request, furnish satisfactory evidence that all obligations of the nature designated above have been paid, discharged, or waived.

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27. PAYMENTS BY GENERAL PRIME CONTRACTOR

- A. Please see Article 12 for specific information regarding Prompt Payment from General Prime Contractors to MEP Subcontractors and the specific Prompt Payment clause that must be inserted into the contract between General Prime Contractors and MEP Subcontractors.
- B. Not more than seven (7) calendar days following the receipt of each Payment authorized by DFD, the General Prime Contractor shall make payment to each and every person, Subcontractors, (including MEP Subcontractors, and Non-MEP Subcontractors), or entity who furnished goods or services for the progress of the Work on the Project, the value of which goods or services were included in the General Prime Contractor's "Request and Certification for Payment" under Article 26 of the General Conditions, or who by law or Contract payment is due upon the receipt of the payment most recently received from the State. The General Prime Contractor shall insert a provision in all subcontracts requiring payment in the manner herein specified. The General Prime Contractor shall also require Subcontractors to include a like provision in all contracts with their subcontractors or suppliers, regardless of tier.
- C. Upon request of DFD, satisfactory evidence of payment under this Article 27 shall be furnished to DFD forthwith.
- D. Please see Article 12 for specific information regarding retainage on contracts between General Prime Contractors and MEP Subcontractors. In short, retainage on an MEP Subcontract shall occur and be in amounts and on a schedule equal to the retainage schedule in the contract between the General Prime contractor and the State.
- E. Nothing herein shall preclude the General Prime Contractor from deducting from any request for payment such amounts as will properly represent the value of Work which fails to meet the quality standards of the Contract Documents or which the MEP Subcontractor fails to complete.

28. DFD'S RIGHT TO SUSPEND, CORRECT, OR COMPLETE WORK

- A. DFD may order the General Prime Contractor, in writing, to suspend or delay all or any part of the Work of the General Prime Contractor for the period of time that DFD determines appropriate for the convenience of the State.
 - 1. If the General Prime Contractor determines that the cost of the Work is altered by such suspension, or the time for completion of such Work is altered or delayed, the General Prime Contractor shall provide Notice to DFD of any such costs or delay;
 - 2. Such Notice shall be made within ten (10) calendar days of the order to stop or suspend Work;
 - 3. Provision of such Notice to DFD shall be a CONDITION PRECEDENT to any State liability for increased costs, delay, or time extension.
- B. In the event that any of the Work in progress, or Work already completed by the General Prime Contractor, Subcontractors, including MEP Subcontractors, or Non-MEP Subcontractors, is determined by DFD to be of substandard quality, defective, or otherwise in violation of requirements of the Contract Documents, or in the event that the General Prime Contractor fails or refuses to complete Work required by the Contract Documents, DFD may serve written Notice upon the General Prime Contractor requiring that corrective action be taken by the General Prime Contractor to remedy, correct, complete, or replace such Work.
 - 1. The General Prime Contractor shall have ten (10) calendar days after the serving of such Notice within which to take corrective action or to make arrangements judged satisfactory by DFD for the corrections to be made. The Contract shall terminate in accordance with the provisions of Paragraph 29.A. of the General Conditions if corrective action is not taken or other arrangements, judged satisfactory by DFD, are not made by the General Prime Contractor;
 - 2. If the General Prime Contractor fails within the ten (10) calendar day period after receipt of written Notice to commence and continue correction of such default or neglect with diligence and promptness, DFD may order the General Prime Contractor to stop the Work or any portion thereof until the cause for such order has been

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eliminated. DFD may then, without prejudice to other remedies DFD may have, correct such deficiencies through whatever means necessary;

3. The cost of any corrective action, replacement, or repair shall be chargeable to the General Prime Contractor and its Surety. In such cases DFD may deduct from payments then or thereafter due the General Prime Contractor the cost of correcting such deficiencies, compensation for the State's additional services, and expenses made necessary by such default, neglect, or failure. Such action by the State shall not prevent the State from recovery of other damages or penalties sustained as a result of the General Prime Contractor's default or neglect. If payments then or thereafter due the General Prime Contractor are not sufficient to cover such amounts, the General Prime Contractor and its Surety shall pay the difference to the State;
 4. If, after suspension of the Work, it is determined that the General Prime Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been issued for the convenience of the State under Paragraph 29.B.
- C. The right of DFD to stop or suspend the Work shall not give rise to a duty on the part of DFD to exercise this right for the benefit of the General Prime Contractor or any other person or entity.
- D. DFD may exercise any and all rights or remedies provided for herein, by law or in equity, either concurrently or singly in its sole discretion.

29. DFD'S RIGHT TO TERMINATE CONTRACT

- A. In the event that any of the provisions of this Contract, including time for completion, are violated by the General Prime Contractor, DFD may serve written Notice upon the General Prime Contractor and the Surety of its intention to terminate this Contract, including the reasons for such intention to terminate. The General Prime Contractor shall have ten (10) calendar days after the serving of such Notice within which to cease the default or violation, to take corrective action, or to make arrangements judged satisfactory by DFD for the corrections to be made. Contract shall terminate upon expiration of the said ten (10) calendar day period if corrective action is not taken by the General Prime Contractor.
1. In the event of termination of the Contract, DFD shall immediately serve Notice thereof upon the Surety and the General Prime Contractor, and the Surety shall have the right to take over and perform the Contract subject to DFD's approval;
 2. The Surety shall take over and perform the Contract without need for further agreement with DFD. All Subcontractors shall be subject to approval of DFD in accordance with Article 11. DFD will not consider a General Prime Contractor or a subsidiary of a General Prime Contractor whose contract was terminated as a qualified, responsible Subcontractor.
 3. Within ten (10) calendar days after the serving of such Notice of termination, the Surety shall provide DFD with a comprehensive plan for completion of the Work required by the Contract Documents. Such plan must include performance of the Work within a time period acceptable to DFD. In the absence of such a plan, DFD may take possession of materials, appliances, and facilities as may be on the site of the Work, and complete the Work by whatever means necessary;
 4. All costs for completion of the Work and any additional damages sustained by the State thereby shall be at the expense of the General Prime Contractor and its Surety.
- B. Notwithstanding any contrary provision of the Contract or these General Conditions, DFD shall also have the right, exercisable by it in its sole discretion, to terminate this Contract at any time without cause following the expiration of thirty (30) calendar days after written Notice to the General Prime Contractor. In such event, the General Prime Contractor shall be paid for all Work performed to the effective date of termination, and any "Reimbursable Expenses" outstanding as of the date of termination. The term "Reimbursable Expenses" shall include the cost of personal property or materials which meet requirements of the Contract Documents and have been purchased by the General Prime Contractor for incorporation into the Work but not yet incorporated therein; lease payments due to an unaffiliated third party lessor for equipment provided to the Project, where the lease term extends beyond the

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termination date of this Contract and the General Prime Contractor is unable to terminate said lease; and other costs approved by DFD. Reimbursable Expenses do not include lost profits or payments due to Subcontractors, including MEP Subcontractors or Non-MEP Subcontractors for any period of time subsequent to termination of the Contract. Upon payment of the Reimbursable Expenses, the General Prime Contractor shall deliver to the State any materials or personal property for which said payment has been made.

- C. The right of DFD to terminate the Contract shall not give rise to a duty on the part of DFD to exercise this right for the benefit of the General Prime Contractor or any other person or entity.
- D. DFD may exercise any and all rights or remedies provided for herein, by law or in equity, either concurrently or singly in its sole discretion.

30. CLAIMS

- A. The General Prime Contractor shall be barred from asserting or pursuing any claims, demands, and causes of action against the State unless the General Prime Contractor complies with the following requirements:
 - 1. First, the General Prime Contractor shall present its claim to DFD's Project Representative who shall have twenty one (21) calendar days after presentation of the claim to act thereon or notify the General Prime Contractor in writing of the additional time required for such action if greater than the aforementioned twenty-one (21) day period. Failure by DFD's Project Representative to so act within the aforesaid period of time shall constitute a rejection of the General Prime Contractor's claim;
 - 2. If the General Prime Contractor's claim is rejected by DFD's Project Representative, the General Prime Contractor may appeal it in writing to the Administrator of Division of Facilities Development. Any such appeal shall be made within twenty-one (21) calendar days after it is rejected by DFD's Project Representative. If no such appeal is made, the decision of DFD's Project Representative shall become final and binding and the General Prime Contractor shall waive its right to pursue the claim further;
 - 3. If the General Prime Contractor files a timely appeal of the decision of DFD's Project Representative, the Administrator of the Division of Facilities Development shall act on the General Prime Contractor's claim within fourteen (14) calendar days or notify the General Prime Contractor in writing, of the time required for such action if greater than the aforementioned fourteen (14) day period. Failure by the Administrator of the Division of Facilities Development to so act within the aforesaid period of time shall constitute a rejection of the claim;
 - 4. If the General Prime Contractor's claim is rejected by the Administrator of the Division of Facilities Development, the General Prime Contractor shall, as a CONDITION PRECEDENT to filing suit against the State, comply with the two-step claims resolution procedure set forth in Wis. Stat. §§ 16.007, 775.01.
- B. Any judicial action relating to the construction, interpretation, or enforcement of the Contract Documents including without limitation, the General Prime Contractor's claims, demands, and causes of action for additional construction costs, delay damages, and other amounts owed hereunder, shall be brought and venued in the Dane County Circuit Court in Madison, Wisconsin. The General Prime Contractor hereby consents to personal jurisdiction in that venue, and waives any defenses that the General Prime Contractor otherwise might have relating thereto.
- C. The General Prime Contractor hereby waives its right to a jury trial in connection with any judicial action or proceeding that may arise by and between the State and the General Prime Contractor concerning the construction, interpretation, or enforcement of the Contract Documents including, without limitation, any claims, demands, or causes of action that the General Prime Contractor hereafter may assert against the State for additional construction costs, delay damages, and other amounts.
- D. The General Prime Contractor shall proceed diligently with the performance of the Work, as directed by DFD, pending the final decision of DFD's Project Representative, the Administrator of the Division of Facilities Development, the State Claims Board, the Legislature, and any subsequent judicial action or appeal.

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- E. It is recognized by DFD and General Prime Contractor that performance of DFD's duties may require or cause the interruption or suspension of the Work for periods other than the reasonable time allowed under Article 28. In the event of such interruption or suspension, DFD and the General Prime Contractor shall negotiate in good faith in an effort to agree upon the additional construction costs and other amounts, if any, that shall be paid the General Prime Contractor because of the interruption or suspension of Work. Anything in the Contract Documents to the contrary notwithstanding, however, it is expressly understood and agreed that:
1. The total amount recoverable by and payable to the General Prime Contractor shall be limited to an amount equal to the sum of:
 - a. The additional construction costs and other amounts actually incurred by the General Prime Contractor because of DFD's actions and omissions; plus
 - b. A maximum overhead and profit allowance equal to fifteen (15) percent of the sum of additional construction costs and other amounts.
 2. Overhead costs for extended or unabsorbed overhead shall not be used as the basis for calculating or determining the amount of any additional construction costs or other amounts recoverable by or payable to the General Prime Contractor; and
 3. By entering into this Contract with DFD, the General Prime Contractor hereby waives any rights that it otherwise might have to pursue recovery of overhead costs for extended or unabsorbed overhead from DFD.
- F. DFD and the General Prime Contractor shall act in good faith to efficiently and fairly resolve claims and disputes arising under the Contract in order to avoid wherever possible, formal legal proceedings.

31. INSURANCE

- A. The General Prime Contractor shall not commence Work under this Contract until the General Prime Contractor has obtained all the insurance required under this Paragraph 31.A. Such insurance must be approved by DFD. The company providing the insurance must be lawfully authorized to do business in Wisconsin and/or be approved by DFD with a minimum A.M. Best rating of (A-). The General Prime Contractor shall provide the following insurance:
1. Worker's Compensation Insurance:
 - a. The General Prime Contractor shall procure and maintain during the life of this Contract, and shall require all Subcontractors, including MEP Subcontractors and Non-MEP Subcontractors, to maintain, Worker's Compensation Insurance as required by State of Wisconsin Statutes and any applicable Federal Act coverage such as the Longshoremen's and Harbor Workers Act, the Jones Act or the Admiralty Act for all employees engaged in Work associated with the Project under this Contract. Minimum coverage is listed in paragraph 31.A.5.
 - b. The General Prime Contractor shall procure and maintain during the life of this Contract, and shall require all Subcontractors, including MEP Subcontractors and Non-MEP Subcontractors, to maintain, Employer's Liability Insurance. Minimum coverage is listed in paragraph 31.A.5.
 2. Commercial General Liability Insurance and Excess Liability-Umbrella:
 - a. The General Prime Contractor shall maintain during the life of this Contract, and until two years after completion of this Contract, Commercial General Liability Insurance, including Products and Completed Operations for all claims that might occur in carrying out the Contract. Minimum coverage is listed in paragraph 31.A.5. Such coverage shall be of the "occurrence" type form.
 - b. The General Prime Contractor's Commercial General Liability and Umbrella Insurance shall apply to the provisions of indemnity obligations under Section 37 of these General Conditions.

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- c. Such Commercial General Liability coverage shall include employees of the General Prime Contractor as insureds.
 - d. The General Prime Contractor shall require Subcontractors to procure and maintain Commercial General Liability Insurance and Excess Liability equal to that required in subparagraph 31.A.2.a. The General Prime Contractor shall require each MEP Subcontractor to procure and maintain Commercial General Liability and Umbrella Insurance equal to that required in subparagraph 31.A.2.a. However, the General Prime Contractor may insure the activities of the Non-MEP Subcontractor(s) in the General Prime Contractor's policy. The General Prime Contractor's policy shall include coverage for Independent Contractors.
3. Auto Liability Insurance:
- a. The General Prime Contractor shall procure and shall maintain during the life of the Contract Commercial Automobile Liability Insurance for all owned, non-owned, and hired vehicles that are used in carrying out the Contract. Minimum coverage is listed in paragraph 31.A.5.
 - b. The General Prime Contractor shall require each Subcontractor, including MEP Subcontractors and Non-MEP Subcontractors, to procure and maintain Commercial Auto Liability Insurance equal to that required in paragraph 31.A.3.a of the General Conditions.
4. The minimum required limits do not represent the coverage and limits necessary to protect the General Prime Contractor. The limits should not be construed in any way to limit the General Prime Contractor's liability to the State.

5. Minimum Limits Required:

TYPE	Limits
Commercial General Liability	\$1,000,000 General Aggregate (applies per project)
	\$1,000,000 Products Aggregate
	\$1,000,000 Personal Injury
	\$1,000,000 Each Occurrence
	\$50,000 Fire Damage
	\$5,000 Medical Expense Per Person
Automobile Liability	\$1,000,000 Combined Single Limit
Excess Liability Umbrella	\$5,000,000 Each Occurrence
	\$5,000,000 Aggregate

Worker's Compensation/Employers Liability Insurance

- 1. State: Statutory to all states the work is being performed;
 - 2. Federal: As Applicable;
 - 3. All Employees, partners, individuals, any managers on project site must be included for coverage.
6. The Commercial General Liability and Umbrella policies described in paragraph 31.A.2. of the General Conditions shall include the State as an Additional Insured as respects the activities carried out under this Contract. Additional coverage on the General Prime Contractor's Umbrella policy can be used to make up the required limits.
7. Proof of Insurance: The General Prime Contractor shall provide a certificate of insurance to DFD from a company lawfully authorized to do business in the State of Wisconsin indicating coverage is in place at the limits set forth in this Article. The insurer shall give DFD thirty (30) day notice of cancellation or changes in coverage. The insurance certificate shall be provided before commencement of the Contract. If the General Prime Contractor is self-insured, audited financial records will need to be provided that clearly demonstrate

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the financial ability to cover losses up to the limits of insurance required. The General Prime Contractor shall also be required to disclose deductibles or Self-Insured Retention's (SIR).

8. Commercial General Liability and Auto Liability carried under Article 31 shall contain a provision making it primary and non-contributory to any other coverage available to the State.
- B. The State shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of Wisconsin, Builder's Risk insurance in the amount of, at least, the initial Contract sum as well as subsequent modifications thereto for the entire Work at the site on a replacement cost basis.
1. Property Insurance shall include insurance for physical loss or damage to the Work, temporary buildings, and equipment or material consumed in the construction of the Work.
 2. Off-Site and Transit Coverage: Upon the request of the General Prime Contractor and written approval of DFD, the Property Insurance policy, subject to policy terms, definitions, and conditions, will provide a \$250,000 limit for materials and/or Work stored off the site or in transit. It is the General Prime Contractor's responsibility to insure materials and/or Work in excess of this amount. The State will not be responsible for materials or completed Work under the care, custody, and control of the manufacturer prior to delivery;
 3. Deductible: The property insurance shall be written with a deductible sum of no more than \$10,000 for each occurrence. If the Contract value is less than \$1,000,000 and the loss is attributable to the General Prime Contractor, a Subcontractor, including MEP Subcontractor or Non-MEP Subcontractor, a \$5,000 deductible per occurrence will apply. The risk of loss within the deductible amount will be borne by the General Prime Contractor;
 4. Loss of Use Insurance: The State, at DFD's option, may maintain such property insurance as will insure the State against loss of use of the State's property due to fire or other hazards, however caused. Except as set forth in section C.2. below, DFD waives all rights of action against the General Prime Contractor for loss of use of the State's property, including consequential losses due to fire or other hazards covered by the Property Insurance described in subparagraph 31.B.1
 5. Policy Review: A copy of the property insurance policy or policies may be obtained pursuant to the Public Records and Property Provisions of the Wisconsin State Statutes.
- C. 1. The State and General Prime Contractor waive all rights against each other and shall require its insurers to waive any rights of subrogation or recovery, for damages caused by fire or other perils to the extent covered by property insurance obtained pursuant to this Article 31 or other property insurance applicable to the Work. The policies shall provide such waivers of subrogation by endorsement or otherwise, except as set forth in C.2. below. A waiver of subrogation shall be effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise; did not pay the insurance premium directly or indirectly; and whether or not the person or entity had an insurable interest in the property damaged. This waiver shall be effective only to the extent any policy of insurance is not impaired thereby. This contract provision shall be incorporated into the contracts between the General Prime Contractor, MEP Subcontractors, and Non-MEP Subcontractors.
2. DFD retains the right to subrogate against General Prime Contractor, Subcontractors including MEP Subcontractor and Non-MEP Subcontractor(s), up to \$1,000,000 per occurrence, for damage to property, including loss of use thereof, provided said property damage is to work performed by other parties and provided said General Prime Contractor's, Subcontractors' including MEP Subcontractors', and Non-MEP Subcontractors', negligence contributed in any way to said damage. This contract provision shall be incorporated into the contracts between the General Prime Contractor and Subcontractors, including MEP Subcontractors, and Non-MEP Subcontractors.

32. NONDISCRIMINATION/AFFIRMATIVE ACTION

- A. In connection with the performance of Work under this Contract, the General Prime Contractor agrees not to discriminate against any employee or applicant for employment because of age, race, religion, color, handicap, sex,

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physical condition, developmental disability as defined in Wis. Stat. §51.01(5), sexual orientation, national origin, or any other basis prohibited by law. This provision shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training. Except with respect to sexual orientation, the General Prime Contractor further agrees to take affirmative action to ensure equal employment opportunities. This contract provision shall be incorporated into the contracts between the General Prime Contractor, MEP Subcontractors, and Non-MEP Subcontractors.

- B. Contracts with a value of thirty thousand dollars (\$50,000) or more require the General Prime Contractor to submit a written affirmative action plan acceptable under Wisconsin Statutes and Administrative Code. An exemption occurs from this requirement if the General Prime Contractor has a Work force of less than thirty (50) employees. The General Prime Contractor is responsible for obtaining affirmative action compliance from MEP Subcontractors and Non-MEP Subcontractors. Instructions on satisfying these requirements will be sent with the Notice to Proceed. Technical assistance regarding this Article 32 is available from the Wisconsin Office of Contract Compliance, telephone (608) 266-5462.
- C. The General Prime Contractor should establish and take appropriate initiatives to reach goals and timetables for minority and female utilization which shall be based on appropriate work force, demographic, or other relevant data which shall cover construction projects or construction contracts performed in specific geographical areas. The goals shall be applicable to the General Prime Contractor's, MEP Subcontractor's, or Non-MEP Subcontractor's entire work force which is working in the area covered by the goals. The goals are established and are as follows:

County	Women Goal	Minority Goal
Adams/Juneau/Monroe/Vernon	12%	2%
Ashland/Bayfield/Douglas/Price	9%	6%
Barron/Sawyer/Washburn	13%	4%
Brown	11%	9%
Buffalo/Jackson/Pepin/Trempealeau	12%	5%
Burnett/Polk	11%	2%
Calumet/Winnebago	11%	3%
Chippewa/Rusk	12%	2%
Clark/Taylor	16%	2%
Columbia	12%	2%
Crawford/Grant/Richland	14%	2%
Dane	9%	9%
Dodge	12%	3%
Door/Kewaunee/Manitowoc	13%	3%
Dunn/Eau Claire	11%	3%
Florence/Forest/Marinette/Oconto	13%	2%
Fond du Lac	11%	4%
Green/Iowa/LaFayette	13%	1%
Green Lake/Marquette/Waushara	10%	4%
Iron/Oneida/Vilas	9%	3%
Jefferson	12%	4%
Kenosha	7%	10%
La Crosse	10%	4%
Langlade/Lincoln/Menominee/Shawano	11%	7%
Marathon	12%	4%
Milwaukee	10%	29%
Outagamie	10%	5%
Ozaukee	8%	3%
Pierce/St Croix	12%	2%
Portage	13%	3%
Racine	8%	13%

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Rock	11%	7%
Sauk	10%	2%
Sheboygan	14%	5%
Walworth	10%	8%
Washington	9%	3%
Waukesha	7%	4%
Waupaca	11%	2%
Wood	12%	2%
Source: Combined Occupation Distribution: 2000 Census		

- D. Neither the provisions of any collective bargaining agreement, nor the failure by a union with whom a General Prime Contractor has a collective bargaining agreement, to refer to either minorities or women shall excuse the General Prime Contractor's required initiatives under these specifications.
- E. The General Prime Contractor agrees to post in conspicuous places, available for employees and applicants for employment, a notice to be provided by the State that sets forth the provisions of this Article 32.
- F. Failure to comply with the conditions of this Article 32 may result in the General Prime Contractor becoming declared an "ineligible" General Prime Contractor, termination of the Contract, or withholding of payment.

33. MINIMUM WAGES

- A. The General Prime Contractor shall post, at an appropriate conspicuous point on the site of the Project, a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to be engaged in Work on the Project under this Contract and all deductions, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics so engaged.
- B. Wage determinations required by State Law are listed in the Supplementary General Conditions.
- C. If, after the award of the Contract, it becomes necessary to employ any person in a trade or occupation not classified in the wage determinations, such person shall be paid at not less than such rate as shall be determined by the Department of Workforce Development. Such approved minimum rate shall be retroactive to the time of the initial employment of such person in such trade or occupation. The General Prime Contractor shall notify DFD of the General Prime Contractor's intention to employ persons in trades or occupations not classified in sufficient time for DFD to obtain approved rates for such trades or occupations.
- D. The specified wage rates are minimum rates only, and DFD will not consider any claims for additional compensation made by the General Prime Contractor because of payment by the General Prime Contractor of any wage rate in excess of the applicable rate contained in this Contract. Any disputes in regard to the payment of wages in excess of those specified in this Contract shall be adjusted by the General Prime Contractor.
- E. Failure to comply with the conditions of this Article 33 may result in the General Prime Contractor becoming declared an "ineligible" Contractor, termination of the Contract, or withholding of payment.

34. ASSIGNMENTS

- A. The General Prime Contractor shall not assign the whole or any part of this Contract or any moneys due or to become due hereunder without the prior written consent of DFD. In case the General Prime Contractor assigns all or any part of any moneys due or to become due under this Contract, the instrument of assignment shall contain an Article substantially to the effect that it is agreed that the right of the assignee in and to any moneys due or to become due to the General Prime Contractor shall be subject to prior claims of all persons, firms, and corporations for services rendered or materials supplied for the performance of the Work called for in this Contract and subject to the terms of this Contract and claims of offset by the State.
- B. On the date of Substantial Completion, the General Prime Contractor shall assign to the State all warranties and guarantees of labor or material incorporated into the Work which are provided by third party vendors, suppliers, manufacturers, and Subcontractors, including MEP Subcontractors or Non-MEP Subcontractors.

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35. ANTITRUST AGREEMENT

The General Prime Contractor and the State recognize that in actual economic practice, overcharges resulting from antitrust violations are in fact usually borne by the State. Therefore, the General Prime Contractor hereby assigns to the State 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 the price is established under this Contract and any Change Order thereto.

36. INDEMNIFICATION

- A. To the fullest extent permitted by law, and in addition to any other indemnification provisions provided for herein, the General Prime Contractor shall indemnify and hold harmless the State, the A/E and its agents and employees and any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is (1) attributable to bodily injury, sickness, disease or death, or to injury to or destruction of property, including loss of use resulting therefrom, and (2) is caused in whole or in part by acts or omissions of the General Prime Contractor, a Subcontractor thereof, a MEP Subcontractor, a Non-MEP Subcontractor thereof, anyone directly or indirectly employed by any of them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist as to a party or person described in this section.
- B. The obligations of the General Prime Contractor under this indemnification shall not extend to the liability of the State, the A/E and its agents or employees thereof arising out of (1) preparation or approval of maps, drawings, opinions, reports, surveys, change orders, designs or specifications, or (2) the giving of or the failure to give directions or instructions by DFD, or the A/E or its agents or employees thereof provided such giving or failure to give is the cause of the injury or damage.

37. GENERAL PRIME CONTRACTOR PERFORMANCE EVALUATION

- A. The General Prime Contractor acknowledges that following completion of the Work, DFD's Project Representative will evaluate the General Prime Contractor's performance under and pursuant to this Contract. Such evaluation may take place after Substantial Completion or after Final Completion of the Work, as determined by DFD's Project Representative. The purpose of such evaluation includes, but is not limited to, determining whether or not the General Prime Contractor responsibly performed its Contractual obligations and whether or not the best interests of the State were promoted thereby.
- B. DFD shall provide a copy of any such performance evaluation to the General Prime Contractor, as soon as practicable after completion of such evaluation.
- C. The General Prime Contractor may appeal results of the General Prime Contractor's performance evaluation completed by DFD's Project Representative by submitting a request for performance review to the Administrator of the Division of Facilities Development. Any such request must include the reasons for such request, and documentation necessary to substantiate the General Prime Contractor's claim that initial performance evaluation was inappropriate or otherwise in error. The Administrator shall notify the General Prime Contractor of the results of this review as soon as practicable.
- D. DFD reserves the right to waive the results of such performance evaluation(s) if, in the opinion of DFD, corrective action has been taken to remediate substandard performance, events beyond the control of the General Prime Contractor resulted in substandard performance, or the best interests of the State will be served.
- E. The General Prime Contractor acknowledges and agrees that such evaluation(s) may be used by DFD pursuant to Wis. Stat. § 16.855(9m) when determining whether the General Prime Contractor is a "qualified responsible bidder" for future Project(s); provided, however, any such evaluation made more than five (5) years prior to the submission of any such subsequent bid shall not be considered in any event.
- F. The General Prime Contractor acknowledges and agrees that all such evaluations so prepared by DFD shall constitute "open public records" available for inspection and copying as provided for by law.

1 **SUPPLEMENTARY GENERAL CONDITIONS** (Rev 10/2014)

2 Division Project No. 120616

3

4 **INDEX**

5

6 1. Definitions

7 2. Insurance

8 3. Schedule of Occupational Classifications and Minimum Hourly Wage Rates

9

10 1. **DEFINITIONS**

11 General Conditions, Article 2.B. shall be supplemented with the following:

12

13 Architect/Engineer (A/E) for this project: **E Drive Design, 1415 Engineering Dr., Madison, WI 53706**

14

15 2. **INSURANCE**

16 General Conditions, Article 31.A.(4), shall be supplemented with "special hazard" coverage as follows:

17

18 "General Prime Contractor's, MEP Subcontractor's and Subcontractor's Public Liability and Property
19 Damage Insurance shall provide adequate protection against the following special hazards, unless provided
20 as part of Comprehensive General Liability coverage: loading and unloading; excavating; filling; drilling;
21 blasting; explosions; demolition; underpinning; elevator; hoist. Coverages shall be in the amounts
22 specified in Article 31 of the General Conditions."

23

24 3. **SCHEDULE OF OCCUPATIONAL CLASSIFICATIONS AND MINIMUM HOURLY
25 WAGE RATES**

26

27 General Conditions, Article 33.B. Pursuant to s.103.49(6), Wis. Stats., the listing of trades or occupations
28 together with the minimum hourly wage determination, are not required for this project.

29

30 ***

31

32

33

DIVISION 1 - GENERAL REQUIREMENTS (Rev 10/2014)

Division Project No. 120616

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5. Hazardous Substances - Asbestos, Lead and Polychlorinated Biphenyls (PCB'S)
6. Soil Test Borings
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1. DEFINITIONS

In this document, the following terms are defined as:

(a) "Mechanical, electrical, or plumbing subcontractor" ("MEP Subcontractor") is a contractor that performs mechanical (Heating, Ventilating, and Air Conditioning), electrical, plumbing, or fire protection (fire suppression) work for the Project, and enters into a contract with the General Prime Contractor to perform their division of work.

(b) "Qualified bidder" means a contractor that the department certifies under Wis. Stat. s. 16.855(9m)(b)1.

(c) "Qualified responsible bidder" means a contractor who is a qualified bidder and who is a responsible bidder.

(d) "Responsible bidder" means a contractor that the department certifies under Wis. Stat. s. 16.855(9m)(b)2.

(e) "Single prime contracting" means bidding and contracting through a process in which only a general prime contractor has a contractual relationship with the state and all mechanical, electrical, or plumbing subcontractors are identified by the department and are subcontractors to the General Prime Contractor.

(f) "General Prime Contractor" is a contractor that enters into a contract with the state to perform all work as required by the Contract Documents and enters into contracts with subcontractors including MEP Subcontractors identified by DFD.

(g) "Non-MEP Subcontractor" is a subcontractor to a General Prime Contractor in divisions of work other than mechanical, electrical, plumbing, and fire protection. This includes suppliers and installers to the General Prime Contractor.

(h) "Subcontractor" is all subcontractors on a project. This includes MEP Subcontractors, subcontractors to the MEP Subcontractors, and Non-MEP Subcontractors.

(i) "Contractor" is all contractors working on a project regardless of contractual relationship. This includes the General Prime Contractor, MEP Subcontractors, Non-MEP Subcontractors, and all Subcontractors, regardless of tier of subcontract.

2. GENERAL

All articles in these General Requirements are applicable to all Divisions and Sections of the Work included herein. The Conditions of the Contract, General and Supplementary General Conditions, and these General Requirements shall apply with equal force and effect to the General Prime Contractor and all Subcontractors engaged in this work.

Contractor or the Contractor's authorized representative must be present to accept delivery of all equipment and material shipments. DFD's representatives will not knowingly accept, unload or store anything delivered to the site for the Contractor's use. Inadvertent acceptance of delivered items by any representative or employee of the State shall not constitute acceptance or responsibility for any of the materials or equipment. It is the Contractor's responsibility to assume liability for equipment or material delivered to the job site.

3. SPECIAL SITE CONDITIONS

Confine all operations, equipment, apparatus and storage of materials, to the immediate area of work to the greatest possible extent. Contractor shall ascertain, observe and comply with all rules and regulations in effect on the project site, including but not limited to parking and traffic regulations, use of walks, security restrictions and hours of allowable ingress and egress. Any special traffic control during construction involving lane closures shall be in accordance with the federal standard, Manual of Uniform Traffic Control Devices.

The Contractor shall take all measures necessary to become acquainted with the location of underground service, utilities, structures, etc., which may be encountered or be affected by the Contractor's work, and shall be responsible for damage caused by neglect to provide proper precautions or protection. As a minimum to become acquainted with such underground appurtenances, the Contractor shall: 1) Observe existing conditions visible at the site immediately prior to commencement of work; 2) Review available site

plans incorporated in the contract documents and/or provided by the DFD Project Representative; 3) Final check with the DFD Project Representative for additions to or changes from conditions indicated on site plans for the facility; and 4) Obtain input from the "one-call system", the organization composed of all suppliers of utilities/services to or from the site.

Information pertaining to existing conditions that are described in the specifications or appear on the drawings, is based on available records. While such data has been collected with reasonable care, there is no expressed or implied guarantee that conditions so indicated are entirely representative of those actually existing. This information is provided to inform the Contractor of known, existing conditions so that due diligence is taken by the Contractor to avoid damage. Where site observation or documents indicate existing underground utilities/services in close proximity (within four feet horizontally and/or four feet vertically) to necessary new construction work, the Contractor shall be responsible to test, probe or otherwise determine exact locations so as to prevent damage to such utilities/services.

Existing pipes, electrical work, and all other utilities encountered, which may interfere with new work, shall be re-routed, capped, cut off, or replaced by the Trades having jurisdiction, in accordance with the Bidding and Contract Documents.

Foundations are designed for soil pressure indicated. Because of variation in bearing capacity of the ground, some foundations may have to be revised after excavation has been completed. DFD's Project Representative's approval to proceed with foundation work must be obtained before concrete is poured. Changes in the work due to revisions of foundations because of unsatisfactory soil conditions will be classed as additional work.

[Note to Architect/Engineer: In accordance with Wisconsin Statute 182.0175(2), the architectural, mechanical and electrical designers are responsible to determine the location and condition of existing systems and components and indicate how existing systems and components are to be re-routed, protected from, and/or connected to the proposed work. The designers must use this information to appropriately revise the Division 1-General Requirements master specifications provided by Division of Facilities Development stated herein.

This section must include specific information about occupancy and scheduling for systems shutdown and how they affect this work. Information must also be given disclosing the location and condition of anything required to make these connections possible. For example: are there isolation valves where they are needed and if so, do they work? Everything possible must be done to eliminate unknowns from the bidding documents.

These things are part of the discovery and planning process for design and must be covered adequately in the documents to facilitate intelligent bidding and to avoid arguments and delays during construction. The designer may need to utilize the "one-call system" or a private locator service to facilitate this discovery and planning process.]

4. INSPECTION OF SURFACES

Contractor shall obtain complete data at the site and inspect surfaces that are to receive the Work before proceeding with fabricating, assembling, fitting or erecting any work under this contract.

Contractor shall notify DFD's Project Representative in writing in case of discrepancies between existing work and drawings, and of any defects in such surfaces that are to receive the Contractor's work. DFD's Project Representative will evaluate the notice and direct what remedial action will be taken.

Starting of work implies acceptance of existing work or the work of others. Removal and replacement of work applied to defective surfaces, in order to correct defects, shall be done at the expense of the Contractor who applied work to defective surfaces.

5. HAZARDOUS SUBSTANCES - ASBESTOS, LEAD AND POLYCHLORINATED BIPHENYLS (PCB'S)

Airborne asbestos fibers, lead, and PCB compounds, if encountered, have been determined to be hazardous to one's health. Compliance with all possible applicable regulations is the Contractor's responsibility. Contractor shall not provide or install any product that contains any amount of asbestos or PCB. See General Requirements, CLEANING AND WASTE DISPOSAL for disposal of hazardous waste, if encountered.

ASBESTOS

Contractor's attention is directed to WAC NR 447, WAC DSS 159 and the Occupational Safety and Health Act (OSHA) in general, part 1926.1101--ASBESTOS in particular. Contractor is responsible for compliance with all applicable regulations when the work includes fastening to or coring through Asbestos Containing Materials (ACM) and disturbance of asbestos containing caulking and mastics. Unless otherwise indicated, all caulking, sealants, glazing compounds, gaskets, asphalt roofing materials and miscellaneous adhesives are assumed to contain asbestos and are considered to be Category I non-friable ACM as defined in NR 447. Waste material containing Category I non-friable ACM, is regulated as Construction and Demolition (C&D) waste and may be disposed of at a Department of Natural Resources (DNR) approved C & D waste landfill. If Contractor's work methods cause non-friable ACM to become friable, the Contractor is responsible for the disposal of the friable asbestos waste at a landfill specifically approved by DNR to accept friable asbestos. A copy of the signed waste manifest for the disposal of all friable asbestos waste shall be provided to DFD prior to request for final payment.

The regulations referenced above require removal of friable ACM and Category II non-friable ACM prior to demolition of a building. Category I non-friable ACM does not need to be removed from a building prior to demolition if the waste generated from the demolition is taken to a DNR approved C & D waste landfill. If the contractor chooses to recycle building materials from a building to be demolished, the contractor is responsible for removal and disposal of all Category I non-friable ACM in accordance with applicable regulations prior to demolition. If the contractor's demolition methods will cause non-friable ACM to become friable, the contractor is responsible for removal and disposal of all Category I non-friable ACM in accordance with applicable regulations prior to demolition.

The following building materials have been identified to be ACM.

The following building materials have been identified to be non-ACM.

Lead Based Paint

Paint is assumed to contain lead. Conform to OSHA and EPA recommended worker safety requirements when removing lead based paint or material bearing lead based paint or material contaminated with lead by the demolition process. Contractor's attention is directed to the Occupational Safety and Health Act (OSHA) in general and particularly to 29 CFR 1910 (LEAD STANDARD) and to CFR 1926 (LEAD EXPOSURE IN THE CONSTRUCTION INDUSTRY). Dispose of refuse containing lead based paint or contaminated with lead by the demolition process in conformance with State of Wisconsin Hazardous Waste Regulations set forth by the Department of Natural Resources and in conformance with OSHA and EPA recommended worker safety requirements.

PCB'S

Contractor's attention is directed to Wisconsin Administrative Code, Chapter NR 157 relative to PCB's. Refer to Division 26, Electrical within these specifications for work involving PCB's.

1
2 **6. SOIL TEST BORINGS**

3 Test borings have been made and boring data has been provided; however, these records do not form a part
4 of the Contract Documents, but are provided for information only.
5

6 Neither the Architect/Engineer nor DFD guarantee continuity of conditions indicated at the boring
7 locations.
8

9 Contractor must interpret the soil boring data and be satisfied as to the materials to be excavated and
10 materials upon which fill or other materials may be placed.
11

12 **7. MUTUAL RESPONSIBILITY**

13 Contractor(s) shall coordinate the work with adjacent work and shall cooperate with all other trades to
14 facilitate the general progress of the work. Each trade shall afford all other trades every reasonable
15 opportunity for the installation of their work and for the storage of their material. In no case will the
16 Contractor(s) be permitted to exclude from the premises or work, any other Contractor or employees
17 thereof, or interfere with any other Contractor in the executing or installation of their work.
18

19 Contractor(s) shall arrange the work and dispose of materials so as not to interfere with the work or storage
20 of materials of others and each shall join their work to that of others in accordance with the intent of the
21 drawings and specifications.
22

23 All Contractors shall work in cooperation with the General Prime Contractor and with each other, and fit
24 their work into the structure as job conditions may demand. All final decisions as to the right-of-way and
25 run of pipe, ducts, etc., shall be made by DFD at prearranged meetings with responsible representatives of
26 the Contractors involved.
27

28 **8. PROJECT MEETINGS**

29 Project meetings will be held at the time designated by DFD. Contractor, when requested, shall attend
30 these meetings. If the principal of the firm does not attend meetings, a responsible representative of the
31 Contractor who can bind the Contractor to a decision at the meetings shall attend.
32

33 The Architect/Engineer or a representative thereof will write a report covering all items discussed and
34 decisions reached and copy of such report distributed to all parties involved.
35

36 **9. SLEEVES AND OPENINGS**

37 Each Contractor requiring sleeved openings shall furnish all sleeves required for their penetrations whether
38 or not they responsible for providing the respective openings. Contractors furnishing sleeves to others for
39 installation shall do this in a timely manner so as not to impede the project schedule.
40

41 Openings shown on the structural and/or architectural drawings shall be the responsibility of the General
42 Prime Contractor. Sleeves furnished by other contractors for openings shown on the structural and/or
43 architectural drawings shall be installed by the General Prime Contractor.
44

45 Openings that are required and are not shown on the structural and/or architectural drawings shall be the
46 responsibility of the contractor requiring the openings. The contractor requiring the opening shall install
47 sleeves for these openings or cut openings as needed (including floor openings within chases).
48

49 Individuals skilled in such work shall accomplish installation of sleeves and openings.
50

51 Each Contractor shall be responsible for coordinating locations of their sleeves with work of other trades.
52

53 Each Contractor who requires sleeves and/or openings shall submit through the General Prime Contractor,
54 to DFD's Project Representative for review and approval, layout drawings of all such required sleeves

1 and/or openings. Sleeve and opening layout drawings shall be received by DFD a minimum of two weeks
2 prior to installation of the sleeves and openings. Sleeve and opening sizes and locations shall be
3 dimensioned from column lines and floor elevations or from a point of reference approved by DFD.

4 5 **10. CUTTING AND PATCHING**

6 Provisions of Article 9. Sleeves and Openings herein, cover the work involved for providing and installing
7 sleeves and openings.

8
9 Cutting and patching required to access work in existing walls, in chases, above inaccessible ceilings,
10 below floors, etc., shall be by the Contractor who requires the access, unless shown on the bid documents
11 otherwise or noted otherwise.

12
13 The Contractor shall do all cutting, or fitting of the work as required to make its several parts fit together,
14 or to receive the work of others, as shown or reasonably implied by the drawings or specifications, or as
15 may be directed by DFD. Holes cut in exterior walls and/or roofs shall be waterproofed.

16
17 The Contractor who cuts shall also be responsible for patching. Where cutting and patching is required, the
18 Contractor shall hire individuals skilled in such work to do cutting and patching.

19
20 The Contractor who removes or relocates building components which leaves a remaining opening shall be
21 responsible for patching the opening.

22
23 Patching includes repairing openings to match adjacent construction and painting the surface to match
24 existing. Painting means covering the entire wall where patching is to be done to nearest break point or
25 corner unless indicated to be done by other trades.

26
27 Contractor shall not endanger any work by cutting, digging or otherwise and shall not cut or alter the work
28 of others without their consent.

29
30 Do not pierce beams or columns without permission of DFD and then only as directed in writing. If any
31 ductwork, piping, conduit, etc. is required through walls or floors where no sleeve has been provided, use a
32 core drill or saw cut to prevent damage and structural weakening.

33
34 Wherever any material, finish, or equipment, is damaged, the skilled trade shall accomplish the repair or
35 replacement, in that particular work and the cost shall be charged to the party responsible for the damage.
36 DFD reserves the right to disallow any means and/or methods that, in the opinion of DFD, are harmful to
37 and/or not in the best interest of preserving the improvements receiving the work.

38 39 **11. MANUFACTURER'S DIRECTIONS**

40 Contractors shall apply, install, connect, erect, use, clean and condition manufactured articles, materials,
41 and equipment as recommended by the manufacturer, unless specified to the contrary. The manufacturer's
42 latest recommendations at the time of bidding shall be used.

43 44 **12. LAYOUT**

45 The General Prime Contractor shall immediately upon entering the site for purpose of beginning work,
46 locate general reference points and take such action as is necessary to prevent their destruction. Each
47 Contractor shall lay out its work and be responsible for all lines, elevations and measurements of the
48 building and other work executed under its Contract. Each Contractor must exercise proper precaution to
49 verify dimensions on the drawings before laying out work and will be held responsible for any error
50 resulting from failure to exercise such precaution.

51
52 Using datum furnished by the State, the lot lines and present levels have been established as shown on the
53 drawings. Other grades, lines, levels and benchmarks, shall be established and maintained by each
54 Contractor, who shall be responsible for them.

1
2 As work progresses, the General Prime Contractor shall lay out on forms and floor, the locations of all
3 partitions, walls and fix column centerlines as a guide to all trades.
4

5 The General Prime Contractor shall make provision to preserve property line stakes, benchmarks, or datum
6 point. If any are lost, displaced or disturbed through neglect of any Contractor, Contractor's agents or
7 employees, the Contractor responsible shall pay the cost of restoration.
8

9 Each Contractor shall verify grades, lines, levels, locations and dimensions as shown on drawings and
10 report any errors or inconsistencies to DFD 's Project Representative before commencing work. Starting of
11 work by each Contractor shall imply acceptance of existing conditions.
12

13 **13. SUPERVISION**

14 The General Prime Contractor shall take complete charge of the work under this contract and coordinate
15 the work of all Trades on the project.
16

17 **14. FIELD OFFICES**

18 The General Prime Contractor shall provide and maintain a temporary watertight office where directed for
19 use by the Contractor and Trades. The office shall be equipped with a plan rack and suitable table for
20 examination of plans.
21

22 The General Prime Contractor shall also provide and maintain a temporary office for the sole use of
23 Architect/Engineer and DFD 's Project Representative. The office shall be at least 150 square feet in floor
24 area, equipped with a plan rack, 3'-0" x 8'-0" smooth sloped top table, flat top desk, three chairs, and a four-
25 drawer legal size metal filing cabinet equipped with a workable lock.
26

27 Exterior of offices shall be of neat appearance, and if deemed necessary by DFD, shall be painted to
28 achieve such appearance; heat offices during cold weather; provide each office with at least one glazed
29 movable window and one door with a cylinder lock and latch set.
30

31 Provide and maintain artificial light, minimum of 40 foot-candles, and two duplex outlets where directed.
32 Provide screen door and window screens if requested. When directed, move the office into a suitable area
33 in the building.
34

35 If other offices are provided, they will be located as agreed to by the Contractor and approved by DFD.
36

37 A mobile type office with equivalent space and equipment may be used if Architect/Engineer and DFD 's
38 Project Representative have a separate office and separate entrance.
39

40 **15. STAIRS AND SCAFFOLDS**

41 The General Prime Contractor shall:
42

43 Furnish and maintain equipment such as temporary stairs, fixed ladders, ramps, chutes, runways and the
44 like as required for proper execution of work by all trades, and shall remove them on completion of the
45 work.
46

47 Erect permanent stair framing as soon as possible. Provide stairs with temporary treads, handrails, and
48 shaft protection.
49

50 Contractors requiring scaffolds shall make arrangements with the General Prime Contractor, or shall
51 provide their own and remove them on completion of the work.
52

53 Each Contractor shall underlay its interior scaffolds with planking to prevent uprights from resting directly
54 on the floor construction.

1
2 **16. HOISTS, ELEVATORS OR CRANES**

3 Each separate contractor shall provide and pay for its own hoist/crane or other apparatus necessary for
4 unloading/setting or moving their equipment and materials. Installation and removal of equipment for this
5 activity must be accounted for in the Project Schedule.
6

7 Equipment and operations for this activity shall comply with applicable Department of Safety and
8 Professional Services and OSHA requirements. No material hoist may be used to transport personnel
9 unless it meets Department of Safety and Professional Services and OSHA requirements for that purpose.
10

11 Contractors shall provide any protection required, temporary or long term, to prevent damage to work in
12 place or in progress. When hoisting activity results in such damage, the responsible contractor shall pay for
13 cleaning, repair or replacement of material or equipment as determined by DFD.
14

15 Equipment, that imposes loads of any kind on work in place, shall not be erected without agreement from
16 DFD.
17

18 At their own discretion, two or more contractors may agree to use common hoisting facilities. Under such
19 arrangements, the allocation of costs, access and scheduling and all other details of the agreement are the
20 responsibility of the contractors involved.
21

22 Existing elevators may be used on a limited basis with DFD's permission and agreement. Costs of
23 warranty extensions and additional service work required will be paid by the using contractor. Appropriate
24 protection must be provided by the using contractor and that contractor shall be responsible for any
25 structural, mechanical or finish damage to the elevator and its parts and to adjoining building finishes and
26 components.
27

28 **17. SIGNS**

29 The General Prime Contractor shall provide a job sign constructed of 3/4" thick exterior grade plywood.
30 The size, colors and content shall conform to job sign detail which is included as an appendix to these
31 General Requirements. The General Prime Contractor shall order, paint and erect the sign. The sign shall
32 be placed on the property where directed and shall be maintained for the duration of the construction
33 period.
34

35 No individual advertising signs, plaques or credits, temporary or permanent, will be permitted on the
36 building or premises, except the name of the Contractor on Contractor's office or material shed.
37

38 **18. FENCE**

39 The General Prime Contractor shall provide a neat appearing protective fence where indicated on the
40 drawing, constructed of standard studded T-Posts of sufficient length for line posts and spaced not to
41 exceed 8'-0" apart. Corner posts and gate posts are to be galvanized steel pipe of not less than 2 1/2" o.d.
42 and shall be properly braced. A 4-foot high wooden snow fence shall be securely fastened to the supports.
43 Plastic fencing is not acceptable. The snow fence shall project 4" above the fence posts. Provide gates,
44 properly constructed and braced, complete with hinges, hasps, and padlocks in number and location
45 required for proper control, delivery and distribution of material and equipment. Gate posts shall be
46 adequately back tied and anchored to insure a rigid installation. All protective fencing shall be maintained
47 in an upright, orderly fashion throughout the construction schedule. In areas where existing trees are to be
48 protected, the area inside the protective fencing shall not be used for any purpose related to construction
49 activities, such as material storage, vehicle parking, portable toilets, or other disruptive activities that would
50 result in damage of any kind to the site inside the fence.
51

52 **19. ROADWAY**

53 The General Prime Contractor may build a temporary roadway for delivery of materials at the Contractor's
54 own expense and maintain it until completion of construction or until service drives are installed. Where

possible, build temporary roadway within the confines of the new roadway and allow others to use it at no cost. Any gravel topping used for temporary roadway shall be at least 6" below finished elevation of permanent drives. If temporary roadway is not intended to be converted to a permanent road, all road materials shall be removed upon termination of access need, and the confines of the temporary roadway shall be repaired to match adjacent area.

20. TOILETS

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

As soon as conditions will allow, the Plumbing Trade shall provide temporary toilets within the building, where directed, and equip the room with at least two temporary water closets and one temporary lavatory, each with connections to cold water and sanitary sewer. The General Prime Contractor shall provide a temporary wood enclosure with doors; remove when directed.

After directed by DFD's Project Representative, the Plumber shall remove the temporary fixtures and replace them with permanent fixtures.

After temporary toilet accommodations are provided within the building, the General Prime Contractor shall remove the temporary outside toilets.

The General Prime Contractor shall maintain the temporary toilets in a sanitary condition at all times and shall supply toilet paper until completion of the job.

21. TELEPHONES

It is expected that each contractor have access to their own cell phone for their own use. No additional telephone service will be provided

22. WATER SUPPLY

The General Prime Contractor shall supply all water required for construction and other purposes until the permanent water supply system is accepted and in operation.

Immediately after award of contract, the Plumbing Trade shall make arrangements for temporary connections and extension of existing water service facilities. As soon as possible, the Plumbing Trade shall install the permanent main into the building and provide a temporary gate valve, extend piping, provide temporary water meter, and provide two 3/4" hose bibbs on each floor, located where directed. Permanent risers may be used for temporary service. Provide two 3/4" hose bibbs outside of the building at suitable locations for construction purposes where directed.

The Plumbing Trade shall supply, maintain the installation, and remove it when directed by DFD's Project Representative. The General Prime Contractor shall provide necessary patching of surfaces and structure after such temporary service is removed.

The General Prime Contractor shall prevent waste of water and shall maintain valves, connections, and hoses in perfect condition, at all times. Trades shall provide their own hose or piping from hose bibbs.

The Contractor shall pay cost of water used.

Immediately after award of contract, the Plumbing Trade shall make arrangements to begin underground sewer work and shall complete sewer work, including backfilling required, as soon as possible.

1 **23. TEMPORARY ELECTRICAL WORK**
2

3 The General Prime Contractor shall make all arrangements with the local utility company for metered
4 electrical service, pay for the installation of all temporary service to utility point of termination shown on
5 drawings, and upon completion of project, pay for removal of temporary service. The General Prime
6 Contractor shall patch surfaces and structure after services have been removed. The service shall be
7 120/208 volt, 3 phase, 4 wire, 200 amps,
8

9 If a Contractor contemplates the use of equipment that requires a different voltage or greater capacity than
10 that specified, then that Contractor must arrange with Utility for this additional service and pay for
11 installation of the service and the necessary additional switches and wiring required.
12

13 The meter shall be taken out in the General Prime Contractor's name.
14

15 The General Prime Contractor shall pay for all electrical energy consumed for construction purposes for all
16 trades including temporary offices, for operation of ventilating equipment, for heating of building, and for
17 testing and operating of all equipment. The General Prime Contractor shall continue to pay for energy used
18 until substantial completion even though equipment has been connected to the permanent wiring.
19

20 Any Trade that has a temporary office shall provide and pay for installation of temporary service for
21 lighting of such temporary office.
22

23 The Electrical Trade shall provide meter base and wiring to point of utility termination, provide main fused
24 service switch, and fused or breaker distribution panel(s). The Electrical Trade shall also provide, at no
25 cost to others, all lamps, wiring, switches, sockets and similar equipment required for temporary system
26 until substantial completion. Upon completion of the project, the Electrical Trade shall remove the
27 temporary system.
28

29 The temporary lighting system shall be sufficient to enable all trades to safely complete their work and to
30 enable DFD's Project Representative to check all work as it is being done. Illumination shall be 5 foot-
31 candles minimum in all areas and, in addition, shall meet or exceed the requirements of 29 CFR 1926.56
32 Illumination (OSHA regulations).
33

34 Provide at least one duplex outlet for small power tools for each 400 square feet of floor space, 120 volt
35 single phase. Circuits shall be 20 ampere, single pole.
36

37 In accordance with the latest issue of the National Electrical Code, all temporary electrical circuits for
38 construction purposes shall be equipped with combination ground fault interrupter and circuit breakers
39 meeting the requirements of UL for Class A, Group 1 devices. The ground fault interrupter portion shall be
40 solid state type, insulated and isolated from the breaker mechanism. A test button shall be provided for
41 checking the device. The breaker mechanism shall provide overload and short circuit protection and shall
42 be operated by a toggle switch with overcenter switching mechanism so that contact cannot be held closed.
43

44 All Trades shall furnish their extension cords and lamps other than those furnished for general lighting.
45

46 All Trades and other separate Contractors shall be allowed to use the service provided for general lighting
47 and fractional horsepower hand tools at no cost.
48

49 The General Prime Contractor shall be compensated by those requiring three phase and single-phase energy
50 used for equipment other than fractional horsepower hand tools. Arrangements shall be made with the
51 General Prime Contractor before construction equipment is used.
52

1 The General Prime Contractor shall post the cost rates at start of construction. Rates may be posted on an
2 hourly use basis or energy may be submetered at the General Prime Contractor's option, but shall be based
3 upon a fair and reasonable estimate of the cost of power used as billed by the Utility.

4
5 Those trades requiring lighting or other electrical service outside of building shall pay for the installation
6 and removal of service, maintenance charges, and energy consumed.

7
8 Trades requiring voltage other than basic temporary system specified, three phase power, or a special single
9 phase run, for operation of construction equipment or testing shall make their own arrangements with the
10 General Prime Contractor for cost of energy used, and the Electrical Trade for the cost of installation, and
11 removal when no longer required.

12
13 Heating and Ventilating Trade shall provide wiring, equipment and connections for portable or temporary
14 heating units.

15
16 The Electrical Trade shall expedite the work under this contract in such a manner that the permanent power
17 wiring system and panels will be installed and connected to permanent heating and ventilating equipment in
18 time to operate and test this equipment when the building has been closed sufficiently to permit the use of
19 portions of heating and ventilating system for temporary heating during construction. Permanent wiring
20 and connections may be used at permanent equipment; however, the use of the permanent system during
21 construction shall in no way waive any part of the guarantee period.

22
23 After Substantial Completion of the permanent electrical system and building wiring, permanent
24 receptacles may be used during finishing work. Permanent wiring for lighting fixtures, switches and
25 receptacles shall be installed only after all masonry and plastering has been completed, but this wiring shall
26 not be used for motors larger than fractional HP or for welding equipment. Circuits for larger motors and
27 welding equipment may be provided with special circuits to mains of electrical panels at the expense of
28 those trades requiring them, provided that special permission is obtained from DFD's Project
29 Representative and the installation is made by skilled electricians.

30 31 **24. COLD WEATHER PROTECTION**

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

35
36 Heat required to protect materials from injury due to freezing during the construction period and prior to
37 enclosure, shall be provided by means of portable heating units intended for this purpose.

38
39 All heating units must be approved types. Proper ventilation must be provided. The use of temporary units
40 whose product of combustion will damage fresh concrete, mortar or other building materials, will not be
41 allowed. Use of coke or oil salamanders is prohibited.

42
43 If electrical power is required for oil or gas portable heating units, it may be taken from the available
44 temporary power source and paid for by the General Prime Contractor.

45
46 Heating units and the area surrounding the units shall be kept in a clean and safe condition.

47 48 **25. ENCLOSURE**

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

51
52 The exterior walls should be erected to full thickness and height shall extend to the top of the horizontal
53 level which encloses the space intended to receive heat. If erection of full thick walls is not feasible,

erection of back-up wall only will be accepted if approved weatherproofing of back-up materials is provided to avoid damage to back-up materials.

The horizontal slab, which will serve as the overhead enclosure of the spaces to receive heat (whether it be the roof slab or intermediate floor slab), shall have all openings covered with closures capable of sustaining any loads imposed thereon. The entire overhead enclosure shall be made weatherproof.

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

Construct temporary walls as required to protect contents and to separate the interior enclosed sections from the interior open section of the building during construction. Temporary wall enclosure shall consist of plywood panels, at least 3/8" thick, fastened to wood framework, consisting of 2 x 4 studs spaced 24" o.c., securely spiked to wood plates, top and bottom. Provide intermediate girts between studs as required for fastening of plywood. Temporary walls must provide protection from dirt, dust, and drafts.

Provide exterior doors with hinges, self-closing device, and locks.

Make suitable provisions for passage of air to permit proper drying out of the building.

At end of day's work, securely close temporary enclosures. Padlock exterior doors. The General Prime Contractor shall supervise effectiveness of enclosures.

Where reference is made to a "portion of the building", it is intended to mean definable areas of the building such as a group of floor levels or an entire wing of the building. It is not intended to require a room-by-room or erratic piece-meal enclosure operation, but shall provide for an orderly expansion of large adjacent or related areas to be enclosed which are advantageous to the progress of the work and approved by DFD's Project Representative.

26. TEMPORARY HEAT

All heating required after enclosure of the building up to substantial completion shall be classified as TEMPORARY HEAT. Enclosure is defined in preceding Article.

It shall be the responsibility of the General Prime Contractor to see that every precaution is used to prevent unnecessary escape of heat.

For installations where central plant steam or central plant hot water will be used for permanent heating, the State will furnish all steam or hot water required for temporary heat at no cost to the Contractor. (Condensate shall be wasted until it is determined by DFD's Project Representative that condensate is of a quality suitable for return to the central plant. When such determination is made all condensate shall be returned to the State's system). It is the responsibility of the heating trade to connect to the existing steam or hot water source.

For installations that are not connected to central plant steam or central plant hot water, the General Prime Contractor shall pay the fuel costs for temporary heat for both permanent heating systems used for temporary heat and/or temporary heating systems used for temporary heat.

The General Prime Contractor shall pay for all electrical energy consumed for temporary heat.

The Heating Trade shall provide one of the following systems or a combination thereof, for furnishing temporary heat:

1 Permanent heating system may be used for temporary heating. If permanent system is used, the Heating
2 Trade shall install in their permanent location heating coils or connectors as approved by DFD, with
3 controls to maintain temperatures required. Temporary filters shall be used in the permanent system.
4 Provide bases, shields, etc., around heating elements to prevent too rapid drying of adjacent concrete,
5 masonry or plaster. Relocation of some of the permanent heating system equipment may be required
6 during construction to prevent interference with new construction. Temporary units may be installed in
7 such areas during the time permanent equipment is not operating due to relocation

8
9 If permanent system is not operable and the building is enclosed and heating is required, the Heating Trade
10 may furnish and install a temporary hot water heating system. Where applicable, steam supply piping, heat
11 exchanger, and condensate pump shall be installed. Temporary heating system shall consist of horizontal
12 type "Unit Heaters". Provide unit heaters as required to maintain temperatures specified hereinafter. Each
13 unit shall be installed complete with valve on supply branch and on return, electric line voltage room
14 thermostat to cycle the fan motor, and necessary supply and return piping. Temporary piping shall be run
15 to units on each floor. Return piping shall be run from each unit to common return main terminating at heat
16 exchanger in equipment room. Where applicable, the Heating Trade shall provide a temporary steam prv
17 station and condensate return pump if permanent installation is not ready for operation at the time
18 temporary heat is required. All steam supply piping shall be properly pitched and dripped, and piping shall
19 be sized in accordance with ASHRAE pipe sizing tables.

20
21 If permanent system is not operable and the building is enclosed and heating is required, the Heating Trade
22 may furnish and install a temporary low pressure steam heating system. The temporary heating system
23 shall consist of horizontal type steam unit heaters. Provide unit heaters as required to maintain
24 temperatures specified hereinafter. Each unit shall be installed complete with gate valve on steam supply
25 branch, float and thermostat trap on return, electric line voltage room thermostat to cycle the fan motor and
26 necessary steam supply and condensate return piping. Temporary steam piping shall be run to units on
27 each floor. Condensate return piping shall be run from each unit to a common return main terminating at
28 the permanent condensate pump in condensate return system. The Heating Trade shall provide a temporary
29 steam prv station and condensate return pump if permanent installation is not ready for operation at the
30 time temporary heat is required. All steam supply piping shall be properly pitched and dripped, and piping
31 shall be sized in accordance with ASHRAE pipe sizing tables.

32
33 The distribution piping of the permanent heating system may be utilized for supply and return to unit
34 heaters on each floor in lieu of temporary piping, provided approved connections, controls and protection
35 of such piping is maintained.

36
37 If the permanent air system is used during temporary heating period, temporary filters shall be provided in
38 the system and they shall have efficiency equal to the permanent filters. The return air ductwork shall be
39 protected from construction dirt by temporary filters placed over return openings.

40
41 If the Heating Trade does not have one of the above systems in operation by the time the building is
42 enclosed, then the Heating Trade shall provide, maintain and supervise the operation of temporary portable
43 units with necessary automatic controls to provide required temperatures. Current required may be taken
44 from the temporary electrical service. See "Temporary electrical Installation". Cost of fuel to operate
45 portable units shall be paid by the General Prime Contractor.

46
47 All electrical wiring required for temporary heating units shall be furnished and installed by Heating Trade,
48 from temporary wiring service. Electrical wiring to permanent equipment used for temporary heating that
49 has been mounted in its permanent location shall be wired by trades skilled in that work.

50
51 The use of open salamanders as portable heating units will not be approved. All portable temporary
52 heating units shall be properly ventilated to prevent combustion gases from remaining in the heating area.

1 The Heating Trade must ascertain if heating equipment will operate on the temporary electrical service
2 available. If service is insufficient to operate equipment, Heating Trade shall make other arrangements.
3

4 The Heating Trade shall be responsible for the proper adjustment and maintenance of the system, and shall
5 supervise and be responsible for the operation of the system used for temporary heating until State occupies
6 the building. Supervision shall include periodic checking of operation as required.
7

8 A minimum temperature of 45 degrees and a maximum temperature of 60 degrees for the building shall be
9 maintained by the Heating Trade, except for a period of at least ten days prior to the placing of interior
10 woodwork and throughout the placing of this and other finish, varnishing, painting, etc., and until
11 substantial completion to provide sufficient heat to insure a temperature in the spaces involved of not less
12 than 70 degrees nor more than 80 degrees.
13

14 The temporary heating system shall be removed by the Heating Trade after the permanent heating system
15 has been installed and operating. Surfaces and structure shall be patched as required. Temporary heating
16 equipment shall be relocated by the Heating Trade as required during construction to prevent interference
17 with new construction.
18

19 At completion of construction work or when temporary heat is no longer required, Heating Trade must
20 repair any damage done to permanent equipment during temporary heating period and also perform the
21 necessary cleaning of all ducts and equipment. The Heating Trade shall provide permanent filters to the
22 complete satisfaction of DFD.
23

24 **27. FIRE PROTECTION**

25 The General Prime Contractor shall provide and maintain in working order during the entire construction
26 period, a minimum of three (3) fire extinguishers on each floor level, including basement of the building,
27 and one (1) in temporary office. Extinguishers shall be nonfreeze type such as A-B-C rated dry chemical,
28 of not less than 10-pound capacity each. In addition, any Subcontractor who maintains an enclosed shed on
29 the site shall provide and maintain, in an accessible location, one or more similar nonfreezing type fire
30 extinguisher in each enclosed shed.
31

32 **28. WATCHPERSONS**

33 Watchpersons will not be furnished by the State. The Contractor shall provide such precautionary
34 measures, to include the furnishing of watchpersons if deemed necessary, to protect persons and property
35 from damage or loss where the Contractor's work is involved.
36
37

38 **29. STORAGE OF MATERIALS**

39 Contractor shall confine equipment, apparatus, storage of materials and operations to limits indicated on the
40 drawings or by specific direction of DFD's Project Representative and shall not bring material onto the site
41 until they are needed for the progress of the work.
42

43 The storage of materials on the grounds and within the building shall be in strict accordance with the
44 instructions of DFD's Project Representative. Storage of materials within the building shall at no time
45 exceed the design carrying capacity of the structural system.
46

47 Provide and maintain watertight storage sheds on the premises where directed, for storage of materials that
48 might be damaged by weather. Sheds shall have wood floors raised at least 6" above the ground.
49

50 All materials affected by moisture shall be stored on platforms and protected from the weather.
51

52 All materials shall be stored in a manner that prevents release of hazardous material to the environment.
53

1 All hazardous materials, including motor fuels, shall be properly handled and contained to prevent spills or
2 other releases. The General Prime Contractor shall develop and maintain a contingency plan to provide
3 emergency response, containment, and cleanup of spills of hazardous materials resulting from contract
4 activities. All spills and releases shall be reported to DFD as soon as possible.

5
6 During the construction of this building, materials, construction sheds, and earth stockpiles shall be located
7 so as not to interfere with the installation of the utilities nor cause damage to existing lines.

8
9 The Contractor shall allot space to others for storage of their materials, and erection of their sheds.

10
11 Should it be necessary at any time to move material sheds or storage platforms, the Contractor shall move
12 same at the Contractor's expense, when directed by DFD's Project Representative.

13
14 The State assumes no responsibility for materials stored in building or on the site. The Contractor assumes
15 full responsibility for damage due to the storage of materials.

16
17 Repairing of areas used for placing of sheds, offices, and for storage of materials shall be done by the
18 Contractor.

19
20 **30. PROTECTION OF FINISHED CONSTRUCTION**

21 Contractor shall assume the responsibility for the protection of all finished construction under the Contract
22 and shall repair and restore any and all damage of finished work to its original state.

23
24 Wheeling of any loads over any type of floor, either with or without plank protection, will be permitted
25 only in rubber tired wheelbarrows, buggies, trucks or dollies.

26
27 Where structural concrete is also the finished surface, care must be taken to avoid marking or damaging
28 those surfaces.

29
30 **31. PROTECTION IN GENERAL**

31 All structures and equipment shall be constructed, installed and operated with guards, controls and other
32 devices in place.

33
34 Temporary pumps required for pumping water from building excavation or from building proper shall be
35 provided by the General Prime Contractor, including temporary connections. Plumbing Trade shall install
36 permanent sump basins and piping where and when required. Permanent sump pumps shall not be installed
37 until building is substantially complete and when approved by DFD's Project Representative. The General
38 Prime Contractor shall remove temporary pumps and connections when approved by DFD's Project
39 Representative.

40
41 The General Prime Contractor shall:

42
43 Provide, erect and maintain all required planking, barricades, guard rails, temporary walkways, etc., of
44 sufficient size and strength necessary for protection of stored material and equipment; paved surfaces,
45 walks, curbs, gutters and drives; streets adjacent to or within project area; adjoining property and all project
46 work to prevent accidents to the public and the workmen at the job site.

47
48 Notify adjacent property owners if their property interferes with the work so that arrangements for proper
49 protection can be made.

50
51 Provide and maintain proper shoring and bracing to prevent earth from caving or washing into the building
52 excavation. Provide temporary protection around openings through floors and roofs, including elevator
53 openings, stairwells, and edge of slabs.

1 Provide and maintain proper shoring and bracing for existing underground utilities, sewers, etc.,
2 encountered during excavation work, to protect them from collapse or other type of damage until such time
3 as they are to be removed, incorporated into the new work, or can be properly backfilled upon completion
4 of new work.

5
6 Provide protection against rain, snow, wind, ice, storms, or heat to maintain all work, materials, apparatus,
7 and fixtures, incorporated in the work or stored on the site, free from injury or damage. At the end of the
8 day's work, cover all new work likely to be damaged. Remove snow and ice as necessary for safety and
9 proper execution of the work.

10
11 Protect the building and foundations from damage at all times from rain, ground water and back-up from
12 drains or sewers. Provide all equipment and enclosures as necessary to provide this protection.

13
14 Damaged property shall be repaired or replaced in order to return it to its original condition. Damaged
15 lawns shall be replaced with sod.

16
17 Protect materials, work and equipment, not normally covered by above protection, until construction
18 proceeds to a point where the general building protection of the area where located, dispenses with the
19 necessity therefore. Protect work outside of the building lines such as trenches and open excavations, as
20 specified above.

21
22 Take all necessary precautions to protect the State's property as well as adjacent property, including trees,
23 shrubs, buildings, sanitary and storm sewers, water piping, gas piping, electric conduit or cable, etc., from
24 any and all damage which may result due to work on this project.

25
26 Repair work outside of property line in accordance with the requirements of the authority having
27 jurisdiction.

28
29 Repair any work, damaged by failure to provide proper and adequate protection, to its original state to the
30 satisfaction of DFD or remove and replace with new work at the Contractor's expense.

31
32 Protect trees indicated on the drawings to remain and trees in locations that would not interfere with new
33 construction, from all damage. Do not injure trunks, branches, or roots of trees that are to remain. Do
34 cutting and trimming only as approved and as directed by DFD's Project Representative.

35
36 The value of trees destroyed or damaged will be charged against the account of the Contractor responsible
37 for the damage in an amount equal to the expense of replacing the trees with those of similar kind and size,
38 but not to exceed \$1000.00 for any one tree.

39 40 **32. CLEANING AND WASTE DISPOSAL**

41 Contractor shall be responsible for all cleaning required within the technical sections of the specifications
42 governing work under the Contractor's jurisdiction as well as for keeping all work areas, passageways,
43 ramps, stairs and all other areas of the premises free of accumulation of surplus materials, rubbish, debris
44 and scrap which may be caused by the Contractor's operations or that of the Subcontractors.

45
46 Remove rubbish, debris and scrap promptly upon its accumulation and in no event later than the end of
47 each week.

48
49 Combustible waste shall be removed immediately or stored in fire resistive containers until disposed of in
50 an approved manner.

51
52 No burning of rubbish or debris will be allowed at the site. Rubbish, debris and scrap shall not be thrown
53 through any window or other opening, or dropped from any great height; it shall be conducted to the

1 ground, to waiting truck(s) or removable container(s) by means of approved chutes or other means of
2 controlled conveyance.

3
4 Form and scrap lumber shall have all nails withdrawn or bent over; shall be neatly stacked, placed in trash
5 bins, or removed from the premises.

6
7 Spillages of oil, grease or other liquids which could cause a slippery or otherwise hazardous situation or
8 stain a finished surface, shall be cleaned up immediately.

9
10 Waste materials removed from the site shall be managed by the contractor and disposed of in accordance
11 with all applicable laws, regulations, codes, rules, and standards. Materials that meet the definition of a
12 hazardous waste (Wis. Admin. Code NR 600) shall be disposed through the State's hazardous waste service
13 contract (State Bulletin #15-99145-00), unless otherwise directed in writing by DFD. The Contractor shall
14 prepare all hazardous wastes for transport and disposal. Arrangements for disposal shall be coordinated
15 through DFD's Project Representative. Charges for transport and disposal of hazardous waste by the State's
16 hazardous waste service contractor will be paid directly by the State. Other materials such as soil, debris,
17 sludge, water, etc. generated by project activities which may contain constituents exceeding federal, state,
18 or local environmental cleanup standards must not be removed from the site, or treated and disposed on site
19 without prior written approval of DFD. DFD will provide a list of acceptable offsite disposal or treatment
20 facilities for disposal by Contractor. Other unused or discarded materials may be treated as solid waste.
21 Facilities for recycle, disposal or landfill of such items shall be approved by DFD prior to removal from the
22 site.

23
24 Dust, dirt and other foreign matter shall be removed completely from all internal surfaces of all mechanical
25 and electrical units, cabinets, ducts, pipes, etc.

26
27 Dirt, soil, fingerprints, stains and the like, shall be completely removed from all exposed finished surfaces.

28
29 General Prime Contractor shall wash all glass immediately prior to the occupancy of this project. Work
30 shall include the removal of labels, paint splattering, glazing compound and sealant. Surfaces shall include
31 mirrors and both sides of all glass in windows, borrowed lights, partitions, doors and side lights.

32
33 Broken, scratched or otherwise damaged glass shall be replaced by the General Prime Contractor.

34
35 In addition to the above, the General Prime Contractor shall be responsible for the general "broom"
36 cleaning of the premises and for expediting all of the cleaning, washing, waxing and polishing required
37 within the technical sections of the specifications governing work under this Contract. The General Prime
38 Contractor shall also perform "final" cleaning of all exposed surfaces to remove all foreign matter, spots,
39 soil, construction dust, etc., so as to put the project in a complete and finished condition ready for
40 acceptance and use intended.

41
42 If rubbish and debris is not removed, or if surfaces are not cleaned as specified above, DFD reserves the
43 right to have said work done by others and the related cost(s) will be deducted from monies due the
44 Contractor.

45 46 **33. OPERATING AND MAINTENANCE MANUALS AND INSTRUCTIONS**

47 Contractor shall provide DFD with two (2) sets of the O&M data for each device, piece of equipment and
48 assembly furnished and/or installed under this contract. Format shall be paper, indexed and labeled and
49 bound in three-ring binders. When duplicate electronic data is available, include electronic media in 3 hole
50 vinyl holders in binders.

51
52 The O&M manuals shall include the following:

- 53 • Table of Contents

- 1 • Contact information (including emergency contact number) for installing contractor, original
- 2 vendor manufacturer and service provider
- 3 • Copy of approved submittals
- 4 • As-built control drawings and sequences of operations
- 5 • Catalog data or literature with correct model number checked
- 6 • Manufacturer's installation and operation instructions including start-up, break-in, shutdown,
- 7 seasonal, emergency and special operation procedures
- 8 • Manufacturer's maintenance instructions including procedures and instructions for problem
- 9 corrections, preventive maintenance, testing, alignment, adjustment and repair
- 10 • Complete parts list in an exploded view diagram of the equipment
- 11 • Construction Verification Checklists
- 12 • Inspection and testing reports
- 13 • Maintenance records indicating maintenance performed by contractor prior to substantial
- 14 completion
- 15 • Equipment warranties including terms and conditions and date of inception (substantial
- 16 completion) and date of expiration
- 17 • List of special tools or testing equipment required for the operation, testing or maintenance of the
- 18 equipment
- 19 • For items assembled by the Contractor for special functions, write operating and maintenance
- 20 instructions
- 21

22 Contractor shall submit to A/E for review, make revisions noted by A/E and provide final O&M data for
23 A/E's review 30 business days prior to training. Any revisions or changes to the systems and/or equipment
24 post delivery of the final O & M data submittal must be submitted to A/E as an addendum within 30 days
25 of the revision or change.

26 27 **34. TESTS AND ADJUSTMENTS**

28 The complete installation consisting of the several parts and systems and all equipment installed according
29 to the requirements of the Contract Documents, shall be ready in all respects for use by the User Agency
30 and shall be subjected to a test at full operating conditions and pressures for normal conditions of use.

31
32 Contractor shall make all necessary adjustments and replacements affecting the work which is necessary to
33 fulfill DFD's requirements and to comply with the directions and recommendations of the manufacturer of
34 the several pieces of equipment, and to comply with all codes and regulations which may apply to the entire
35 installation. Contractor shall also make all required adjustments to comply with all provisions of the
36 drawings and specifications.

37 38 **35. LOOSE AND DETACHABLE PARTS**

39 Contractor shall retain all loose and small detachable parts of apparatus and equipment furnished under this
40 Contract, until completion of the work and shall turn them over to DFD's Project Representative designated
41 to receive them. Contractor shall obtain from DFD an itemized receipt thereof in triplicate. Contractor
42 shall retain one copy of receipt for their files and attach the other two to request for final payment for the
43 work.

44 45 **36. EROSION CONTROL AND STORM WATER MANAGEMENT**

46 In accordance with state law, where applicable, and what the Department of Administration believes to be
47 good soil conservation practices and pollution prevention, the General Prime Contractor shall be governed
48 by the following:

49
50 The General Prime Contractor hereby covenants to maintain all project grounds, public streets and
51 associated areas, including fill areas in a manner consistent with state laws and the general policy to
52 conserve soil and soil resources, and to control and prevent soil erosion and to control and prevent siltation
53 into waters of the state. This clause is to be liberally construed to further the above stated objectives. The
54 following shall include, but not limit areas in which control is to be executed:

1
2 Erosion Control Plan: Implement the erosion control plan developed for the project and maintain erosion
3 control practices throughout the construction period. Modifications to the erosion control plan, addressing
4 phases of construction shall be the responsibility of the General Prime Contractor. Erosion control
5 practices that are compromised as the result of construction activity shall be returned to their functioning
6 state by the end of the current work day. Where applicable, erosion control practices shall comply with
7 Chapters NR 151 and 216, Wis. Adm. Code.

8
9 Minimum Stripping: Limit stripping of sod and vegetation and limit land disturbance to an area and a time
10 period that will expose bare soil to least possibility of erosion that construction requirements will allow.

11
12 Stockpiling: Materials, including soil, shall be stored and protected in a manner that will prevent runoff of
13 material from the stockpiles into streets, drainage facilities, storm sewer systems, or waters of the state in
14 the event of rain.

15
16 Soil Erosion and Erodible Materials: Take positive measures to prevent soil erosion from the construction
17 area and areas disturbed by construction activities by employing such means as seed and mulch, mulches,
18 intercepting embankments and berms, sedimentation basins, ditch checks, riprap, erosion mats, silt fence,
19 approved polyacrylamides, inlet protection, or other temporary erosion control devices or methods.

20
21 Record Keeping: Maintain a copy of the current erosion control plan on site. Maintain maintenance records
22 and inspection logs on-site for erosion control and storm water management practices. Contractor shall
23 provide project representative with a weekly maintenance and inspection report.

24
25 Street Maintenance: Control the tracking of soil onto street and paved surfaces to a minimum. Any such
26 tracking shall be removed no less than on a daily basis.

27
28 Storm Water Management: Practices installed for post-construction storm water management shall be
29 protected during construction activity, and in the event that their intended function becomes compromised
30 during construction activity, shall be restored and/or repaired according to Chapters NR 151 and 216, Wis.
31 Adm. Code, for post-construction storm water management.

32
33 Erosion control and storm water management practices shall be installed and maintained in accordance
34 with the WDNR approved technical standards available at the following website:
35 <http://dnr.wi.gov/org/water/wm/nps/stormwater/techstds.htm>

36
37 Responsibility and authority for inspections are vested in the Department of Administration through the
38 Division of Facilities Development.

39
40 Responsibility and authority for maintaining records for NR 216 is the responsibility of the General Prime
41 Contractor.

42 43 **37. AIR QUALITY MANAGEMENT**

44 In accordance with the Department of Administration's air quality management practice on Ozone Action
45 Days, all contractors shall reduce or limit emissions and particulate matter that adversely affect air quality.

46
47 The General Prime Contractor shall establish the action plan, in cooperation with other contractor(s),
48 concerning implementation of air quality management on Ozone Action Days. This plan shall include
49 suspending work or modifying operations for all activities related to ozone, volatile organic compounds
50 (VOC) and nitrogen oxide emissions. These work activities include but are not limited to the following:

51 Limit equipment and vehicle refueling to after 6 pm.

52 Limit use of gasoline-powered vehicle and equipment.

53 Limit excessive idling of diesel-powered vehicle and equipment.

54 Limit large scale painting with VOC.

Limit large scale asphalt roofing and paving.
Limit and/or control all dust creating activities.

For information on air quality readings on Ozone Action Days refer to:
1-866-324-5924; or
<http://www.dnr.state.wi.us/org/aw/air/wisards/state.htm>

38. CONSTRUCTION WASTE MANAGEMENT

See Section 01 74 19 – Construction Waste Management.

39. GUARANTEE DOCUMENTS

Upon Substantial Completion of project, the Contractor shall submit such written guarantees and bonds to DFD for presentation to the User Agency. Furnish guarantees in triplicate unless otherwise indicated.

40. RECORD DOCUMENTS

On a suitable set of Contract Documents, the contractor is to maintain a daily record of changes and deviations from the contract. All buried or concealed piping, conduit, or similar items shall be located by dimensions and elevations on the record drawings.

The daily record of changes shall be the responsibility of Contractor's field superintendent. No arbitrary mark-ups will be permitted.

Once during the month the Contractor shall present, at the project, the job copy showing variations and changes to date to the Architect/Engineer and DFD Project Representative for their review.

At substantial completion of the project, the Contractor shall transmit the marked up as-built documents to the Architect/Engineer and copy the DFD Project Representative on the transmittal of the documents. The A/E will incorporate the contractor marked up as-built drawings into the record drawings.

1 **PREPARATION OF ADDENDA**

2 The Addendum, like all other documents to the Contract, must follow a certain format and contain the
3 necessary information which will clearly identify it with the Contract Documents and to be made a part
4 thereof.

5
6 The Addendum shall have a heading which provides the Addendum number, date of issue, project title,
7 location, and project number. The bid closing time and date shall always be included in the Addendum. A
8 standard paragraph will then follow which stipulates the purpose of the Addendum.

9
10 The body of the addendum should consist of four parts AS APPLICABLE: Changes to Bidding
11 Requirements, Changes to Conditions of Contract, Changes to Specifications and Changes to Drawings.
12 Should one or more of these parts not be changed, do not include that part's title in the addendum.

13
14 Addendum change items must refer to a specific document within the project manual or drawings and shall
15 be listed in the Addendum in the same numerical sequence as they occur in the original documents. Each
16 addendum item should be identified by a unique, consecutive number (1, 2, 3, etc).

17
18 Items referencing specifications shall include the following, in the order listed: Section number and title,
19 page number, line number, and then pertinent information concerning the item being changed.

20
21 Items referencing drawings shall include the following, in the order listed: Drawing Sheet Number; word
22 description of item being changed such as 1st Floor plan, Door Schedule, North elevation, etc; detail or
23 section number; followed by description of change.

24
25 Closing on the Addendum shall consist of the title block for the Architect/Engineer and for the Division of
26 Facilities Development. A sample Addendum is appended to this manual.

27
28 Holding addendum information for consolidation into one large addendum is not desired. The
29 Architect/Engineer shall endeavor to release addenda in sufficient time for Bidders to review and
30 incorporate into their bids. Bidders are requested to bring inadequacies, omissions or conflicts to
31 Architect/Engineer's attention. **THE A/E SHALL SUBMIT THE ADDENDUM TO DFD AT LEAST**
32 **10 DAYS PRIOR TO BID OPENING.** The addendum will then be issued by DFD no less than 7 days
33 prior to Bid Opening. Approval from DFD must be obtained to waive this requirement. If this requirement
34 is waived, and the addendum is issued less than 7 days prior to bid opening, it shall contain an extension of
35 the bid opening date for no less than 7 days from the present bid opening date.

36 Any change to the Bid Form by addendum shall require that the complete corrected Bid Form be reissued
37 rather than only reference the changes to be made. The corrected Bid Form shall have a heading to read:
38 "REVISED BID FORM" and have page numbers C-1(REV), C-2(REV), etc.

39
40 Addenda are to be submitted electronically following the bidding documents' electronic process. Drawings
41 are to be completed per the DFD CAD Standards Manual. Addenda Submittal Exception - The PDF text
42 and drawings shall be incorporated into one PDF document even if large full format drawings are required.
43 The complete PDF addenda shall then be submitted to the DFD SharePoint site previously indicated. The
44 files shall be named according to file naming standards.

45
46 DFD will issue an addendum if a successful MEP bid is withdrawn or rejected after the MEP
47 Subcontractors have been identified but before the General Prime Contractor bid opening, This addendum
48 will include a revised list of successful MEP bids that must be included in General Prime Contractor bids
49 and will move the General Prime Contractor bid opening five days later to allow bidders sufficient time to
50 update their bids based on the revised MEP list.

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ADDENDUM NO._____
ISSUE DATE: _____

RE: Site Improvements to Ahuska Park, Monona, Division Project No. 120616
WI.

BID OPENING: 2:00 P.M., 2/1/17

FROM: E Drive Design, 1415 Engineering Drive, Madison, WI. 53706

TO: Prospective Bidders

This addendum forms a part of the Contract Documents and modifies the original Contract Documents dated **[Insert date of bidding documents]** as noted below. Acknowledge receipt of this Addendum by inserting the number and issue date of this addendum in the blank space provided on the Bid Form. Failure to do so may subject the Bidder to disqualification.

This Addendum consists of **[Insert number of pages]** and the attached documents **[Insert document titles, page numbers and dates, as applicable.]**

CHANGES TO BIDDING REQUIREMENTS:

1.

CHANGES TO CONDITIONS OF THE CONTRACT:

2.

CHANGES TO SPECIFICATIONS (DIVISIONS 2 THRU 33):

3.

CHANGES TO DRAWINGS:

4.

END OF ADDENDUM

E Drive Design Company
1415 Engineering Dr.
Madison, Wisconsin 53706

Division of Facilities Development
Department of Administration
Madison Wisconsin 53707-7866

Section 2

Technical Specifications

SECTION 31 25 00
EROSION CONTROL
BASED ON DFD MASTER SPECIFICATION DATED 02/17/2016

PART 1 - GENERAL

SCOPE

The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to provide and construct erosion control measures necessary to protect property and the environment. Included are the following topics:

PART 1 - GENERAL

Scope
Related Work
Reference Documents
Submittals
Erosion Control Plan

PART 2 - MATERIALS

General
Geotextile Fabric
Silt Fence
Erosion Mat
Riprap

PART 3 - EXECUTION

General
Grading and Earthwork
Drainage
Tracking Control
Maintenance

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:

Section 02 41 13 – Demolition
 Section 30 05 00 – Common Work Results For All Exterior Improvements
 Section 31 20 00 – Earthmoving
 Section 31 22 16.15 – Roadway Subgrade Preparation
 Section 31 23 16.13 – Trenching
 Section 31 23 16.16 -- Structural Excavation for Minor Structures
 Section 31 23 19 – Dewatering
 Section 32 92 20 – Native Seeding

Provide erosion control in accordance with the following references:

- Erosion Control Product Acceptability List (“PAL”), current version as published by the WisDOT.
- Construction Site Erosion & Sediment Control Technical Standards, current version as published by the Wisconsin Department of Natural Resources WDNR.
- Storm Water Post-Construction Technical Standards, current version as published by the WDNR.

Method of measurement and basis of payment sections in any referenced erosion control documents shall not apply to this contract.

REFERENCE DOCUMENTS

Wherever PAL appears in this specification, it shall mean the Wisconsin Department of Transportation, Erosion Control Product Acceptability List (PAL), current edition.

SUBMITTALS

Submit shop drawings for the following erosion control features:

1. Silt Fence
2. Erosion Mat

EROSION CONTROL PLAN

The A/E has prepared an erosion control plan for the project. [The A/E will complete, apply for, and pay for a Water Resources Application for Project Permits (WRAPP) to obtain acceptance for land disturbing activities in excess of 1 acre from the WDNR.] The Contractor will provide the A/E with submittals for materials used to implement the erosion control plan, as well as any modifications to the erosion control plan that are necessary due to the Contractor's means and methods of construction.

Contractor shall comply with all the requirements of the erosion control plan, [and if applicable, the Construction Site Storm Water Runoff General Permit requirements as obtained from the WRAPP]. Contractor shall be responsible for completing all construction site inspection reports for the duration of the project and the Notice of Termination form required by the WDNR].

Contractor shall provide all erosion control measures necessary as noted in the drawings and defined in the specifications to protect property and the environment. Apply and pay for erosion control or land disturbing permits as required by local municipalities and state agencies.

PART 2 – MATERIALS

GENERAL

Erosion mats shall be listed on the Wisconsin Erosion Control Product Acceptability List (PAL) as published by the Wisconsin Department of Transportation.

When the design or contract includes permanent erosion control or stormwater control features, the contractor may employ these items in his control of erosion and stormwater during his construction activities. However, these items shall be fully cleaned, restored, and in every way fully functioning for its intended permanent use prior to acceptance of the work.

GEOTEXTILE FABRIC

Type FF geotextile fabric meeting the requirement of the PAL shall be used for inlet protection.

SILT FENCE

Fence fabric shall comply with the requirements of Standard Specifications for Highway and Structure Construction 628.2.6, in 3 foot tall rolls, with 4' tall 2" x 2" nominal cross section hardwood posts spaced a maximum of 10' o.c. Silt fence shall be Mirafi, Trevira, Amoco, CFM, or approved equal.

EROSION MAT

A light duty, organic mat encased in a light weight photodegradable or biodegradable netting on both the bottom and top sides. Erosion mat shall comply with the requirements of Class I; Type A erosion mat as

defined by Standard Specifications for Highway and Structure Construction and the PAL. Erosion mat shall be American Excelsior, Erosion Control Systems, North American Green, or approved equal.

For environmentally sensitive areas that have a high probability of trapping animals or for establishing natural areas with taller vegetation it is recommended that an urban mat is used. Erosion mat shall comply with the requirements of Class I; Urban Type B erosion mat as defined by Standard Specifications for Highway and Structure Construction and the PAL. Erosion mat shall be American Excelsior-Curlex Net-Free, Erosion Control Blanket-S32BD, Western Excelsior-Excel SS-2 All Natural, Ero-Guard EG-25 (NN), Erosion Tech ETRS2BN or approved equal.

RIPRAP

Riprap shall be the class specified in the plan and shall conform to Standard Specifications for Highway and Structure Construction 606.2. If a class is not specified in the plan, medium riprap shall be used.

PART 3 - EXECUTION

GENERAL

Install erosion control measures as required by the erosion control plan and contract documents. Provide additional erosion control measures as dictated by Contractor's means and methods, or by differing site conditions. Notify DFD Project Representative of additional erosion control features that are provided, but not shown on the plan.

Contractor shall provide all erosion control measures necessary to protect property and the environment. Perform all work in accordance with manufacturer's instruction where these specifications do not specify a higher requirement.

GRADING AND EARTHWORK

Install all temporary or permanent erosion control measures prior to any onsite grading or land disturbances.

Clear only those areas designated for the placement of improvements or earthwork before placement of the final cover. Perform stripping of vegetation, grading, excavation, or other land disturbing activities in a logical sequence and manner which will minimize erosion. If possible, schedule construction for times of the year when erosion hazards are minimal.

Do not clear the site of topsoil, trees, and other natural ground covers before the commencement of construction. Retain natural vegetation and protect until the final ground cover is placed.

Do not stockpile soil within 25 feet of any roadway, parking lot, paved area, or drainage structure or channel. Provide temporary stabilization and control measures (seeding, mulching, covering, erosion matting, barrier fencing) for the protection of disturbed areas and soil piles which will remain unfinished for a period of more than 14 consecutive calendar days.

Remove surplus excavation materials from the site immediately after rough grading. The disposal site for the surplus excavation materials shall also be subject to these erosion control requirements.

DRAINAGE

Minimize water runoff and retain or detain on-site whenever possible so as to promote settling of solids and groundwater recharge.

Convey drainage to the nearest adequate public facility. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

Protect storm sewer inlets and catch basins in accordance with the erosion control plan, if provided. If not specified, protect inlets with straw bale barriers, silt fencing, filter basket, gabion stone weepers, or other equivalent methods approved by the A/E which provide the necessary erosion protection.

Divert roof drainage and runoff from all areas upslope of the site around areas to be disturbed or channel them through the site in a manner that will not cause erosion.

Minimize the pumping of sediments when dewatering. Discharge to a sedimentation basin or sedimentation vessel to reduce the discharge of sediments. Do not discharge water in a manner that will cause erosion or sedimentation of the site or receiving facility.

TRACKING CONTROL

Provide each entrance to the site with a stone tracking pad. Tracking pad shall be constructed of Gabion Stone or Breaker Run.

If necessary, provide a crushed aggregate paved parking area.

If applicable, wash water shall be discharged to sedimentation basins, sedimentation vessels, or other such control areas. Untreated wash water shall not be discharged to storm sewers or surface water bodies.

MAINTENANCE

Inspect all erosion control measures within 24 hours of the end of each rainfall event that exceeds 0.25" or daily during period of prolonged rainfall, or weekly during periods without rainfall. Immediately repair and/or replace any and all damaged, failed, or inadequate erosion control measures.

Maintain records of all inspections and any remedial actions taken.

Maintain stockpile stabilization measures as necessary after rainfall events and heavy winds. Replace tarps, re-seed, and reapply mulch, tackifiers and stabilizers as necessary.

Remove sediment from stormwater and erosion control structures, basins and vessels as necessary.

Repair or replace damaged inlet protection.

Replace or supplement stone tracking pads with additional stone when they become ineffective.

Remove any sediment reaching a public or private roadway, parking lot, sidewalk, or other paved. Do not remove tracked sediments by flushing. Completely remove any accumulations not requiring immediate attention at least once daily at the end of the workday.

Frequently dispose of all waste and unused construction materials in licensed solid waste or wastewater facilities. Do not bury, dump, or discharge, any garbage, debris, cleaning wastes, toxic materials, or hazardous materials on the site, on the land surface or in detention basins, or otherwise allow materials to be carried off the site by runoff onto adjacent lands or into receiving waters or storm sewer systems.

END OF SECTION

1 **SECTION 31 62 16.11**

2 **Steel Helical Piles**

3
4 **PART 1 - GENERAL**

5
6 **SCOPE**

7
8 The work under this section consists of providing all work, materials, labor, equipment, and supervision
9 necessary to install steel helical piles as required in these specifications and the drawings.

10
11 **PART 1 - GENERAL**

12 Scope
13 Related Work
14 Reference Documents
15 Definitions
16 Basis for Payment
17 Submittals
18 Quality Assurance

19 **PART 2 - PRODUCTS**

20 Manufacturer
21 Manufactured Components

22 **PART 3 - EXECUTION**

23 General
24 Examination
25 Preparation
26 Installation
27 Field Quality Control
28 Project Record Documents
29 Depth and Torque Tolerance
30 Contract Quantities and Measurement for Payments

31
32 **RELATED WORK**

33
34 Applicable provisions of Division 1 govern work under this Section.

35
36 Related work specified elsewhere:

37 Section 03 20 00 – Concrete Reinforcing
38 Section 03 30 00 – Cast-In-Place Concrete
39 Section 31 20 00 – Earth Moving

40
41 **REFERENCE DOCUMENTS**

42
43 **General**

44 The following documents form part of the Specifications to the extent stated. Where differences
45 exist between codes and standards, the one affording the greatest protection shall apply.

46
47 Unless otherwise noted, the referenced standard edition is the current one at the time of
48 commencement of the Work.

49
50 Refer to Division 01 Section "General Requirements" for the list of applicable regulatory
51 requirements.

52 ICBO Evaluation Report ER-5110, A. B. Chance Helical Pier Foundation System.

53 ICBO Evaluation Report PFC-5551, Dixie Anchoring System.

DEFINITIONS

Helical Pier: The A. B. Chance Helical Pier Foundation System or Dixie Anchoring System consisting of helical steel piers with one (or more) helically shaped steel plate attached to a central steel shaft. Piers are extended by adding shaft extensions.

BASIS FOR PAYMENT

From the data obtained as a result of installation, calculate actual total net length of piers used. Contract price per linear foot includes labor, materials, tools, equipment and incidentals, and for performing work for furnishing, installing, cutting off and capping piers. This includes splicing and disposal of cut-offs.

Measurements will be based on effective length of piers in place, with fractional lengths measured to nearest foot. Payment for linear footage in excess of that given in Paragraph A, and credit for linear footage less than that given in Paragraph A, shall be made at unit prices stated in the Contract, based on net addition or deduction.

No payment will be made for rejected piers, including piers installed out of place, imperfect piers, or piers damaged in installing or handling

SUBMITTALS

Submit under provisions of Division 01 Section "General Requirements."

Submit certification that manufactured components comply with ICBO report ER-5110 or PFC-5551.

Submit 2 copies of installer's certification from the manufacturer to install the system.

Submit 2 copies of project records specified in Part 3 "Project Record Documents."

Project Closeout Submittals: Record Drawings.

QUALITY ASSURANCE

Installer Qualification: Installers specializing in performing the work of this section with documented certification from the manufacturer.

PART 2 – PRODUCTS

MANUFACTURER

AB Chance Company, a subsidiary of Hubbel Corp., 210 North Allen Street, Centralia, MO 65240-1395, or Aluma-Form/Dixie, 3625 Old Getwell Road, Memphis, TN 38118.

MANUFACTURED COMPONENTS

Helical plate, pier lead section and extensions, bolts and foundation attachment brackets conforming to the applicable ICBO evaluation report.

PART 3 - EXECUTION

EXAMINATION

Verify site conditions under provisions of Division 01 Section "Special Procedures."

PREPARATION

1
2 Use placement method which will not cause damage to nearby structures.

3
4 Prepare to place [piles] [tie back anchors] from excavated working elevation.

5
6 **INSTALLATION**

7
8 Install by certified contractor or dealer.

9
10 Install helical piers as detailed on structural drawings.

11
12 Provide electric or hydraulic powered, rotary type installation torque units with forward and reverse
13 capability which are capable of positioning the pier at the designed angle.

14
15 Connect the installation units with manufacturer's approved adapters. Provide safe connection to piers and
16 extensions.

17
18 The minimum installation equipment rating shall equal or exceed the maximum torque rating of the
19 specified helical pier.

20
21 Securely connect the installation equipment to the pier during installation.

22
23 Monitor torque applied by the installing units during the entire installation and record values achieved on
24 each pier.

25
26 Provide a torque monitoring device as part of the installing unit or as a separate in-line device.

27
28 Make calibration torque monitoring data available for the Engineer, Inspector, and University.

29
30 Position helical pier as indicated. Establish proper angular alignment at the start of installation.

31
32 Install piers in a smooth and continuous manner; the rate of pier rotation shall be five to twenty revolutions
33 per minute.

34
35 Apply sufficient downward pressure to advance the pier.

36
37 Provide extension material to obtain indicated depth. Couple the helical pier and extension sections with
38 bolts in accordance with ICBO report ER-5110.

39
40 Remove encountered obstructions, or relocate the helical pier and adjacent helical piers as required.

41
42 Install to the minimum depth indicated. Provide a minimum of five 5 feet (1.5 m) of ground cover above
43 the top helix. Obtain written permission from the University before proceeding if indicated depth or
44 minimum torque can not be obtained.

45
46 **FIELD QUALITY CONTROL**

47
48 Field inspection and testing when required will be performed under provisions of Division 01 Section
49 "General Requirements." Special inspection as specified in the applicable ICBO evaluation report is
50 required in accordance with Section 1701 of the CBC.

51
52 Monitor torque applied by the installing units during the entire installation.

53
54 Provide torque monitoring device as part of the installation unit or as a separate in-line device.

55
56 **PROJECT RECORD DOCUMENTS**

1
2 Accurately record the following:

3 Type [number and size of helices], and size.

4 Deviation from indicated locations.

5 Actual locations of helical piers, pier diameter, and pier length.

6 Installation angle below horizontal.

7 Extension length along shaft and datum.

8 Anchor testing if required.

9 Torque-installation records on piers.

10 Torque monitoring calibration data.

11
12 **DEPTH AND TORQUE TOLERANCES**

13
14 Helical piers that reach maximum torque rating before reaching minimum indicated depth shall be subject
15 to the following:

16 Terminate at depth obtained with written approval to Engineer.

17 Replace helical pier with smaller and/or less helices, installed 3 feet (0.9 m) minimum
18 beyond termination of original helical pier.

19
20 **CONTRACT QUANTITIES AND MEASUREMENT FOR PAYMENT**

21
22 Contract-Number of Helical Piers and Length – [___] with a total of [___] lineal feet. Helical Pier cut off
23 elevations as detailed on the drawings.

24
25
26 **END OF SECTION**

SECTION 32 40 10
WOOD WALLS, BOARDWALKS AND WOOD DECKING

SECTION 32 40 10

WOOD WALLS, BOARDWALKS AND WOOD DECKING

PART 1 - GENERAL

SCOPE

The work under this section consists of providing all work, materials, labor, equipment, and supervision necessary to install decking and ramps, railing, wood benches, and support framing for elevated decks.

PART 1 - GENERAL

Scope

Related Work

Reference Documents

Definitions

Submittals

Quality Assurance

Delivery, Storage, and Handling

PART 2 - PRODUCTS

Lumber, General

Wood Decking

Wood Railings

Dimension Lumber Framing

Preservative Treatment

Fasteners

Metal Framing Anchors

Concealed Decking Fasteners

PART 3 - EXECUTION

Examination

Preparation

Installation, General

Elevated Deck Joist Framing Installation

Railing Installation

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:

Section 31 62 16.11 – Steel Helical Piles

REFERENCE DOCUMENTS

Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

DEFINITIONS

Wood Terminology: ASTM D245.

Commercial and common names for hardwood and softwood timber and lumber: ASTM D1165.

Boards: Lumber of less than 2 inches nominal in thickness and 2 inches nominal or greater in width.

Dimension Lumber: Lumber of 2 inches nominal or greater but less than 5 inches nominal in least dimension.

Timber: Lumber of 5 inches nominal or greater in least dimension

Reference agencies, and the abbreviations used to reference them, include the following:

- ALSC: American Lumber Standard Committee.
- American Institute of Timber Construction: Timber Construction Manual.
- ASTM: American Society of Testing Materials.
- AWPA: American Wood Protection Association: Book of Standards.
- DOC: Department of Commerce.
- FSC: Forest Stewardship Council.
- ICC-ES: ICC Evaluation Service.
- NeLMA: Northeastern Lumber Manufacturers' Association.
- NLGA: National Lumber Grades Authority.
- RIS: Redwood Inspection Service.
- SPIB: The Southern Pine Inspection Bureau.
- WCLIB: West Coast Lumber Inspection Bureau.
- WWPA: Western Wood Products Association.

SUBMITTALS

ACTION SUBMITTALS

Product Data: For preservative-treated wood products, metal framing anchors and all Fasteners.

1. For preservative-treated wood products. Include chemical treatment manufacturer's written instructions for handling, storing, installing, and finishing treated material.
2. For metal framing anchors. Include installation instructions.
3. Edit as necessary based on types of fasteners and hardware being used
4. For all fasteners including joist and beam hangers, screws, nails and miscellaneous hardware.

Shop Drawings: Submit engineered sealed shop drawings showing and specifying detailed design of all connections. Include all design criteria assumptions on the drawings.

Samples: For plastic decking, not less than 24 inches long, showing the range of variation to be expected in appearance of decking, including surface texture.

INFORMATIONAL SUBMITTALS

Material Certificates:

1. For lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by ALSC's Board of Review.
2. For preservative-treated wood products, indicate what wood preservative system was used, its target retention, the producer of the treated lumber, and the intended Use Category. Also indicate which AWPA standards and/or ICC-ES Evaluation Reports the treated lumber was manufactured according to, as well as which inspection agency was used. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
3. All lumber. Indicate maximum moisture content prior to and after preservative treatment.

Certificates of Inspection: Issued by lumber grading agency for exposed wood products not marked with grade stamp.

QUALITY ASSURANCE

Lumber Manufacturer Qualifications: A qualified manufacturer that is certified for chain of custody by an FSC-accredited certification body.

Lumber Vendor Qualifications: A vendor that is certified for chain of custody by an FSC-accredited certification body.

Qualifications of Installer: Minimum 5 years' experience with design and installation of commercial boardwalk and patio systems.

Lumber Manufacturer and Preservative Treater:

1. The lumber manufacturer shall provide all quality control and inspection of materials furnished and shall be graded and stamped accordingly. Stamping shall include mill origin, species and grade. Stamping may be removed only following field verification.
2. The preservative treater shall ensure all grading stamps are legible after treatment. The treater shall ensure the lumber is treated in accordance with applicable AWP standards. All lumber shall be clearly labeled according to AWP U1 and include the producer, preservative, retention, intended Use Category, and identity of the accredited independent inspection agency used.

Field Treatment of Preservative Treated Material: Field treat all saw cuts, routs, kerfs, holes and injuries to the surface of the preservative treated lumber by brushing, dipping, soaking or coating, according to AWP Standard M4. Spraying is not permitted.

DELIVERY, STORAGE, AND HANDLING

Store materials under cover and protected from weather and contact with damp or wet surfaces. Stack lumber flat with spacers between each bundle to provide air circulation. Provide for air circulation around stacks and under coverings.

Handle and store plastic lumber to comply with manufacturer's written instructions.

All lumber with damaged surfaces shall not be used.

PART 2 – PRODUCTS

LUMBER, GENERAL

Comply with DOC PS 20 and with grading rules of lumber grading agencies certified by ALSC's Board of Review as applicable. If no grading agency is indicated, comply with the applicable rules of any rules-writing agency certified by ALSC's Board of Review.

1. Factory mark each item with grade stamp of grading agency.
2. For items that are exposed to view in the completed Work, [mark grade stamp on end or back of each piece] [or] [omit grade stamp and provide certificates of grade compliance issued by grading agency].
3. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry wood products.
4. Provide dressed lumber, S4S, unless otherwise indicated.

Regional Materials: Wood products shall be milled within 500 miles of Project site from wood that has been harvested within 500 miles of Project site.

Certified Wood: Boards and dimension lumber shall be certified as "FSC Pure"[or "FSC Mixed Credit"] according to FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship," and to FSC STD-40-004, "FSC Standard for Chain of Custody Certification."

Maximum Moisture Content Following Preservative Treatment:

1. Boards: [15] [19] percent.

2. Dimension Lumber: [15 percent] [19 percent] [15 percent for 2-inch nominal thickness or less; 19 percent for more than 2-inch nominal thickness] [15 percent for 2-inch nominal thickness or less; no limit for more than 2-inch nominal thickness] [19 percent for 2-inch nominal thickness or less; no limit for more than 2-inch nominal thickness].

3. Timber. [19 percent] [No limit].

WOOD DECKING

Hand select wood for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.

Unless otherwise noted, provide lumber that is surface on all sides (S4S) at mill prior to grading [and preservative treatment].

Dimension Lumber Decking [and Stair Treads]: [Select] [No. 1] grade and[any of] the following species:

1. Hem-fir or hem-fir (North); NLGA, WCLIB, or WWPA.
2. Douglas fir-larch, Douglas fir-larch (North), or Douglas fir-south; NLGA, WCLIB, or WWPA.
3. Mixed southern pine; SPIB.
4. Redwood; RIS.

Dimension Lumber Decking [and Stair Treads]: [Clear Heart] [No. 1] redwood; RIS.

Retain one of three "Board Decking And Stair Tread paragraphs below.

Board Decking: [1-1/4-inch] [1-inch] [3/4-inch], actual thickness radius-edged decking [Select] [No.1] grade, of the following species:

1. Southern pine; SPIB.

Board Stair Treads: [1-1/4-inch] [1-inch] [3/4-inch] actual thickness stepping with half-round or rounded-edge nosing[Select] [No.1] grade, and the following species and grades:

1. Southern pine, [Edge Grain B & B stepping] [Near Rift B & B stepping] [B & B stepping]; SPIB.

Board Decking [and Stair Treads]: [1-1/4-inch] [1-inch] [3/4-inch] actual thickness radius-edged, with one face free of planer skip, machine burn, and torn or chipped grain.

1. Species: [Ipe] [Teak] [Cumaru] [Garapa] [Goncalo alves] <Insert name>.
2. Grade Characteristics:
 - a. Clear [one face; small pin knots and worm holes allowed on back face].
 - b. Sound; small pin knots, worm holes, and fixed knots allowed.
 - c. All heart [one face].
 - d. Straight grained and parallel cut.
 - e. Free of any pith.
 - f. No decay, incipient decay, honeycomb, knot holes, shakes, splits, or wane.
 - g. No discoloration.

WOOD RAILINGS

Hand select wood for freedom from characteristics, on exposed surfaces and edges, that would impair finish appearance, including decay, honeycomb, knot holes, shake, splits, torn grain, and wane.

Dimension Lumber Railing Members: [Select Structural] [Select] [No. 1] grade and[any of] the following species:

1. Mixed southern pine; SPIB.

Dimension Lumber Railing Members: [Clear Heart] [No. 1] redwood; RIS.

Railing Boards: [Select] [No.1] grade,[Any of the following species:]

1. Southern pine; SPIB.

Railing Boards: Radius-edged [Ipe] [Teak] S4S boards, [same grade as decking] [clear] [clear all heart] [, straight grained and parallel cut].

DIMENSION LUMBER FRAMING

Deck[and Stair] Framing: [Select Structural] [Select] [No. 1] [No. 2] grade and[any of] the following species:

1. Mixed southern pine; SPIB.

PRESERVATIVE TREATMENT

Pressure treat boards and dimension lumber with waterborne preservative according to AWP A U1; Use Category UC3B[for exterior construction not in contact with the ground, and Use Category UC4A for non-critical items in contact with the ground and water].

Pressure treat timber for non-critical applications with waterborne preservative according to AWP A U1; Use Category UC4A.

Pressure treat poles with waterborne preservative according to AWP A U1; Use Category [UC4A] [UC4B] or [UC4C].

Preservative Chemicals: Those listed in AWP A U1 for the chosen wood species and Use Category or MCA, MCQ, uCA-C as specified in their respective ICC-ES Evaluation Reports.

Use process [for boards and dimension lumber] that includes water-repellent treatment.

Use process [for boards and dimension lumber] that does not include water repellents or other substances that might interfere with application of indicated finishes.

After treatment, redry [all] treated wood to [15] [19] percent maximum moisture content.

Mark treated wood with treatment quality mark of an inspection agency approved by ALSC's Board of Review.

1. For items indicated to receive a stained or natural finish, [mark each piece on surface that will not be exposed] [or] [omit marking and provide certificates of treatment compliance issued by inspection agency].

Retention Specifications:

1. UC4A Retentions: Decking, stair treads.
2. UC4B Retentions: Framing members, sills and ledgers, members in contact with masonry or concrete, posts, round wood poles, walls, curbs.

FASTENERS

General: Provide fasteners of size and type indicated, acceptable to authorities having jurisdiction, and that comply with requirements specified in this article for material and manufacture. Provide nails and screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

1. For pressure-preservative-treated wood, use stainless-steel fasteners.

Nails: ASTM F 1667.

Power-Driven Fasteners: ICC-ES AC70.

Wood Screws and Lag Screws: ASME B18.2.1, ASME B18.6.1, or ICC-ES AC233.

Carbon-Steel Bolts: ASTM A 307 with ASTM A 563 hex nuts and, where indicated, flat washers all hot-dip zinc coated.

Stainless-Steel Bolts: ASTM F 593, Alloy Group 1 or 2; with ASTM F 594, Alloy Group 1 or 2 hex nuts and, where indicated, flat washers.

Postinstalled Anchors: Stainless-steel, [chemical] [or] [torque-controlled expansion] anchors with sizes and embedments to meet the capacity requirements indicated on the drawings.

1. Stainless-steel bolts and nuts complying with ASTM F 593 and ASTM F 594, Alloy Group 1 or 2.

METAL FRAMING ANCHORS

Manufacturers: Subject to compliance with requirements, [provide products by the following] [provide products by one of the following] [available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following]:

Basis-of-Design Products: Subject to compliance with requirements, provide [products indicated on Drawings] <Insert manufacturer's name; product name or designation> or comparable products by one of the following:

1. Cleveland Steel Specialty Co.
2. KC Metals Products, Inc.
3. Phoenix Metal Products, Inc.
4. R. H. Tamlyn & Sons LP.
5. Simpson Strong-Tie Co., Inc.
6. USP Structural Connectors.
7. <Insert manufacturer's name>.

Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer that meet or exceed those [indicated on Drawings] [of basis-of-design products] [of products of manufacturers listed]. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, [G60] [G90] [G185] coating designation.

Stainless-Steel Sheet: ASTM A 666, [Type 304] [Type 316].

Joist Hangers: U-shaped, with 2-inch- long seat and 1-1/4-inch- wide nailing flanges at least 85 percent of joist depth.

1. Thickness: [0.050 inch] [0.062 inch].

Top Flange Hangers: U-shaped joist hangers, full depth of joist, formed from metal strap with tabs bent to extend over and be fastened to supporting member.

1. Strap Width: [1-1/2 inches] [2 inches].
2. Thickness: [0.050 inch] [0.062 inch].

Post Bases: Adjustable-socket type for bolting in place with standoff plate to raise post 1 inch above base and with 2-inch- minimum side cover, socket 0.062 inch thick, and standoff and adjustment plates 0.108 inch thick.

Joist Ties: Flat straps, with holes for fasteners, for tying joists together over supports.

1. Width: [3/4 inch] [1-1/4 inches].
2. Thickness: [0.050 inch] [0.062 inch].
3. Length: [16 inches] [24 inches] [As indicated].

CONCEALED DECKING FASTENERS

Deck Splines: Corrosion-resistant metal or plastic splines that fit in grooves routed into the sides of decking material and are fastened to deck framing with screws. Splines provide uniform spacing of decking material.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

- a. Blue Heron Enterprises, LLC; Eb-Ty Hidden Deck-Fastener.
- b. Grabber Construction Products; Deck Clip.
- c. Ipe Clip Fastener Company Inc. (The); Ipe Clip.
- d. KK Mfg. Co., Inc; Lumber Loc Hidden Deck Fasteners.
- e. M. M. Products, Inc; Invisi-Fast Biscuit.
- f. Titan Metal Werks, Inc; DeckEase Hidden Deck Fasteners.
- g. <Insert manufacturer's name; product name or designation>.

Deck Clips: Black-oxide-coated, stainless-steel clips designed to be fastened to deck framing with screws, and to secure decking material with teeth that also provide uniform spacing of decking material.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

- a. Tiger Claw Inc; Tiger Claw Hidden Deck Fasteners.
- b. <Insert manufacturer's name; product name or designation>.

Deck Tracks: Formed metal strips designed to be fastened to deck framing and to secure decking material from underside with screws. Made from epoxy-powder-coated, hot-dip galvanized steel or stainless steel.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

- a. Grabber Deckmaster; Deckmaster.
- b. Ty-Lan Enterprises Inc; Shadoe Track.
- c. <Insert manufacturer's name; product name or designation>.

PART 3 - EXECUTION

EXAMINATION

Examine substrates and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

Proceed with installation only after unsatisfactory conditions have been corrected.

PREPARATION

Clean substrates of projections and substances detrimental to application.

Prime wood [indicated to be painted], including both faces and edges. Cut to required lengths and prime ends. Comply with requirements in Section 099113 "Exterior Painting."

Stain wood [indicated to be stained], including both faces and edges. Cut to required lengths and stain ends. Comply with requirements in Section 099300 "Staining and Transparent Finishing."

INSTALLATION, GENERAL

Set work to required levels and lines, with members plumb, true to line, cut, and fitted. Fit work to other construction; scribe and cope as needed for accurate fit.

Framing Standard: Comply with AF&PA WCD1 unless otherwise indicated.

Install wood decking [and stair treads] with crown up (bark side down).

Install plastic lumber to comply with manufacturer's written instructions.

1 Secure decking to framing with [deck splines] [deck clips] [deck tracks] [or] [screws].

2
3 Do not splice structural members between supports unless otherwise indicated.

4
5 Provide blocking and framing as indicated and as required to support facing materials, fixtures, specialty
6 items, and trim.

7
8 Sort and select lumber so that natural characteristics do not interfere with installation or with fastening
9 other materials to lumber. Do not use materials with defects that interfere with function of members or
10 pieces that are too small to use with minimum number of joints or optimum joint arrangement.

11
12 Apply copper naphthenate field treatment to comply with AWPA M4, to cut surfaces of preservative-
13 treated lumber.

14
15 Securely attach exterior rough carpentry work to substrate by anchoring and fastening as indicated,
16 complying with the following:

- 17 1. ICC-ES AC70 for power-driven fasteners.
- 18 2. "Fastening Schedule" in ICC's International Building Code.
- 19 3. "Fastener Schedule for Structural Members" and "Alternate Attachments" in ICC's
20 International Residential Code for One- and Two-Family Dwellings.

21
22 Use [screws] [common wire nails] unless otherwise indicated. Select fasteners of size that do not fully
23 penetrate members where opposite side are exposed to view. Make tight connections between members.
24 Install fasteners without splitting wood; do not countersink nail heads unless otherwise indicated.

25
26 For exposed work, arrange fasteners in straight rows parallel with edges of members, with fasteners evenly
27 spaced and with adjacent rows staggered.

28 29 **ELEVATED DECK JOIST FRAMING INSTALLATION**

30 General: Install joists with crown edge up and support ends of each member with not less than 1-1/2 inches
31 of bearing on wood or metal, or 3 inches on masonry. Attach floor joists where framed into wood
32 supporting members by using wood ledgers as indicated or, if not indicated, by using metal joist hangers.
33 Do not notch joists.

34
35 Frame openings with headers and trimmers supported by metal joist hangers; double headers and trimmers
36 where span of header exceeds 48 inches.

37
38 Lap members framing from opposite sides of beams or girders not less than 4 inches or securely tie
39 opposing members together. Provide solid blocking of 2-inch nominal thickness by depth of joist over
40 supports.

41
42 Provide solid blocking of 2-inch nominal thickness by depth of joist at intervals of 96 inches o.c., between
43 joists.

44 45 **RAILING INSTALLATION**

46 Balusters: Fit to railings, [glue, and] [nail] [screw] in place. Countersink fastener heads, fill flush, and
47 sand filler.

48
49 Newel Posts: Secure to stringers and risers with [through bolts] [lag screws] [countersunk-head wood
50 screws and glue].

51
52 Railings: Secure wall rails with metal brackets. Fasten freestanding railings to newel posts and to trim at
53 walls with countersunk-head wood screws or rail bolts [and glue].

54
55 **END OF SECTION**

SECTION 32 91 13.50
STORMWATER BIOINFILTRATION
BASED ON DFD MASTER SPECIFICATION DATED 02/17/2016

PART 1 - GENERAL

SCOPE

The work under this section shall consist of providing all work, materials, labor, equipment and supervision necessary to construct Stormwater Bioinfiltration Devices. The work under this section does not include providing all work, materials, labor, equipment, and supervision necessary to install plantings for the Stormwater Bioinfiltration Device. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference Standard
- Submittals
- Quality Assurance

PART 2 - MATERIALS

- Geotextile Fabric
- Pipe
- Aggregates
- Sand
- Compost
- Engineered Soil
- Erosion Mat

PART 3 - EXECUTION

- Protection Measures
- Temporary Erosion and Sediment Controls
- Excavation
- Storage Layer
- Underdrain Pipe
- Pea Gravel
- Filter Fabric
- Engineered Soil
- Erosion Mat

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

- Section 30 05 00 – Common Work Results For All Exterior Improvements
- Section 31 20 00 – Earthmoving
- Section 31 25 00 – Erosion Control
- Section 32 84 00 – Irrigation
- Section 32 91 13 – Soil Preparation
- Section 32 92 00 – Plants
- Section 32 92 20 – Native Seeding
- Section 32 97 00 – Landscape Maintenance And Warranty

REFERENCE STANDARDS

WISDOT	PAL	Wisconsin Erosion Control Product Acceptability List (PAL)
WISDOT	SSHSC	Standard Specifications for Highway and Structure Construction
WI DNR	Standard 1002	– Site Evaluation for Stormwater Infiltration
WI DNR	Standard 1004	– Bioretention for Infiltration
WI DNR	S100	– Specification for Compost

SUBMITTALS

Provide product data for the following materials:

- Geotextile Fabrics
- Pipe
- Aggregates
- Sand
- Compost
- Engineered Soil
- Erosion Mat

Provide product data for engineered soil blend components: Sand and Compost in compliance with WI DNR Standard 1004 – Bioretention for Infiltration for review and approval by DFD Project Representative.

QUALITY ASSURANCE

Contractor shall submit, in writing to DFD Project Representative, a certification from compost supplier that any compost used on the project is in compliance with the requirements outlined in WDNR Specification S100.

Contractor shall submit, in writing to DFD Project Representative, a certification from engineered soil supplier that any engineered soil used on the project is in compliance with the requirements outlined in WI DNR Standard 1004 Bioretention for Infiltration.

PART 2 - MATERIALS

GEOTEXTILE FABRIC

Pipe Sock

The openings of the geotextile fabric shall be small enough to prevent sand particles from entering the underdrain pipe. The fabric shall meet the requirements of the WisDOT SSSHC Section 612.2.8

Filter Fabric

The fabric shall meet the requirements of the WisDOT SSSHC Section 645.2.4, Geotextile Fabric Type DF, Schedule B.

PIPE

Underdrain Pipe

Pipe shall be corrugated HDPE or PVC, Schedule 40.

Pipe shall have a minimum diameter of 6-inches.

Pipe shall have perforations.

The pipe shall be covered with a filter sock if the storage layer is sand. The filter sock shall conform to the material requirement for Geotextile Fabric.

Cleanout Pipe

The cleanout pipe shall be rigid, non-perforated PVC covered with a watertight cap.

AGGREGATES

All aggregates used in the construction of Stormwater Bioinfiltration devices shall be double washed and free of organic material and fines.

Storage Layer Aggregate

The aggregate used for the storage layer shall meet the following gradation requirements:

Sieve	Size	Percent Passing by Weight
-------	------	---------------------------

1	2-inch	100
2	1 ½-inch	90-100
3	1-inch	20-55
4	¾ –inch	0-15
5	3/8 – inch	0-5

Clear Stone Bedding

Washed angular stone or pea gravel shall be used to cover the underdrain pipe. Washed angular stone or pea gravel, graded from 3/8" to 1/4".

SAND

The preferred sand component consists of mostly SiO₂, but sand consisting of dolomite or calcium carbonate may also be used.

Manufactured sand or stone dust is not allowed.

The sand shall be washed and drained to remove clay and silt particles prior to mixing.

Sand shall meet one of the following gradation requirements:

- USDA Coarse Sand (0.02-0.04 inches)
- ASTM C33 (Fine Aggregate Concrete Sand)
- WisDOT SSHSC Section 501.2.5.3.4 (Fine Aggregate Sand)

COMPOST

Compost shall meet the requirements of WI DNR Specification S100 – Compost.

Engineered Soil shall comply with WI DNR Standard 1004. Engineered Soil shall be a blend of Sand and Compost.

Engineered Soil shall consist of a mixture of 70 to 85% Sand and 15 to 30% Compost. The percentages are based on volume.

Engineered soil mix shall be free of rocks, stumps, roots, brush or other material over 1 inch in diameter. No other materials shall be mixed with the planting soil that may be harmful to plant growth or prove a hindrance to planting or maintenance.

Engineered soil mix shall have a pH between 5.5 and 8.0.

Do not fertilize.

Thoroughly blend engineered soil off-site before delivering to site and installing.

Engineered soil shall be delivered to the site and stored on plastic sheeting.

The moisture content shall be low enough to prevent clumping and compaction during placement.

EROSION MAT

Erosion Mat shall comply with the PAL for Urban, Class 1, Type B as defined by Standard Specifications for Highway and Structure Construction and the PAL. Erosion mat shall be American Excelsior-Curlex Net-Free, Erosion Control Blanket-S32BD, Western Excelsior-Excel SS-2 All Natural, Ero-Guard EG-25 (NN), Erosion Tech ETRS2BN or approved equal.

1 **PART 3 - EXECUTION**

2 **PROTECTION MEASURES**

3 Pre-Installation Meeting

4 Prior to the installation of the Stormwater Bioinfiltration Device, the A/E), the DFD Project
5 Representative, and the Contractor shall conduct a pre-installation meeting.

6
7 Stabilization

8 Construction of the Stormwater Bioinfiltration Device shall not begin until after the contributing drainage
9 area has been stabilized with vegetation and/or hardscapes. Construction site runoff from disturbed areas
10 shall not be allowed to enter the Stormwater Bioinfiltration Device.

11
12 Weather

13 Construction shall be suspended during periods of rainfall or snowmelt. Construction shall remain
14 suspended of ponded water is present or if residual soil moisture contributes significantly to the potential
15 for soil smearing, clumping, or other forms of compaction.

16
17 Delays resultant from weather shall not serve as a basis for a Change Order.

18
19 Compaction Avoidance

20 Compaction and smearing of the soils beneath the floor and side slopes of the Stormwater Bioinfiltration
21 area, and compaction of the soils used for backfill shall be minimized.

22
23 During construction, the area dedicated to the Stormwater Bioinfiltration Device shall be cordoned off to
24 prevent access by heavy equipment.

25
26 Acceptable equipment for constructing the Stormwater Bioinfiltration Device includes excavation hoes,
27 light equipment with turf type tires, marsh equipment, or wide-track loaders.

28
29 Compaction Remediation

30 If compaction occurs at the base of the Stormwater Bioinfiltration Device, the soil shall be refractured to a
31 depth of at least 24-inches.

32
33 If smearing occurs the smeared areas shall be corrected by raking or roto-tilling.

34
35 Compaction and smearing remediation shall be conducted by the Contractor at no additional costs to the
36 Owner.

37
38 Field Infiltration Testing

39 Immediately after rough grading of Stormwater Bioinfiltration Devices, provide field infiltration testing
40 conducted by a third-party testing agency to verify infiltration rates for all Stormwater Bioinfiltration
41 Devices. Field tests shall be conducted using a Double-Ring Infiltrometer per ASTM D3385. Calculate
42 infiltration rates in accordance with Wisconsin Department of Natural Resources (WDNR) Site Evaluation
43 for Stormwater Infiltration, Standard 1002. Frequency of testing shall be 1 test per 5000 square feet of
44 surface area of the Stormwater Infiltration Device measured at the design high water level and at least one
45 test per device. Furnish a report of the test results to Architect/Engineer.

46
47 **TEMPORARY EROSION AND SEDIMENT CONTROLS**

48 The Contractor shall install temporary erosion and sediment controls prior to beginning construction of the
49 Stormwater Bioinfiltration Device. The temporary erosion and sediment controls shall divert stormwater
50 runoff away from the Stormwater Bioinfiltration Device until it is completed.

51
52 **EXCAVATION**

53 Excavation equipment shall work from the sides of the Stormwater Bioinfiltration Device to excavate the
54 area to the depths and dimensions as shown on the Drawings. Excavation equipment shall have adequate
55 reach so that they do not need to be located within the footprint of the Stormwater Bioinfiltration Device to
56 excavate it.

Any accidental compaction shall be remediated as prescribed above.

Upon excavation to the depth indicated in the drawings, the Contractor shall rip the swale or basin bottom soils to a depth of [__] to [__] inches to promote greater infiltration or to reach a permeable sub layer.

STORAGE LAYER

Place the Storage Layer Aggregate to the depth as indicated in the Drawings.

UNDERDRAIN PIPE

Install underdrain pipe at the invert elevations indicated in the Drawings. Pipe shall be installed with a minimum slope of 0.005 ft/ft. Pipe joints shall be made in accordance with the manufacturer's recommendation. Standard pipe fittings shall be used.

Install cleanouts where shown. Cleanouts shall be installed with a watertight cap located flush with the surface of the Stormwater Bioinfiltration Device.

Connect pipe to drainage structure as indicated in the Drawings.

CLEAR STONE BEDDING

Clear Stone Bedding above the underdrain pipe to a thickness indicated in the Drawings.

Clear Stone Bedding layer shall be installed between the Storage Layer Aggregate and the Engineered Soil.

FILTER FABRIC

Install filter fabric around engineered soil extents including sides and bottom to separate from Engineered Soil and Storage Layer as shown in the Construction Drawings, overlapping edges a minimum of 6".

ENGINEERED SOIL

Verify moisture condition of Engineered Soil is low enough to prevent clumping and compaction during placement. Engineered Soil shall not be placed unless it meets these conditions.

Place Engineered Soil in lifts not to exceed 12 inches in depth until the desired elevation of the Stormwater Bioinfiltration Device is achieved.

Re-examine the surface within 48 to 72 hours following placement of Engineered Soil. Place additional Engineered Soil until desired elevation of the Stormwater Bioinfiltration Device is achieved at no additional costs to the Owner.

Steps may be taken to induce mild settling of the Engineered Soil as needed to prepare a stable planting medium and to stabilize the ponding depth.

Vibrating plate style compactors shall not be used to induce settling.

No equipment travel on or across placed Engineered Soil is permitted.

Install silt fence or other means of erosion control around the perimeter of the engineered soil to protect from siltation or contamination from adjacent landscape or paved surfaces and construction activities. Leave erosion control in place until site landscape establishment and construction is complete.

EROSION MAT

Install Erosion Mat on top of surface prior to installation of vegetation.

END OF SECTION

SECTION 32 97 00
LANDSCAPE MAINTENANCE AND EXTENDED WARRANTY
Based On DFD Master Specification Dated 02/17/2016

PART 1 - GENERAL

SCOPE

These specifications, along with contract drawings apply to those items necessary for and incidental to the maintenance of the landscape planting, seeding or sodding activities specified in the contract. The scope includes the maintenance activities of fertilizing, pruning and watering.

PART 1 - GENERAL

- Scope
- Related Work
- Definitions
- References
- Quality Assurance
- Job Conditions

PART 2 - PRODUCTS

- Materials

PART 3 – MAINTENANCE

- General Requirements
- Plant Maintenance
- Turf Maintenance
- Integrated Pest Management and Pesticide Applications
- Native Seeding Maintenance
- Basis of Payment

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

- Section 31 91 13 Soil Preparation
- Section 32 92 00 Plants
- Section 32 92 19 Seeding
- Section 32 92 20 Native Seeding
- Section 32 92 23 Sodding

DEFINITIONS

Landscape Maintenance Provider – Insured and bonded contractor, with a minimum of 5 years of experience in landscaping including grading, seeding, sodding, planting and hardscapes. The landscape contractor's shop shall be located within 125 miles of the project location, as documented by legal documents or postmarked mail. The Landscape Contractor shall be the Landscape Maintenance Provider.

REFERENCES

ANSI Z60.1	American Standards for Nursery Stock
ANSI A300	American National Standard for Tree Care Operations - Tree, Shrub and Other Woody Plant Maintenance-Standard Practices
WisDOT	Standard Specifications for Highway and Structure Construction
	Standardized Plant Names, Second Edition (1942). American Joint Committee on Horticulture Nomenclature, Horace McFarland Company, Harrisburg, PA.

QUALITY ASSURANCE

Soil Analysis: For each unamended soil type, furnish soil analysis and a written report by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of the soil.

Testing methods and written recommendations shall comply with USDA's Handbook No. 60.

The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be taken per instructions from Architect. A minimum of **three** representative samples shall be taken from varied locations for each soil to be used or amended for planting purposes.

Report suitability of tested soil for plant growth.

Based upon the test results, state recommendations for soil treatments and soil amendments to be incorporated. State recommendations in weight per 1000 sq. ft. or volume per cu. yd. for nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce satisfactory planting soil suitable for healthy, viable plants.

Report presence of problem salts, minerals, or heavy metals, including aluminum, arsenic, barium, cadmium, chromium, cobalt, lead, lithium, and vanadium. If such problem materials are present, provide additional recommendations for corrective action.

Fertilizer shall be delivered to the site in original, sealed containers, and stored in a waterproof space. Containers shall bear the manufacturer's name, analysis, trademark and guarantee as per standards of the Wisconsin Department of Agriculture.

JOB CONDITIONS

Protect all plants, lawns, and grass areas from damage at all times. Damaged plants, lawns or grass areas shall be replaced or treated as required to conform to specifications herein for fresh stock.

Work areas shall be kept clean and orderly during the installation period. Under no condition shall debris from planting activities result in a safety hazard on-site or to adjacent off-site property.

Damage to lawns or grass areas incurred as a result of replacement operations shall be repaired by Maintenance Provider at no cost to Owner.

PART 2 - PRODUCTS

MATERIALS

Topsoil: Naturally fertile, agricultural soil, capable of sustaining vigorous growth, of uniform composition throughout, without admixtures of subsoil, free of clay, stones larger than 1" inch diameter, roots, trash and debris of any kind, supplied by Maintenance Provider at his/her expense, and subject to approval by the Owner or Architect/Engineer.

Organic Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings. Organic Matter Content: 50 to 60 percent of dry weight.

Organic Compost: Compost meeting Wisconsin Department of Natural Resources Specification S100 Compost.

Fertilizer: Granular, non-burning product composed of not less than fifty (50) percent organic slow-acting, guaranteed analysis professional fertilizer. Commercial fertilizer shall conform to Wisconsin State Statutes, Section 94.64, and meet the standards of the Wisconsin Department of Agriculture as to registration and labeling. Fertilizer shall be specified in the contract documents as to composition, but is subject to revision to suit project site conditions.

Organic Mulch: Double Shredded Bark, free of material detrimental to healthy plant growth. Organic Mulch shall be 1/8" nominal thickness, with at least fifty (50) percent having an area of not less than 1 sq. inch, and no piece having an area of more than 6 sq. inches.

Stakes: 6-8 foot (1.8 - 2.4 m) long sections of unflanged metal, or 2" x 2" (5.1 cm x 5.1 cm) hardwood.

Flexible Support ties: 2" (5.1 cm) or wider bands of polypropylene, or elasticized or webbed strapping.

Wrapping material: Biodegradable geotextile (fabric) trunk wrap, or waterproofed crepe wrapping paper, secured with 1" (2.5 cm) wide masking tape.

1 **Nonselective Herbicides:** EPA registered and approved glyphosate based herbicide for *upland* use (broad
2 spectrum, non-persistent) intended for vegetation removal while preparing seed beds and for maintenance
3 during establishment period and recommended surfactants and adjuvants.
4

5 EPA registered and approved glyphosate based herbicide for *wetland* use (broad spectrum, non-persistent)
6 intended for vegetation removal while preparing seed beds and for maintenance during establishment
7 period and recommended surfactants and adjuvants.

8 Pre-emergent Herbicide effective for controlling the germination or growth of weeds within planted
9 areas at the soil level directly below the mulch layer.

10
11 Post-Emergent Herbicide effective for controlling weed growth that has already germinated.
12

13 **Mycorrhizal Fungi:** Dry, granular inoculant containing at least 5300 spores per lb of vesicular-arbuscular
14 mycorrhizal fungi and 95 million spores per lb of ectomycorrhizal fungi, with a maximum of 5.5 percent
15 inert material
16

17 **Slow-Release Fertilizer:** Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen,
18 phosphorus, and potassium in the following composition:
19

20 Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
21

22 Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a
23 qualified soil-testing laboratory.
24
25

26 **PART 3 - MAINTENANCE**

27 **GENERAL REQUIREMENTS**

28 **Introduction:** This section establishes minimum standards and procedures for grounds maintenance
29 services for Wisconsin Department of Administration Division of Facilities Development. Resource-
30 efficient and sustainable landscape management practices have been incorporated throughout the
31 specifications
32
33

34 **Part of Contract:** This maintenance specification is part of the contract. Compliance with the
35 requirements herein is mandatory. In the event of question or dispute over applicability of any
36 requirement, the requirement shall be assumed to apply, unless DFD provides written clarification stating
37 that it does not.
38
39

40 **Maintenance and Guarantee Period:** The start date for the maintenance period and warranty period for
41 all areas is the date (month, day, and year) that the seeding/planting is considered substantially complete by
42 the Owner. The maintenance period will continue for exactly three (3) years from the start date.
43

44 **Laws, Codes, and Ordinances:** The Landscape Maintenance Provider shall comply with all rules,
45 ordinances, and regulations set forth by the State, or other entity having jurisdiction, which apply to the
46 work site, the Landscape Maintenance Provider, or Landscape Maintenance Provider's personnel.
47

48 **Safety:** The Landscape Maintenance Provider shall comply at all times with all local, state, or other legal
49 requirements for safety, including operating all equipment in conformance with the manufacturer's
50 operating instructions for each, and in compliance with Federal Occupational and Health Safety
51 Administration (OSHA) standards and requirements. The safety provisions of applicable building and
52 construction codes shall be observed. No work shall be performed in any manner or location that may
53 endanger the health, safety, or welfare of all persons, including employees, from foreseeable injury, or
54 damage to property.
55

56 **Protection of Existing Surfaces and Property:** The Landscape Maintenance Provider shall take proper
57 precautions to protect existing vegetation, structures, infrastructure and utilities. Injuries to any person or
58 damage to State property, the property of employees, customers or any property not belonging to the
59 Landscape Maintenance Provider shall be reported immediately to the Owner. Damage or destruction as a
60 result of the Landscape Maintenance Provider's operations shall be repaired or replaced at the Landscape
61 Maintenance Provider's expense and to the satisfaction of the Owner.
62

63 Damage to items covered by this provision include, but are not limited to, curbs, sidewalks, lawns
64 (including scalped areas), plantings, trees, signs, down spouts, and refuse containers. Damages may be the

1 result of, but not limited to power equipment damage to plantings or structures, improper pruning, over or
2 under watering of plant materials, or chemical overspray.

3
4 Replacement of damaged or destroyed plant material shall be of the same size and species or cultivar.
5 Replacement shall occur within two (2) weeks of identification of damage. Substitute or alternative
6 replacement, and scheduling of replacement shall be allowed only by the Owner's written permission.

7
8 The Landscape Maintenance Provider is not responsible for losses, repair or replacement of damaged
9 property due to extreme weather, vandalism, theft, or the acts of others over whom they have no reasonable
10 control.

11
12 The Landscape Maintenance Provider shall inform the Owner of such losses and provide the Owner with
13 the cause and extent of the loss and recommendations for repair or replacement.

14
15 **Interference with Intended Use:** The Landscape Maintenance Provider shall not interfere with the use of
16 this facility and shall conduct its operations so that there is the least possible obstruction and inconvenience
17 to the public and owner.

18
19 The Landscape Maintenance Provider shall provide forty-eight (48) hour advance notice to the Owner
20 whenever maintenance activities prevent normal access to a site or building for a time exceeding two (2)
21 hours. It is the Owner's responsibility to provide notice to building occupants. The Owner will inform the
22 Landscape Maintenance Provider of any special events or circumstances that will limit the Landscape
23 Maintenance Provider's ability to perform maintenance activities.

24
25 **Owner/Landscape Maintenance Provider Communication:** The Landscape Maintenance Provider shall
26 provide the Owner with a phone number where a message can be left for the Landscape Maintenance
27 Provider twenty-four (24) hours a day. The Landscape Maintenance Provider shall respond to messages at
28 this number within twenty-four (24) hours. The Landscape Maintenance Provider shall also provide a
29 number where immediate contact can be made in the event of emergencies.

30
31 In the event of imminent danger of injury to the public or damage to property, the Owner will attempt to
32 contact the Landscape Maintenance Provider using the emergency number provided. If the Landscape
33 Maintenance Provider does not respond within four (4) hours, the Owner reserves the right to effect such
34 repairs itself or with another Maintenance Provider.

35
36 The Landscape Maintenance Provider shall provide the Owner with names and phone numbers of
37 maintenance supervisors and other key personnel and further advise the Owner of personnel substitutes or
38 replacements.

39
40 The Landscape Maintenance Provider, or other key personnel, shall attend meetings and site inspections as
41 requested by the Owner.

42
43 **Maintenance Record Keeping:** The Landscape Maintenance Provider shall maintain an itemized log of
44 schedule and tasks performed. The log is to be submitted monthly to the Owner and complete set of
45 records submitted with the maintenance plan.

46
47 **Extra Work:** The Landscape Maintenance Provider shall submit requests for work that requires additional
48 payment in writing. The Landscape Maintenance Provider shall not start work until the request has been
49 approved in writing. Failure to obtain advance approval may result in non-payment or delays in processing
50 payment.

51
52 The Landscape Maintenance Provider may not change the regular maintenance schedule due to
53 unscheduled or extra work unless authorized by the Owner.

54
55 **Complaint Response:** All complaints shall be abated as soon as possible after notification; but in all cases
56 within forty-eight (48) hours or as required by the Owner.

57
58 **Contract Renegotiation:** The Owner reserves the right to renegotiate the maintenance contract due to a
59 change in ownership of the site, concurrent construction at the site that affects maintenance tasks, or due to
60 other changes at the site that eliminate the need for certain tasks.

61
62 **Failure to Perform:** The Owner may terminate the contract at any time at its sole discretion by delivering
63 thirty (30) days written notice to the Landscape Maintenance Provider. Upon termination, the Owner's
64 liability will be limited to the pro rata cost of the services performed as of the date of termination plus

1 expenses incurred with the prior written approval of the Owner. In the event the Landscape Maintenance
2 Provider terminates the contract, such termination will require written notice to that effect to be delivered
3 by the Landscape Maintenance Provider to the Owner not less than ninety (90) days prior to said
4 termination.

5
6 **General Practice Guidelines:** This document is a benchmark of minimum standards for grounds
7 maintenance. All sites governed by these specifications shall be maintained with good horticultural
8 practices to ensure normal and healthy growth of landscape plantings, and in a resource-efficient,
9 sustainable, and cost-effective manner.

10
11 The Landscape Maintenance Provider shall furnish all labor, equipment, materials, and transportation
12 necessary to complete the maintenance of landscape improvements as specified herein. The Landscape
13 Maintenance Provider shall provide services at whatever frequency is necessary to meet the specified
14 standards.

15
16 The Landscape Maintenance Provider shall acquaint himself with the location of utilities, which may be
17 encountered or be affected by the work, and shall be responsible for damage caused by failure to provide
18 proper precautions or protection. Consult with the Owner and contact Digger's Hotline to locate existing
19 underground utilities prior to performing any work requiring subsurface excavation.

20
21 All turf shall be mowed with professional quality mulch-mowing equipment. Prior to award of contract,
22 the Landscape Maintenance Provider shall provide the Owner with the manufacturer
23 and model of equipment to be used.

24
25 Mowers, trimmers and other equipment shall be properly maintained to operate at "normal" operating
26 sound levels. Equipment that is generating excessive noise or is otherwise objectionable to the Owner or
27 building tenants shall be discontinued from use, at the Owner's request, until repairs can be affected.

28
29 The Landscape Maintenance Provider is encouraged to use non-polluting devices like rakes and brooms
30 when feasible. The Owner prefers low-decibel, low-fossil fuel consumption, and low-emissions models of
31 blowers, trimmers, and other power equipment. Do not use blowers around parked cars to avoid scratching
32 vehicle paint with blowing sand and debris. Do not blow trash or debris onto the property of others.

33 34 **PLANT MAINTENANCE (TREES, SHRUBS AND PERNNIAL PLANTS)**

35
36 **Inspection and Acceptance:** Owner and the Agency Contact responsible for maintenance following
37 acceptance shall perform inspections with the Maintenance Provider of all plant material at one (1) week
38 and three (3) week intervals (or other specified interval) after the original planting to note and correct any
39 discrepancies from the contract. Plants that are alive and healthy following the three (3) week (or other
40 time frame specified) inspection shall be accepted.

41
42 Acceptance of plant material by Owner shall reflect general conformity with the *American Standards for*
43 *Nursery Stock* as to specified size, character and quality. Acceptance shall not relieve the Maintenance
44 Provider of responsibility for full conformity to the contract documents and the guarantee period. Any
45 defects or imperfections appearing in whole or any part of the work caused by or due to any fault or
46 negligence on the part of the Maintenance Provider shall be corrected before the work is accepted.

47
48 Planting work may be accepted in stages when the Maintenance Provider and Owner deem that practice to
49 be in their mutual interest. Approval must be given in writing by Owner to the Maintenance Provider
50 verifying that work may be completed in stages. Acceptance of planting work in stages shall not waive any
51 other provisions of the contract.

52
53 **Warranty:** At the end of the first full growing season (on, or around September 15th) Maintenance
54 Provider shall arrange to meet with the Owner to coordinate initial acceptance. Owner will provide the
55 Maintenance Provider with a list of any final punch list items that need to be performed. Upon confirmation
56 that the punchlist items were completed, a letter of acceptance will be issued.

57
58 All plants shall be warranted to be in healthy and flourishing condition after the end of one full growing
59 season. The warranty shall not cover damage from vandalism, animals, freezing rains, or winds of sixty
60 (60) miles per hour or greater, if the Maintenance Provider burlaps or otherwise protects any plants that
61 he/she feels could be damaged during the warranty period.

62
63 Maintenance Provider shall warranty all planting for an additional two full growing seasons after Initial
64 Acceptance for a total warranty/maintenance period of three full growing seasons.

At any time during the warranty period, the Maintenance Provider shall remove or replace, without cost to the Owner, and within a specified planting period, all plants not in a healthy and flourishing condition as determined by the Owner or Architect/Engineer.

Replacement plants shall be subject to the same specified requirements of the contract. The warranty of replacement plants shall extend until June 30 after the end of one full growing season. In the event that a replacement plant is not acceptable during, or at the end, of the said warranty extension period, Owner may choose between subsequent replacement or credit for that item.

Include the following remedial actions as a minimum:

- Immediately remove dead plants and replace unless required to plant in the succeeding planting season.

- Replace plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.

- A limit of one replacement of each plant will be required except for losses or replacements due to failure to comply with requirements.

Warranty /Performance Standards: at the end of the Warranty Maintenance Period and at the time of final acceptance of the following performance standards shall be met:

- 100% of the wood material shall be alive and growing in a healthy condition.

- 97% of the planted plugs and container-grown plants shall be alive and in a healthy condition.

Cleaning: Soil, branches, binding and wrapping material, rejected plants, or other debris resulting from plant installation shall be promptly cleaned up and removed. New landscape construction in and around the planting areas are to be especially well-cleaned.

Pruning: Prune in accordance with current *American National Standards (ANSI) for Tree Care Operations*. Perform all pruning work in a manner consistent with the landscape design intent. Plants overhanging and blocking pedestrian and/or vehicular paths shall be pruned as needed to allow the desired clearance.

Except in the cases of hedges, or to conform to some design intent, all pruning of ornamental trees, shrubs and ground covers should aim to retain their natural shapes. With multiple leader plants, preserve the leader that best promote the plant's symmetry. Prune branches of deciduous stock to improve the branch structure of the plant.

Trim Oaks only during the low Oak wilt risk period between November 1 and March 15.

Trim Honeylocusts, and Elms while dormant to reduce disease risk. Other trees may be trimmed at other times of the year, except during leaf-out, or at the time of leaf drop.

Plants that flower before late spring should be pruned immediately after flowering. Those that flower in summer or fall should be pruned in winter or spring before new growth emerges.

Prune evergreens only to remove dead, broken or damaged branches. Prune yews, junipers, hemlocks and arborvitae after new growth has hardened off in late summer.

Where necessary, repairs to damaged wood shall be performed under the direction of Owner, or a certified arborist.

Prune using scissors-style cutting devices, and not anvil-style hand pruners, pole pruners or loppers.

The Maintenance Provider shall remove all trimmed branches and other debris from the site at the end of each work day.

Fertilizing: Any and all chemical applications are to be performed in accordance with current federal, state and local laws, through EPA-registered materials and application techniques, and performed under the supervision of a licensed certified applicator. Apply fertilizer to planted areas at the specified rate, and as per manufacturer's recommendations.

Excessive nutrients can be a hindrance in establishing native perennials and plugs. Do not apply fertilizer in these planting areas unless approved by the Owner.

1 **Watering:** All plant materials installed under contract shall be watered within the first 24 hours of initial
2 planting and not less than twice weekly until final acceptance by the Owner. Additional watering may be
3 required during the warranty period. Water used shall be of sufficient quality for irrigation and free of
4 materials harmful to plant growth.

5
6 **Pesticide:** Any use of pesticides during the contracted maintenance period, as determined by the Owner,
7 shall utilize the minimum amount of approved pesticide needed to control pests on plant materials installed
8 under the contract. Pesticide applications are to be performed in accordance with current federal, state and
9 local laws, through EPA-registered materials and application techniques, and performed under the
10 supervision of a licensed certified applicator. Apply at the specified rate, and as per manufacturer's
11 recommendations.

12
13 **Native perennials and plugs:** Maintain for the warranty period by watering, weeding and other operations
14 as required to establish healthy, viable plantings. Do not let weedy volunteer species exceed 10% of the
15 ground cover. Hand weed and/or use appropriate herbicide (by licensed applicator) at a minimum of twelve
16 times each growing season during the maintenance period. Submit dated time sheets of required
17 maintenance operations to Owner. Hand pulling should include removal of all above ground and below
18 ground stems, roots and flower masses prior to development of seeds. Care should be taken to disturb as
19 little soil as possible during the hand pulling to avoid exposure of additional weed seed in the soil layer and
20 protect adjacent plantings.

21
22 **Wildlife Control Measures:** Maintenance Provider shall monitor the plantings during the warranty period
23 to identify predation by wildlife and take all reasonable measure to protect the plant material from
24 predation. These measures may include fencing, barriers, repellents, and frightening devices.

25
26 At the conclusion of the warranty/maintenance period, the maintenance provider shall conduct a half-day
27 training session with the Owner's maintenance staff to review existing conditions and discuss required
28 maintenance activities for each distinct type of plant community. The following issues shall be reviewed:
29 monitoring plant health and spread of weed species; yearly mowing and/or prescribed burning operations/
30 control methods for removing weed species; herbivore protection; and enhancement /repair operations.
31 Long-term stewardship recommendations will be provided to the Owner's staff in writing.

32 33 **TURF MAINTENANCE**

34
35 Maintenance shall consist of all facets of care for low maintenance lawns.

36
37 **Fertilization:** The Maintenance Provider shall provide soil tests performed by an approved laboratory
38 during the first year of the contract to determine turf fertility and pH requirements. Collect samples from at
39 least five (5) locations in the turf area and combine into one (1) composite sample. Collect additional
40 composite samples where turf is visibly non-uniform. Use a soil probe or auger to collect soil (4) inches
41 deep. Submit the test results and recommendations to the Owner.

42
43 Fertilize turf areas with slow-release synthetic (supplies at least twenty-five to fifty percent (25-50%) slow-
44 release nitrogen), organic, or a combination fertilizer as required to provide deep rooting and a healthy,
45 green appearance. Determine application rates from soil test results. The Landscape Maintenance Provider
46 shall submit a fertilizer schedule, listing proposed materials, application rates and timing prior to
47 performing any turf fertilization.

48
49 Apply no more than one (1) pound of nitrogen per one thousand (1000) square feet of turf area at one time.

50
51 Average quality turf shall receive two (2) applications of fertilizer each year, in late spring (Memorial Day)
52 and late fall (Halloween).

53
54 The use of lawn fertilizers with phosphorus is prohibited.

55
56 **Weed Control:** The Landscape Maintenance Provider shall apply the concepts of Integrated Pest
57 Management to turf weed control. Good cultural management practices (mowing, fertilizing, and
58 irrigation) will minimize weed problems.

59
60 Average quality turf: post-emergent herbicides may be applied during the active growing season to control
61 broadleaf weeds when weed cover exceeds forty percent (40%) of turf.

62

Material and method to be used shall be discussed with the Owner prior to any herbicide applications. Spot applications of low-hazard herbicides targeted to the specific weed problem shall be selected whenever possible.

Applications of all weed control products shall conform to Department of Agriculture, Trade and Consumer Protection posting requirements. Applications shall be at the minimum rate allowed on the product label and shall be applied by State certified applicators.

Pre-emergent herbicide crabgrass control may be applied to turf areas by May 1 to prevent crabgrass seed germination. Spot treat only in areas of previous year's infestation. The Landscape Maintenance Provider shall consult with the Owner to determine treatment areas, material and method of application.

Insect and Disease Control: The Landscape Maintenance Provider shall apply the concepts of Integrated Pest Management to turf insect and disease control. The Landscape Maintenance Provider shall monitor all turf areas for insects and diseases and use cultural and mechanical methods of control when possible. Chemical controls shall be used only to specific areas that have been identified by the Landscape Maintenance Provider, in consultation with the Owner, to pose significant risks to the health and appearance of the turf. In such cases, the most effective and least hazardous product shall be used.

Aeration and Thatch Removal: Maintenance tasks under this section shall be performed annually. Aerate with a vertically operating core aerator with hollow tines; cores shall be four (4) inches on center to a three (3) inch depth. Aerate in fall from September to October while turf is actively growing. Aeration may also occur in spring if needed. The Landscape Maintenance Provider shall consult with the Owner to determine whether or not cores can be left on lawn surfaces.

Over-seed after aeration if turf is thin or weed infested, or area is subject to heavy use. Overseeding shall be accomplished with a slice-seeding machine. Seed mix shall be approved by the Owner.

Top-dress turf with one-quarter to one-half ($\frac{1}{4}$ to $\frac{1}{2}$) inch of mature, weed-free compost after aeration and overseeding, as needed and approved by the Owner. Drag or rake after application to get compost into aeration holes and break up clumps of compost and aeration cores.

Remove thatch when its depth reaches one-half ($\frac{1}{2}$) inch on average. Thatch may be naturally decomposed by topdressing with one-quarter ($\frac{1}{4}$) inch of topsoil. Remove thatch mechanically with a vertical mower or de-thatcher. De-thatch in September or October. Landscape Maintenance Provider shall remove and dispose of debris.

Seeding: Reseed or slit-seed bare spots or other areas of turf in need of renovation due to drought or winter kill in early spring or fall. The Landscape Maintenance Provider shall consult with the Owner to determine areas to be reseeded.

Watering: All turf installed under the contract shall be watered within the first 24 hours of initial planting and not less than twice weekly until final acceptance by Owner. Water used shall be of sufficient quality for irrigation and free of materials harmful to plant growth.

Water Source: If this facility is not irrigated it is the responsibility of the Landscape Maintenance Provider to provide a water source if not available or limited from the Owner.

INTEGRATED PEST MANAGEMENT AND PESTICIDE APPLICATIONS

The Landscape Maintenance Provider shall adhere to the principals of Integrated Pest Management (IPM) during landscape maintenance.

General Concepts: Integrated Pest Management is an approach to weed, insect, and disease control that uses regular monitoring to determine if and when treatments are needed, and employs physical, mechanical, cultural, biological, and educational tactics to keep pest numbers low enough to prevent unacceptable damage or annoyance. Chemical treatments are made only when and where monitoring has indicated that the pest will cause unacceptable economic, medical, or aesthetic damage. Treatments are chosen and timed to be most effective and least hazardous to non-target organisms and the general environment.

Pest Monitoring: The Landscape Maintenance Provider shall visually inspect all landscape areas once weekly throughout the contract period to identify potential pest problems. Pest problems include insect, disease, and weed infestations. The presence of a pest does not necessarily mean there is a problem. The Landscape Maintenance Provider shall keep written records of pests identified, areas where problems may

be developing, and controls implemented. The Landscape Maintenance Provider shall educate himself regarding pest identification, pest life cycle, and best control methods including cultural, physical, and biological means.

The Landscape Maintenance Provider shall notify the Owner if a pest problem appears to be developing. The Landscape Maintenance Provider and Owner shall jointly inspect problem areas, review monitoring records, and identify control methods.

Pesticide Applications: Pesticides include all herbicides, insecticides, fungicides, and various other substances used to control pests.

All pesticide applications shall be preceded by monitoring and positive pest identification. Combination products (for example, "weed and feed" or insect control plus fertilizer) shall not be used. Regular calendar-based or preventative applications of pesticides are not allowed unless approved by the Owner.

All pesticides used shall be used in strict accordance with federal, state, county, and local regulations, and applied by a State of Wisconsin certified Commercial Pesticide Applicator per the label directions. All applications must be posted for twenty-four (24) hours after application. All chemicals must have a MSDS filed with the owner. Pesticide application records shall be kept by the Landscape Maintenance Provider and copies provided to the Owner.

The Landscape Maintenance Provider is responsible for verifying that the pesticide used is appropriate for use with the respective plant material. Landscape Maintenance Provider is responsible for any damages incurred as a result of pesticide application and shall repair or replace any such damage at no cost to the Owner

NATIVE SEEDING MAINTENANCE

Immediately reseed areas which do not show a developing stand of cover. Reseeding shall be the same as that originally specified for that particular area. As native mixtures are difficult to assess the first year of growth, satisfactory establishment of the cover crop and general erosion control in these mixes shall constitute baseline establishment. Development of native seeds will be assessed as noted below.

Correct damage resulting from erosion, gullies, rills, or other causes by filling with topsoil, tamping, and reseeding if damage occurs prior to end of warranty period.

Maintenance During Establishment: Begin maintenance immediately after each area is planted and continue until acceptable Native Seeding is established.

Maintain Native Seeding for the first growing season following initial acceptance and through the **third** growing season.

Maintain by mowing the planting when the nurse cover or weed vegetation reaches a height of 10"-12". Mow to a height of 6" except for first mowing which shall be to a 4" height. Mowing can be expected approximately every 3-4 weeks the first season depending on the weed species present. Raking and removal of clippings shall occur when greater than 50% of the plant height is removed.

Water just enough to keep the soil moist, every other day for 15 minutes to half an hour to maintain adequate surface soil moisture for proper seed germination. Watering shall continue for not less than 30 days following seeding. After the first eight weeks water only if it does not rain for one week, continue watering until final acceptance.

During the second and third growing seasons one mowing is required in early June, mow to a 6" height. Mow using a flail type mower, which will finely chop and not smother the new seedlings.

Selectively treat with a broad spectrum, non-persistent glyphosate-based herbicide aggressive weeds such as Canada Thistle and Horsenettle. Treat only on cool windless days preferably by gloved hand wiping method.

Prior to Initial Acceptance and during the Warranty period beginning with the Initial Acceptance:

Weeding Inspection: Inspect the seeded areas at a sufficient frequency to ensure that weeds do not re-seed themselves. Minimum inspection frequency shall include a spring, summer, and fall inspection.

1 Notify the Owner of the inspection no less than 48 hours prior to an inspection. The inspections shall be
2 performed with Owner in attendance. A report of the findings will be sent to the Maintenance Provider
3 including agreed upon maintenance required.
4

5 Implement the appropriate weed control approach(es) within 7 calendar days of the inspection, as
6 conditions allow. If weather and/or site conditions would cause unnecessary damage to the site,
7

8 Notify the Owner and Architect/Engineer and provide a schedule for implementing the maintenance
9 protocols.
10

11 Maintain the weed coverage at less than 10 percent of the seeded area. Weed control methods shall be
12 approved by Owner and the Architect/Engineer.
13

14 Wildlife Control Measures include monitoring the plantings during the warranty period to identify
15 predation by wildlife. Take all reasonable measures to protect the plant material from predation including
16 fencing, barriers, repellents and frightening devices.
17

18 Track maintenance activities performed (including herbiciding, weeding, seeding, wildlife control measures
19 and watering) and provide a written report to the Owner at the end of the first full growing season
20 documenting the completed activities.
21

22 Other maintenance activities may be completed at the Maintenance Provider's discretion to meet the
23 Warranty performance criteria. Notify the Owner of planned additional maintenance activities prior to
24 implementation.
25

26 **Warranty:** At the end of the first full growing season (on, or around September 15th) Maintenance
27 Provider shall arrange to meet with the Owner to coordinate initial acceptance. Owner will provide the
28 Maintenance Provider with a list of any final punch list items that need to be performed. Upon confirmation
29 that the punchlist items were completed, a letter of acceptance will be issued.
30

31 At the time of Initial Acceptance, the following conditions shall be met: The seeded species including cover
32 crop shall provide at least 65% coverage with no area devoid of the seeded species greater than 9 square
33 feet. The weed coverage shall be less than 25%.
34

35 If the Maintenance Provider fails to meet the Warranty performance criteria at the end of the first full
36 growing season, the Owner and the Maintenance Provider shall agree to and approach for increasing the
37 density of the seeded species and/or decreasing the density of the weeds, which may include: herbiciding
38 portions of the seeded area and reseeding, reseeding without herbicide or selective additions of live plants.
39

40 If over 25% of the seeded area requires non-selective herbiciding and reseeding at the end of the first full
41 growing season, the Maintenance Provider shall provide an additional full growing season of maintenance
42 following the warranty period for the reseeded areas.
43

44 Maintenance Provider shall warranty all seeding for an additional two full growing seasons after Initial
45 Acceptance for a total warranty/maintenance period of three full growing seasons. The conditions for final
46 acceptance at the end of the warranty period include: The seeded species shall provide at least 90%
47 coverage with no area devoid of the seeded species greater than 9 square feet and the weed coverage shall
48 be less than 10%.
49

50 **Warranty Inspections:** Owner, will perform a warranty inspection at the end of the first full growing
51 season.
52

53 The inspection will consist of visual inspection each predefined seeded areas.
54

55 The visual inspection will be used to determine conformance with warranty provisions.
56

57 After the warranty inspection, a written inspection report will be provided to the Maintenance Provider
58 documenting the findings and listing the suggested approach for meeting warranty provisions.
59

60 At the conclusion of the warranty/maintenance period, the maintenance provider shall conduct a half-day
61 training session with the Owner's maintenance staff to review existing conditions and discuss required
62 maintenance activities for each distinct type of plant community. The following issues shall be reviewed:
63 monitoring plant health and spread of weed species; yearly mowing and/or prescribed burning operations/

1 control methods for removing weed species; herbivore protection; and enhancement /repair operations.
2 Long-term stewardship recommendations will be provided to the Owner's staff in writing.
3
4

5 **BASIS OF PAYMENT**
6

7 **Contract payment schedule:** The Landscape Maintenance Provider will be paid according to the
8 following schedule:
9

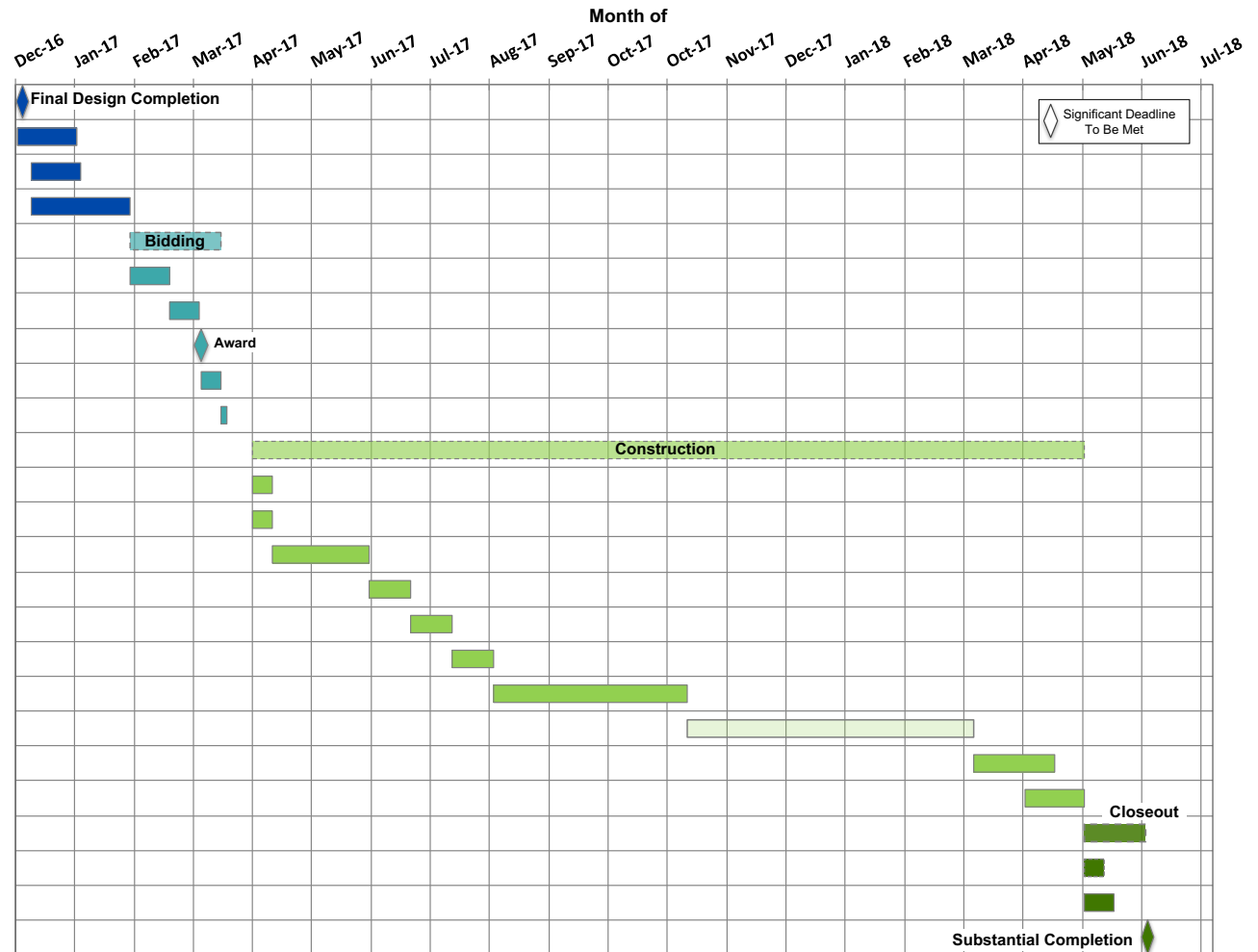
- 10 • 50% of the contract at the end of maintenance year 1
- 11 • 25% of the contract at the end of maintenance year 2
- 12 • 25% of the contract at the end of maintenance year 3 and all maintenance plan
- 13 records are turned over and punch list items corrected
- 14
- 15
- 16
- 17

END OF SECTION

Section 3

Project Schedule

Task Name	Start Date	End Date	Duration (days)
Final Design Completion	12/6/16	12/7/16	1
Submittal for Review	12/6/16	1/5/17	30
Land Acquisition	12/13/16	1/7/17	25
Permitting	12/13/16	2/1/17	50
Bidding	2/1/17	3/19/17	46
Advertising	2/1/17	2/21/17	20
Review Bids	2/21/17	3/8/17	15
Award Bid	3/8/17	3/9/17	1
Sign Contracts	3/9/17	3/19/17	10
Notice to Proceed	3/19/17	3/22/17	3
Construction	4/4/17	5/30/18	421
Mobilization	4/4/17	4/14/17	10
Erosion Control	4/4/17	4/14/17	10
Site Grading	4/14/17	6/2/17	49
Parking Lot	6/2/17	6/23/17	21
Pathway	6/23/17	7/14/17	21
Shelter Expansion	7/14/17	8/4/17	21
Boardwalk	8/4/17	11/10/17	98
Winter Hiatus	11/10/17	4/4/18	145
Boardwalk	4/4/18	5/15/18	41
Landscaping	4/30/18	5/30/18	30
Closeout	5/30/18	6/30/18	31
Commissioning	5/30/18	6/9/18	10
Completion of Final Punchlist	5/30/18	6/14/18	15
Substantial Completion	6/30/18	7/1/18	1



Section 4

Opinion of Probable Cost

Economic Analysis

Opinion of Probable Cost

The final Opinion of Probable Cost (OPC) for Improvements to Ahuska Park is \$1,978,000. The OPC includes the construction cost, the land easement and permitting cost, contractor fee of 5%, contractor contingency on construction of 15%, and E Drive Design Company’s engineering design fee of 8%, to be paid after submission of final contracted services. See Table 1 for the breakdown of the final OPC by design component, land and permit cost, and contractor and engineering services.

Table 1. Opinion of Probable Cost, by component and category.

Boardwalk system includes the observation tower cost

Opinion of Probable Cost		
Category	Component	Cost
Construction	Erosion Control	\$4,000
	Stormwater Management	\$68,000
	Earthwork	\$232,000
	Parking Lot	\$234,000
	Pathways	\$107,000
	Solar Powered LED Lights	\$105,000
	Shelter Extension	\$64,000
	Boardwalk System*	\$679,000
	Dog Park	\$18,000
	Natural Play Area	\$15,000
	Landscaping	\$21,000
	Miscellaneous	\$14,000
	Construction Total	\$1,561,000
Land Easement & Legal	2 WisDOT Parcels & Permits	\$155,000
Contractor Services	15% Contingency & 5% Contractor Fee	\$118,000
Engineering Services	8% Design Fee	\$144,000
Total Opinion of Probable Cost		\$1,978,000

Design component construction costs were determined using the Wisconsin Department of Transportation contractor average unit prices, SmithGroupJJR contractor unit prices for a similar park project, and past precedent projects from Washington and California Departments of Transportation, , and the Wisconsin Department of Natural Resources. For the complete project quantity and unit price list with projected costs, contact E Drive Design Company.

Operation and Maintenance Costs

Additional maintenance will be needed with E Drive Design Company's proposed design. More materials and time will be spent on maintaining the new features, thus increasing operation and maintenance costs at Ahuska Park.

Stormwater Management: To ensure that the stormwater structures continue working, they will need to be monitored and maintained. The permeable pavement will need to be vacuumed 2 to 3 times a year with a Hi-Vac truck, to remove any debris clogging the pores of the pavement. The grassed swales must be cleared of debris and mowed. The rain garden will need to be weeded and periodically mulched for proper vegetation growth. In addition, any new plants added to the site will need to be watered and weeded.

Boardwalk System: The boardwalk system will also require annual maintenance to ensure its longevity. Chemical sealing and treating will be applied to the timber boardwalk every 1-2 years to prevent swelling, and rotting of the wood; sealing and staining, combined, will cost approximately \$5/ square foot. Annual cleaning will cost approximately \$1/ square foot. The helical piles in the boardwalk foundation are galvanized steel to minimize corrosion in the wetland environment. The helical piles will require inspection for potential replacement after 30 years, however, typical helical piles do not require replacement until 50-70 years after installation.

Section 5

Construction Drawings

See Separate Documents

CITY OF MONONA
DEPARTMENT OF PARKS AND RECREATION
AHUSKA PARK SITE IMPROVEMENTS

IMPROVEMENTS
TO AHUSKA PARK

PROJECT NO. 120616

DRAWINGS PREPARED BY



1415 ENGINEERING DRIVE
MADISON, WI 53706

DRAWINGS PREPARED FOR



ENGINEERING IMPROVEMENTS APPROVED BY:

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NOTES:

1. PHASE 2 Not in Contract

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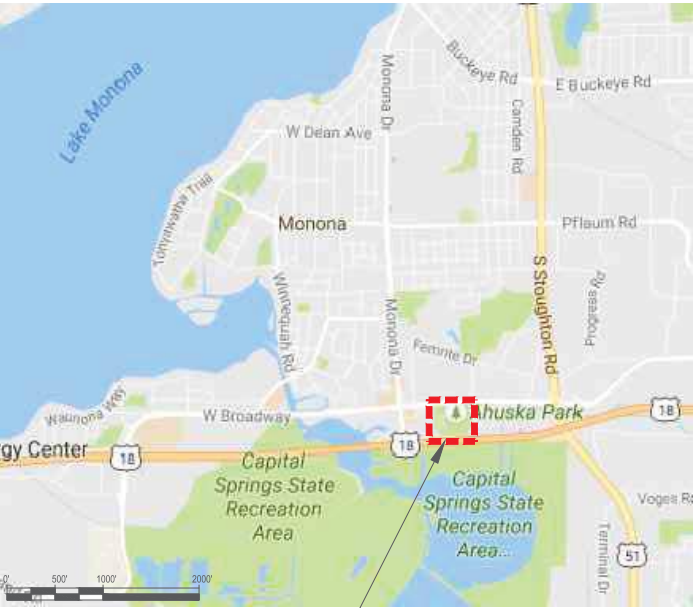


SHEET TITLE

TITLE
SHEET

SHEET NUMBER

G0.0



PROJECT LOCATION

INDEX OF SHEETS

SHEET NO.	G0.0	COVER*	SHEET NO.	C5.0	STRUCTURAL PROFILES AND ELEVATIONS*
SHEET NO.	C1.0	EXISTING CONDITIONS*	SHEET NO.	C5.1	STRUCTURAL DETAILS*
SHEET NO.	C2.0	SITE PREPARATION AND EROSION CONTROL PLAN*	SHEET NO.	C6.0	STORMWATER MANAGEMENT PROFILES*
SHEET NO.	C2.1	SITE PREPARATION AND EROSION CONTROL PLAN PHASE 2	SHEET NO.	C6.1	STORMWATER MANAGEMENT DETAILS*
SHEET NO.	C3.0	GRADING PLAN*	SHEET NO.	C7.0	UTILITY PLAN
SHEET NO.	C4.0	SITE LAYOUT AND MATERIALS PLAN*	SHEET NO.	C7.1	UTILITY PLAN PHASE 2
SHEET NO.	C4.1	SITE LAYOUT AND MATERIALS PLAN - BOARDWALK*	SHEET NO.	C7.2	UTILITY DETAILS
SHEET NO.	C4.2	SITE LAYOUT AND MATERIALS PLAN PHASE 2	SHEET NO.	L1.0	LANDSCAPE PLAN*
SHEET NO.	C4.3	SITE AND MATERIAL DETAILS*	SHEET NO.	L1.1	LANDSCAPE DETAILS*

* INDICATES SHEETS INCLUDED IN THIS SUBMITTAL

PROJECT NO. 120616



**DRIVE
DESIGN
CO.**



CITY OF MONONA
DEPARTMENT OF
PARKS AND RECREATION

ENGINEER _____ DATE _____



**Notbohm Michaels
Surveying, Inc.**
6314 Odana Road
Madison, WI 53719
(608) 277-0503

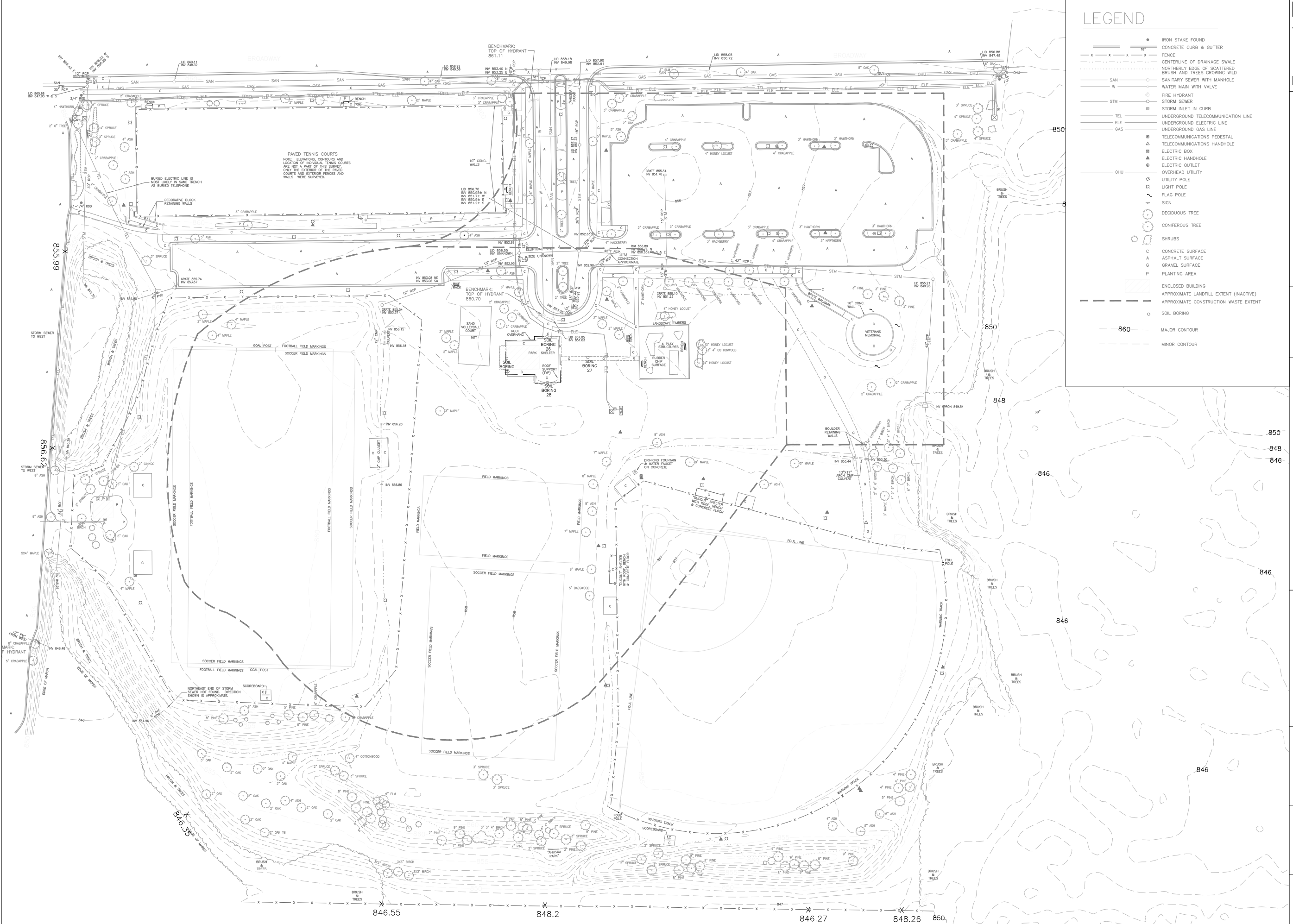
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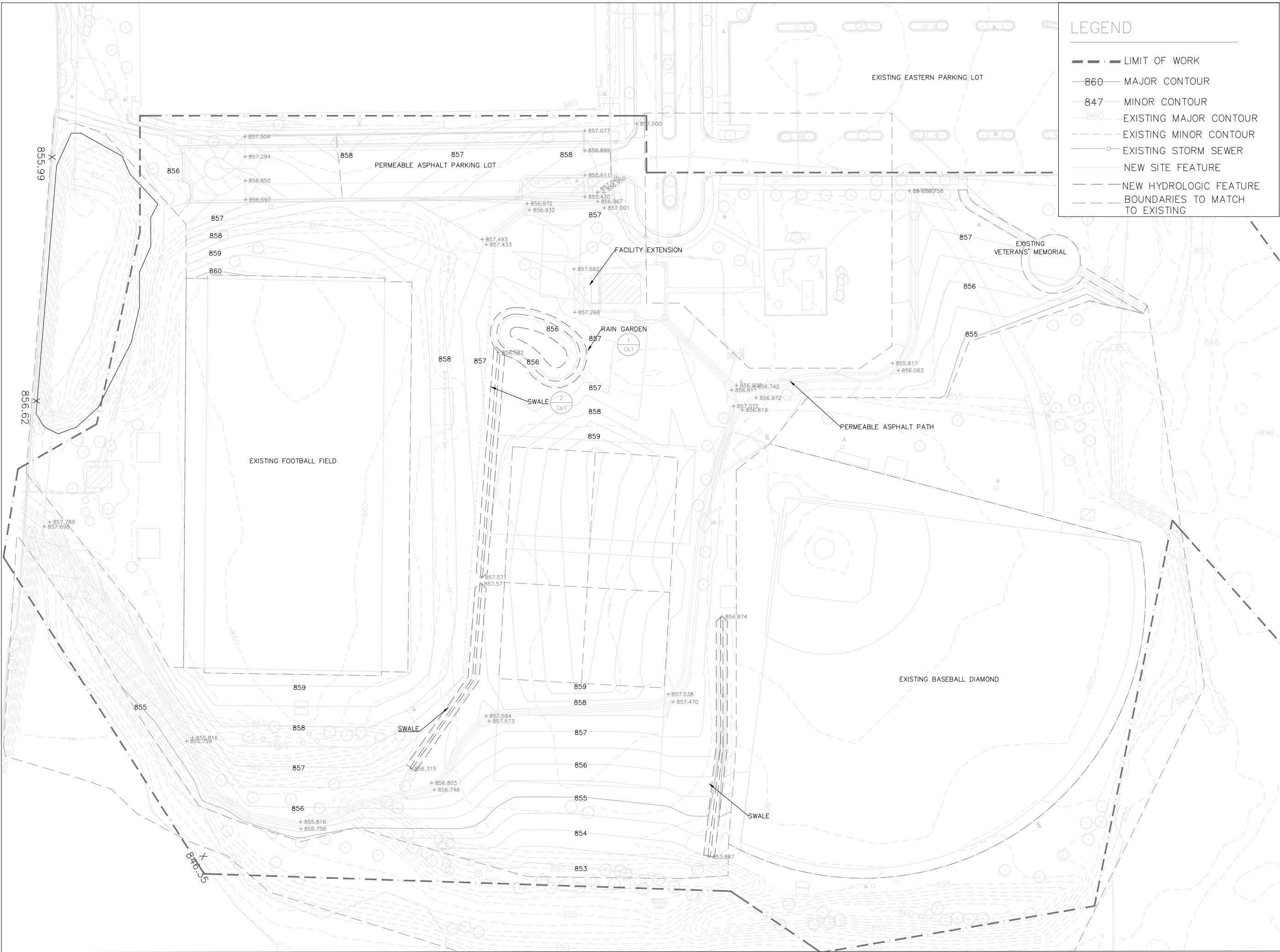
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EXISTING CONDITIONS

C1.0





LEGEND

- LIMIT OF WORK
- 860— MAJOR CONTOUR
- 847— MINOR CONTOUR
- -860- - EXISTING MAJOR CONTOUR
- - - - EXISTING MINOR CONTOUR
- EXISTING STORM SEWER
- NEW SITE FEATURE
- — — NEW HYDROLOGIC FEATURE
- — — BOUNDARIES TO MATCH TO EXISTING

IMPROVEMENTS
TO AHUSKA PARK

PROJECT NO. 120616

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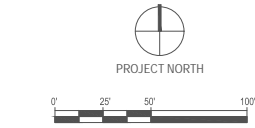
ENGINEERING IMPROVEMENTS APPROVED BY:

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- NOTES:
1. The contour interval within the park is .5', with contours labeled at every 1', the contour interval within the wetlands is 2'.

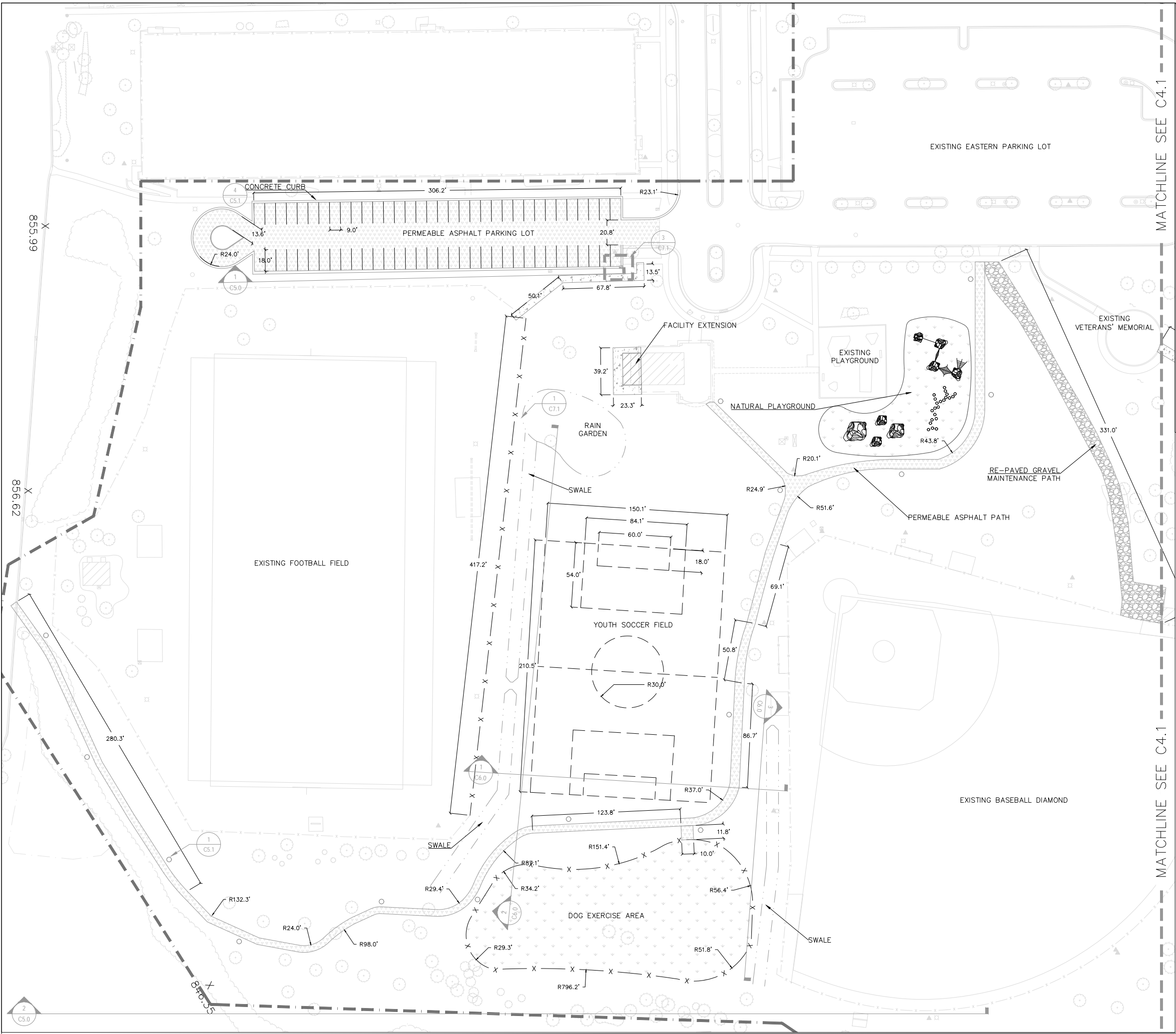
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SHEET TITLE
GRADING
PLAN

SHEET NUMBER
C3.0



LEGEND

- BOARDWALK MATERIALS (SOUTHERN PINE, TYP.)
- PERMEABLE ASPHALT PAVEMENT
- CONCRETE
- FACILITY EXTENSION
- NEW PARK AMENITY AREAS
- GRAVEL
- CONCRETE CURB
- FENCE
- WETLAND BOUNDARY
- PARKING LOT STRIPING
- SOCCER FIELD STRIPING
- LIGHT POLE
- LIMIT OF WORK

IMPROVEMENTS TO AHUSKA PARK

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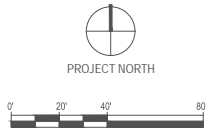
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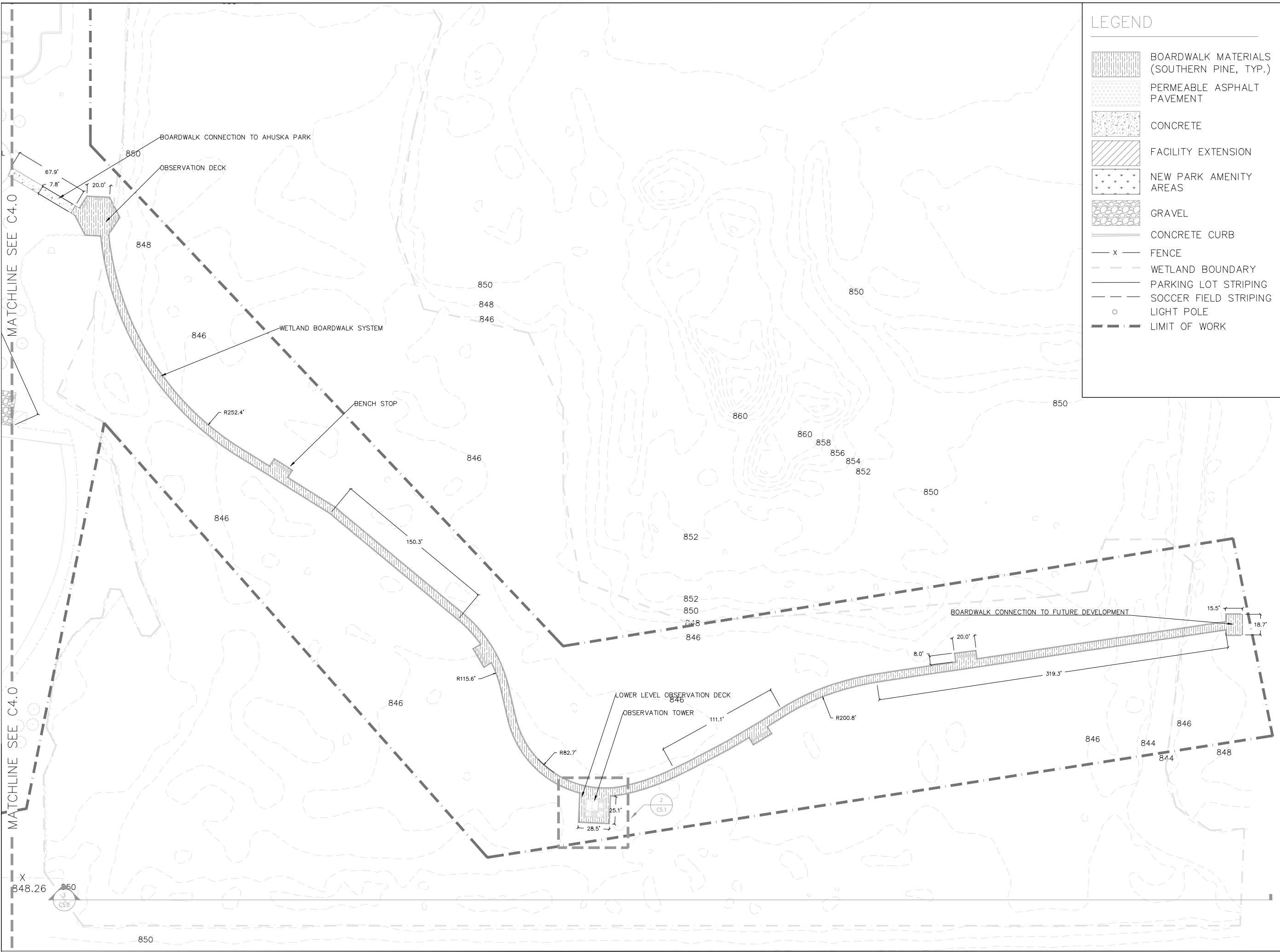


SHEET TITLE

SITE LAYOUT AND
MATERIALS PLAN

SHEET NUMBER

C4.0



LEGEND

BOARDWALK MATERIALS
(SOUTHERN PINE, TYP.)

PERMEABLE ASPHALT
PAVEMENT

CONCRETE

FACILITY EXTENSION

NEW PARK AMENITY
AREAS

GRAVEL

CONCRETE CURB

x

FENCE

WETLAND BOUNDARY

PARKING LOT STRIPING

SOCCER FIELD STRIPING

LIGHT POLE

LIMIT OF WORK


PROJECT NO. 120616

DRAWINGS PREPARED BY

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DESIGN
CO.

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DEPARTMENT OF
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ENGINEERING IMPROVEMENTS APPROVED BY:

ENGINEER

DATE

NOTES:
1. The contour interval within the wetlands is 2'.

IMPROVEMENTS
TO AHUSKA PARK

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PROJECT NORTH

0'

20'

40'

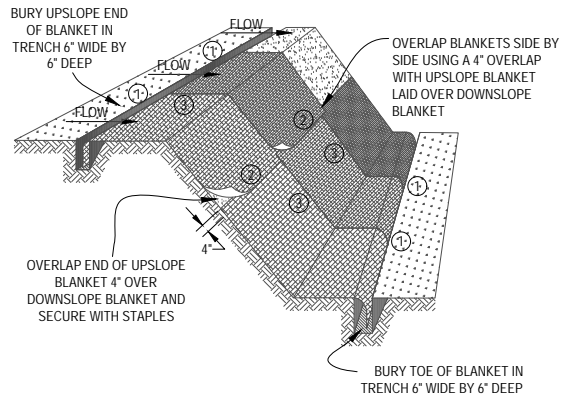
80'

SHEET TITLE

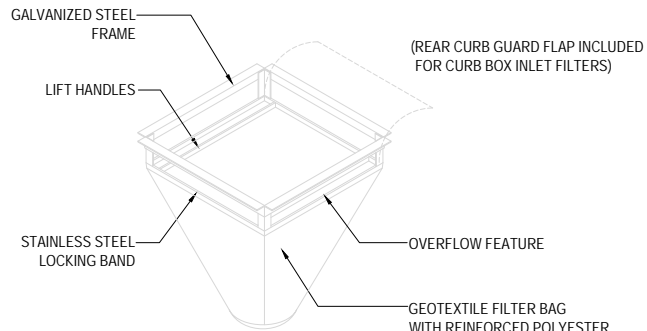
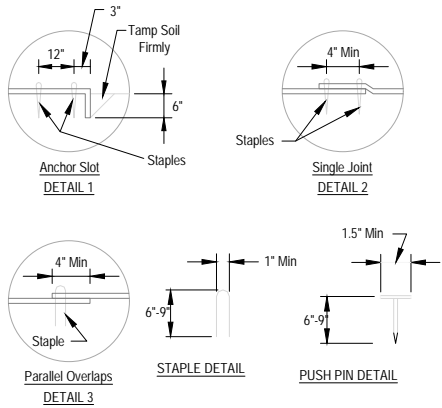
SITE LAYOUT AND
MATERIALS PLAN
- BOARDWALK

SHEET NUMBER

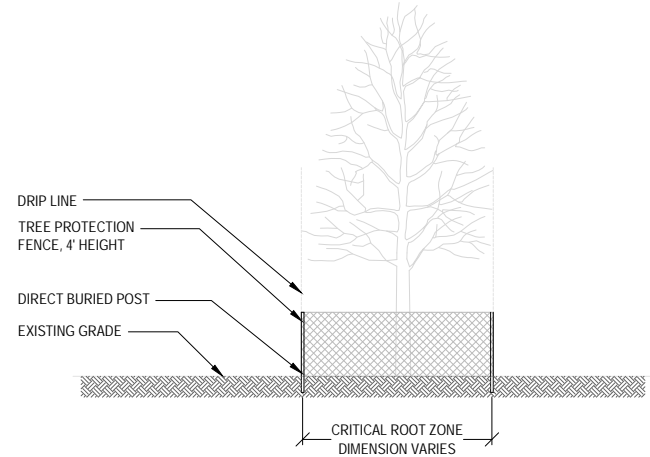
C4.1



- NOTES:
1. Staples shall be placed in a diamond pattern at 2 per s.y. for stiched blankets. Non-stiched shall use 4 staples per s.y. of material. This equates to 200 staples with stiched blanket and 400 staples with non-stiched blanket per 100 s.y. of material.
 2. Staple or push pin lengths shall be selected based on soil type and conditions. (minimum staple length is 6")
 3. Erosion control material shall be placed in contact with the soil over a prepared seedbed.
 4. All anchor slots shall be stapled at approximately 12" intervals.

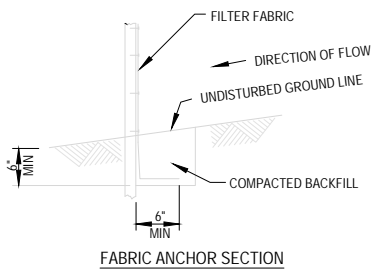
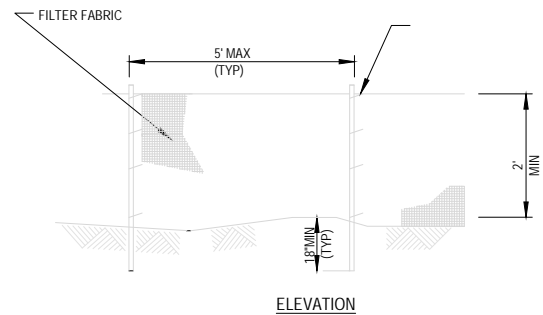


- RECTANGLE INLET FILTER
- NOTE:
- TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL CATCH BASINS AND STORM INLETS. INLET FILTER TO BE RECTANGLE IPP INLET FILTER AS MANUFACTURED BY INLET & PIPE PROTECTION, INC (847-722-0690) OR APPROVED OTHER. CLEAN FILTER AS NEEDED.

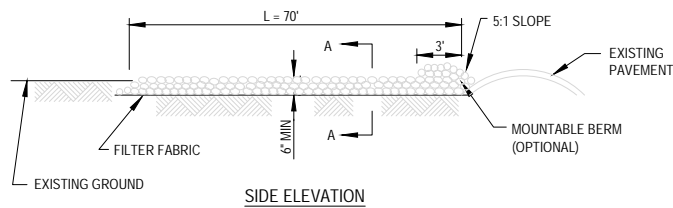
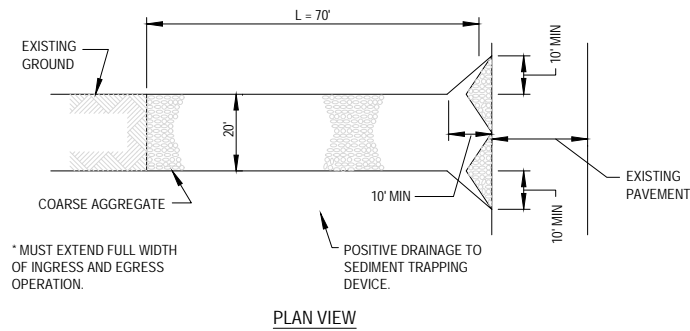


- NOTES:
1. CRITICAL ROOT ZONE: MEASURED AT D.B.H. FOR EACH INCH OF CALIPER, EXTEND ONE FOOT FROM THE TRUNK OF THE TREE.
 2. FENCE MATERIALS: DUPONT CONSTRUCTION FENCING #L-60 OR L-70. SECURE TO STEEL FENCE POSTS PLACED 6' O.C.; INSTALL PRIOR TO SITE DISTURBANCE. REMOVE AFTER OWNERS APPROVAL.

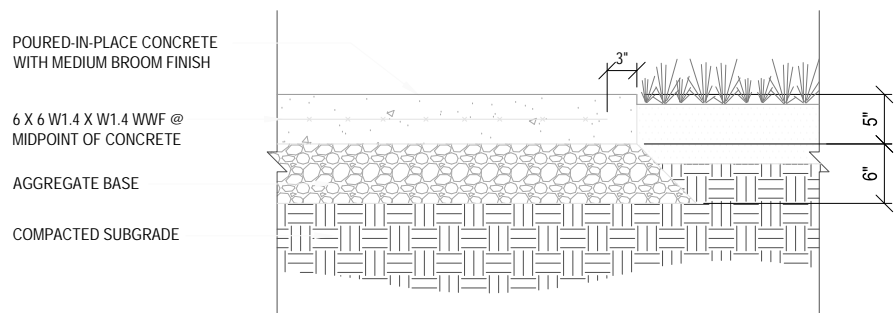
1 EROSION CONTROL BLANKET SCALE: NTS 2 INLET FILTER SCALE: NTS 3 TREE PROTECTION FENCE SCALE: NTS



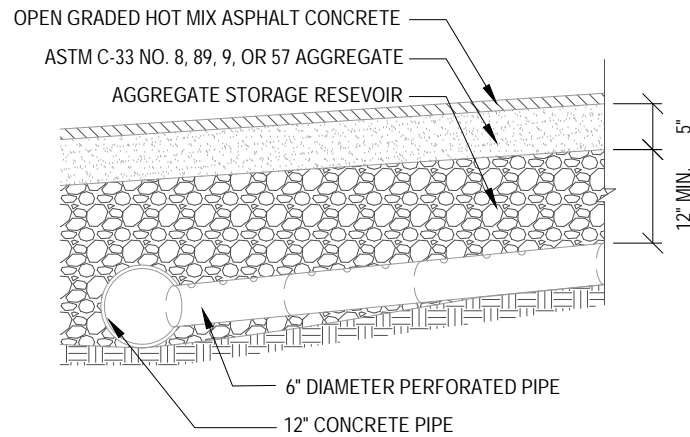
- NOTES:
1. TEMPORARY SEDIMENT FENCE SHALL BE INSTALLED PRIOR TO ANY GRADING WORK. IN THE AREA TO BE PROTECTED. THEY SHALL BE MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD AND REMOVED IN CONJUNCTION WITH THE FINAL GRADING AND SITE STABILIZATION.
 2. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE TABLE 1 OR 2, CLASS I WITH EQUIVALENT OPENING SIZE OF AT LEAST 30 FOR NONWOVEN AND 50 FOR WOVEN.
 3. FENCE POSTS SHALL BE EITHER STANDARD STEEL POST OR WOOD POST WITH A MINIMUM CROSS-SECTIONAL AREA OF 3.0 SQ. IN.



- NOTES:
1. FILTER FABRIC SHALL MEET THE REQUIREMENTS OF MATERIAL SPECIFICATION 592 GEOTEXTILE, TABLE I OR CLASS I, II OR IV AND SHALL BE PLACED OVER THE CLEARED AREA PRIOR TO THE PLACING OF ROCK.
 2. ROCK OR RECLAIMED CONCRETE SHALL MEET ONE OF THE FOLLOWING IDOT COARSE AGGREGATE GRADATION, CA-1, CA-2, CA-3 OR CA-4 AND BE PLACED ACCORDING TO CONSTRUCTION SPECIFICATION 25 ROCKFILL USING PLACEMENT METHOD 1 AND CLASS III COMPACTION.
 3. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHALL BE CONSTRUCTED ACCORDING TO MANUFACTURERS SPECIFICATIONS.
 4. IF WASH RACKS ARE USED THEY SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS.



6 CONCRETE PAVEMENT SCALE: NTS



7 PERMEABLE ASPHALT PAVEMENT SCALE: NTS

4 SILT FENCE SCALE: NTS

5 STABILIZED CONSTRUCTION ENTRANCE SCALE: NTS

IMPROVEMENTS TO AHUSKA PARK

PROJECT NO. 120616

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SHEET TITLE

SITE AND MATERIAL
DETAILS

SHEET NUMBER

C4.3

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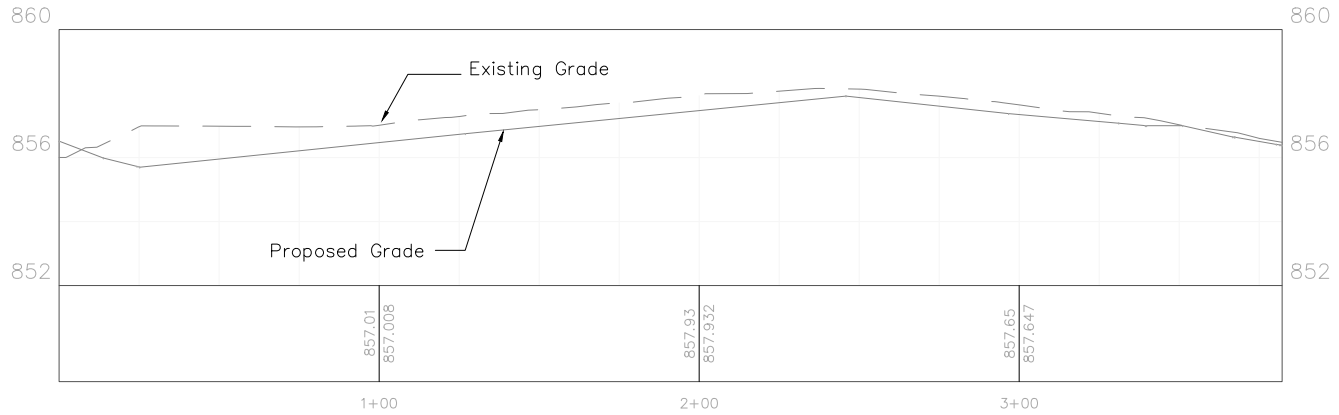
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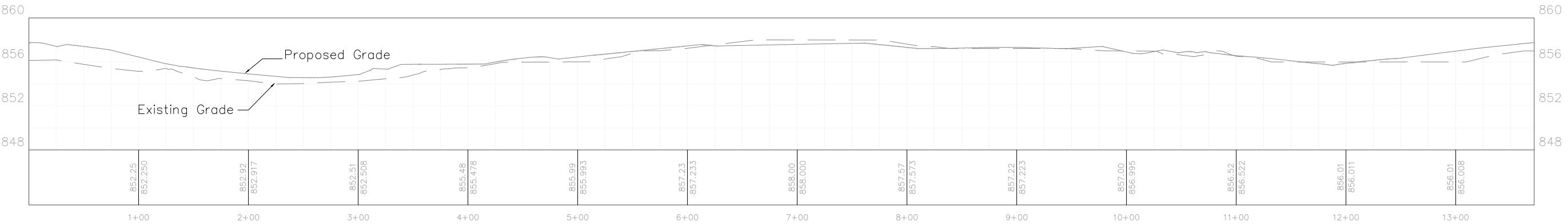
SHEET TITLE
STRUCTURAL PROFILES
AND ELEVATIONS

SHEET NUMBER

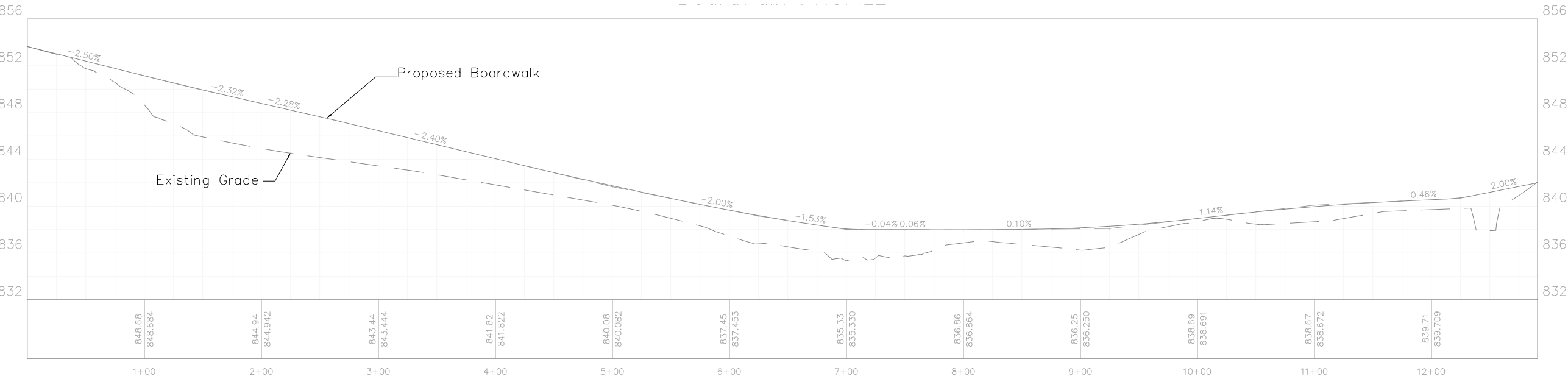
C5.0



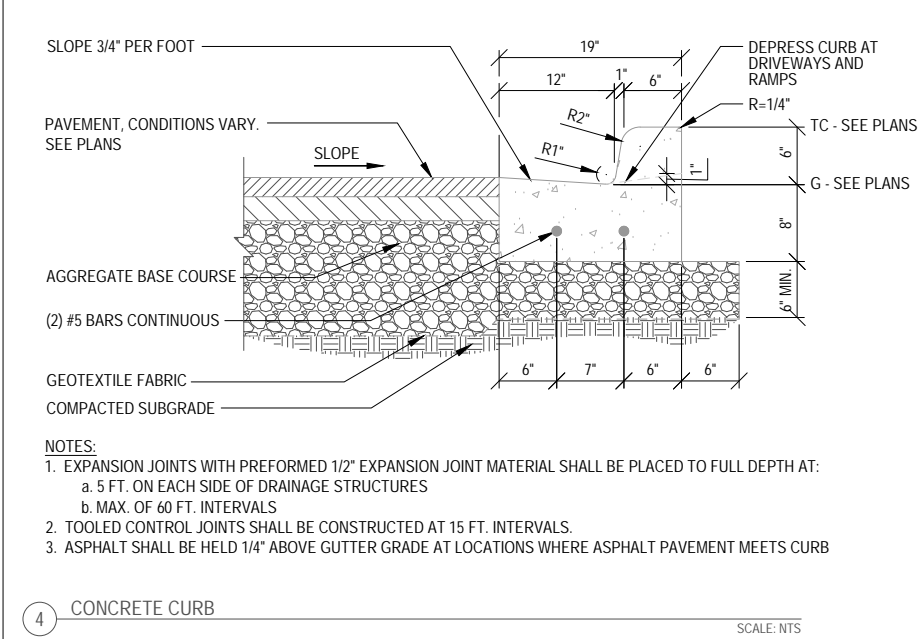
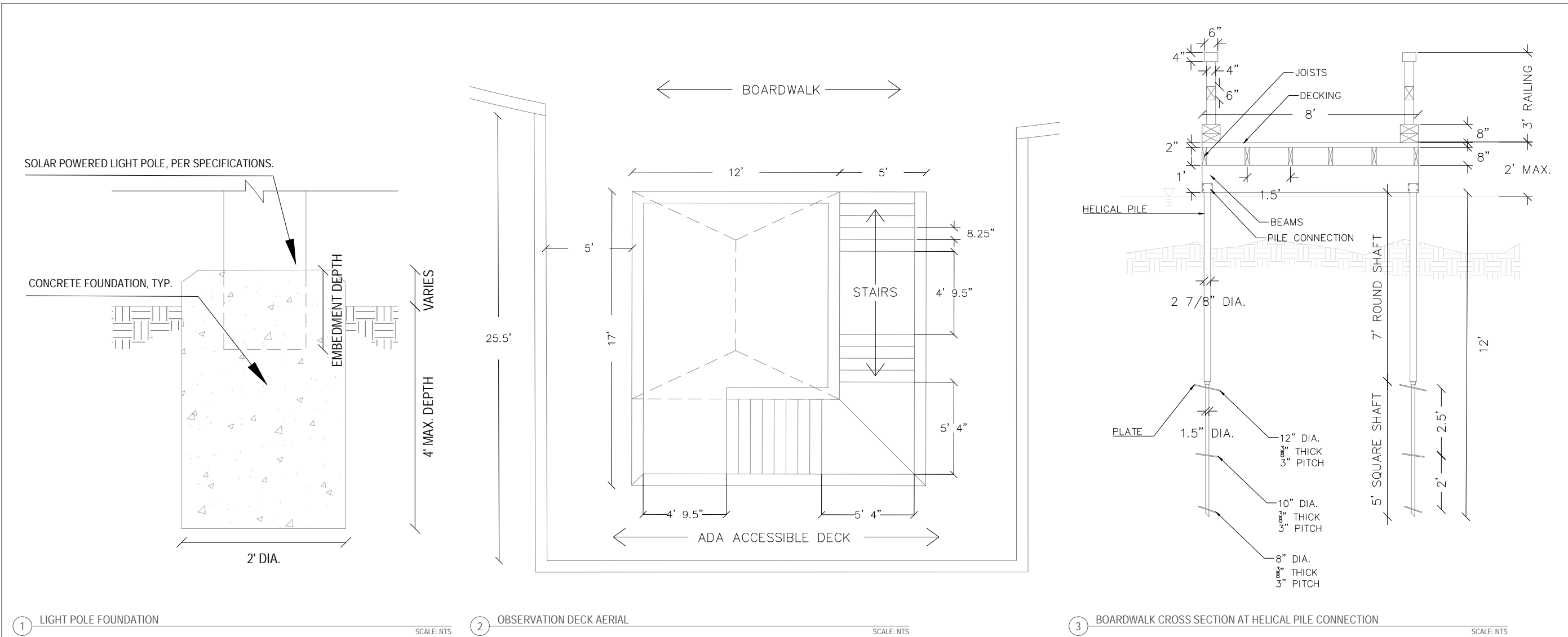
1 PARKING LOT CROSS SECTION SCALE: VERT.: 1" = 3', HORIZ.: 1" = 30'



2 PATHWAY PROFILE SCALE: VERT.: 1" = 4.5', HORIZ.: 1" = 50'



3 BOARDWALK PROFILE SCALE: VERT.: 1" = 4.5', HORIZ.: 1" = 50'



IMPROVEMENTS TO AHUSKA PARK

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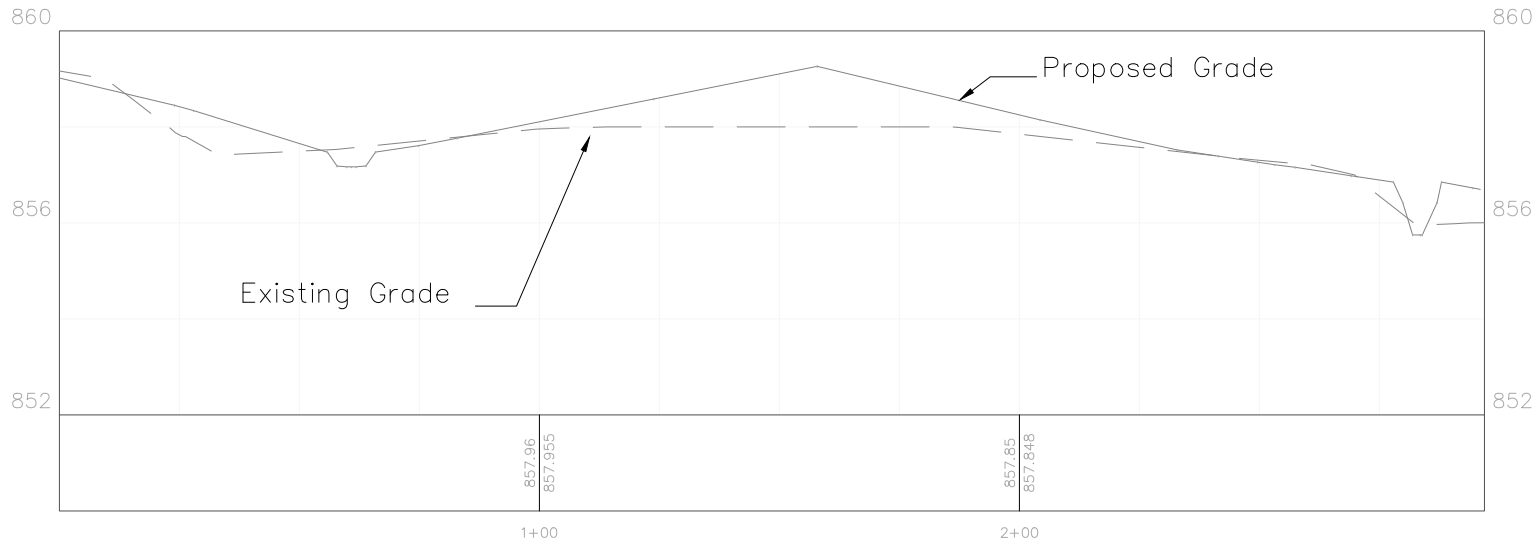
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SHEET TITLE

STRUCTURAL DETAILS

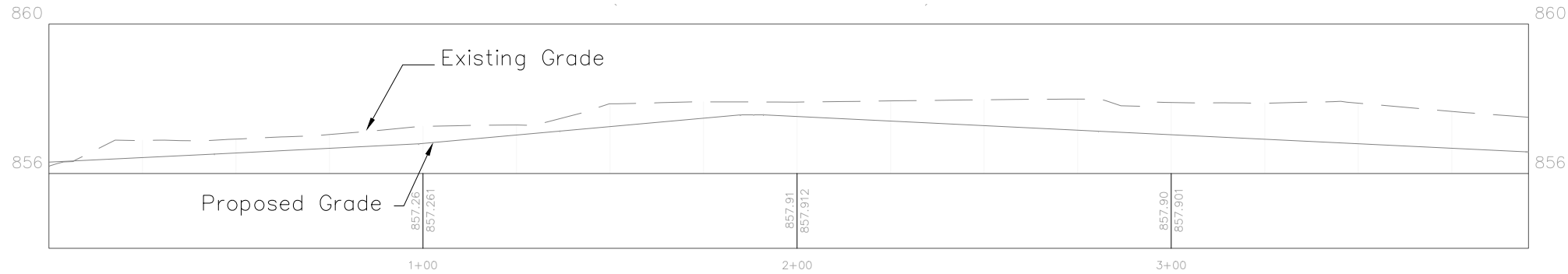
SHEET NUMBER

C5.1



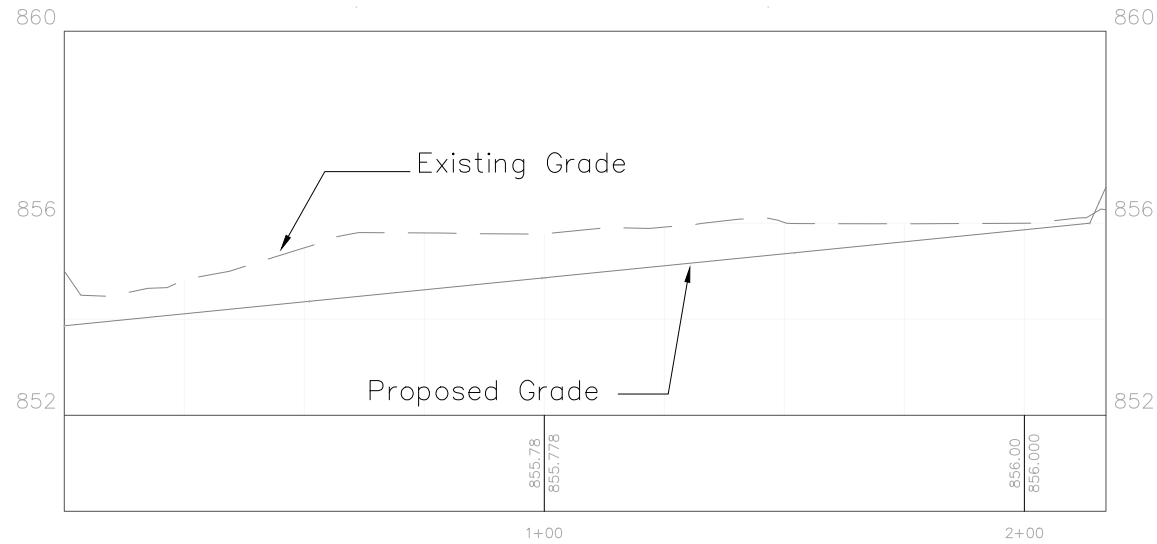
1 SOCCER FIELD CROSS SECTION

SCALE: VERT.: 1" = 2', HORIZ.: 1" = 25'



2 SWALE WEST OF SOCCER FIELD PROFILE

SCALE: VERT.: 1" = 2', HORIZ.: 1" = 25'



3 SWALE EAST OF SOCCER FIELD PROFILE

SCALE: VERT.: 1" = 2', HORIZ.: 1" = 25'

IMPROVEMENTS
TO AHUSKA PARK

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PARKS AND RECREATION

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NOTES:

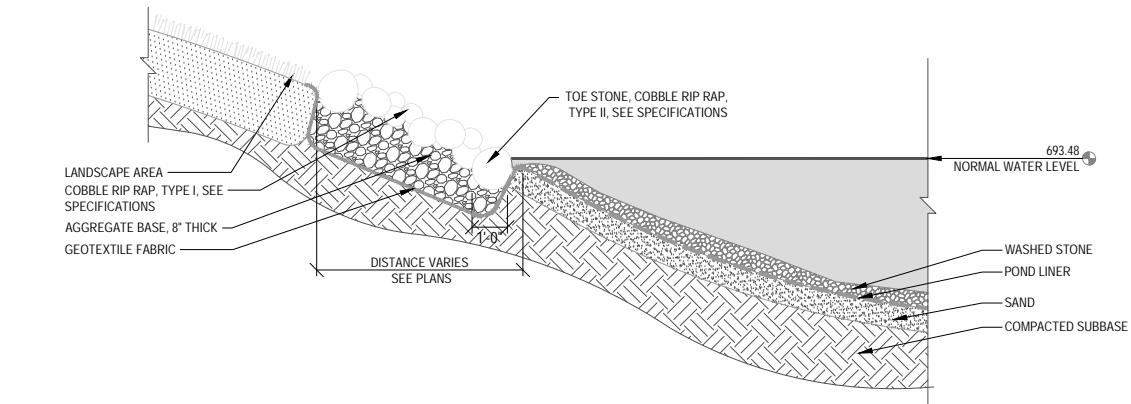
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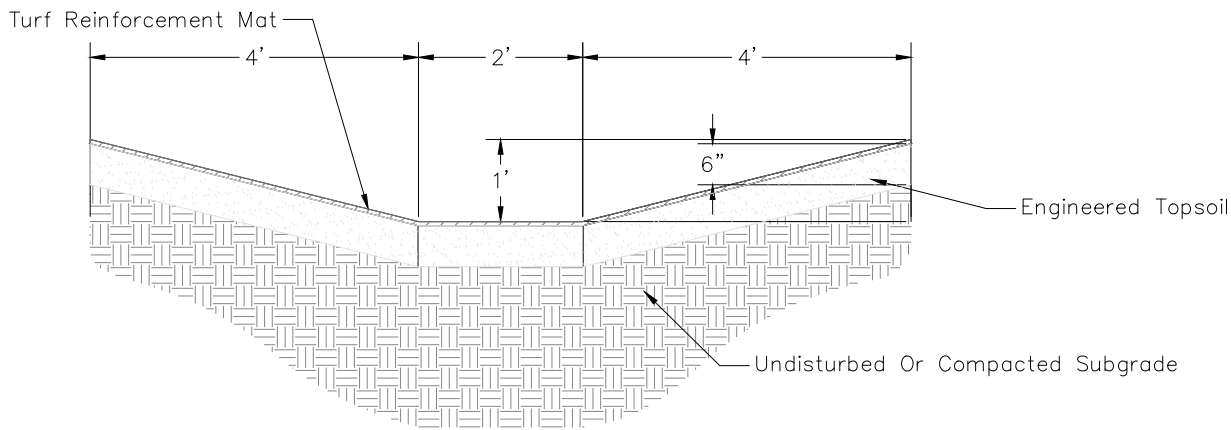
SHEET TITLE
STORMWATER
MANAGEMENT
PROFILES

SHEET NUMBER

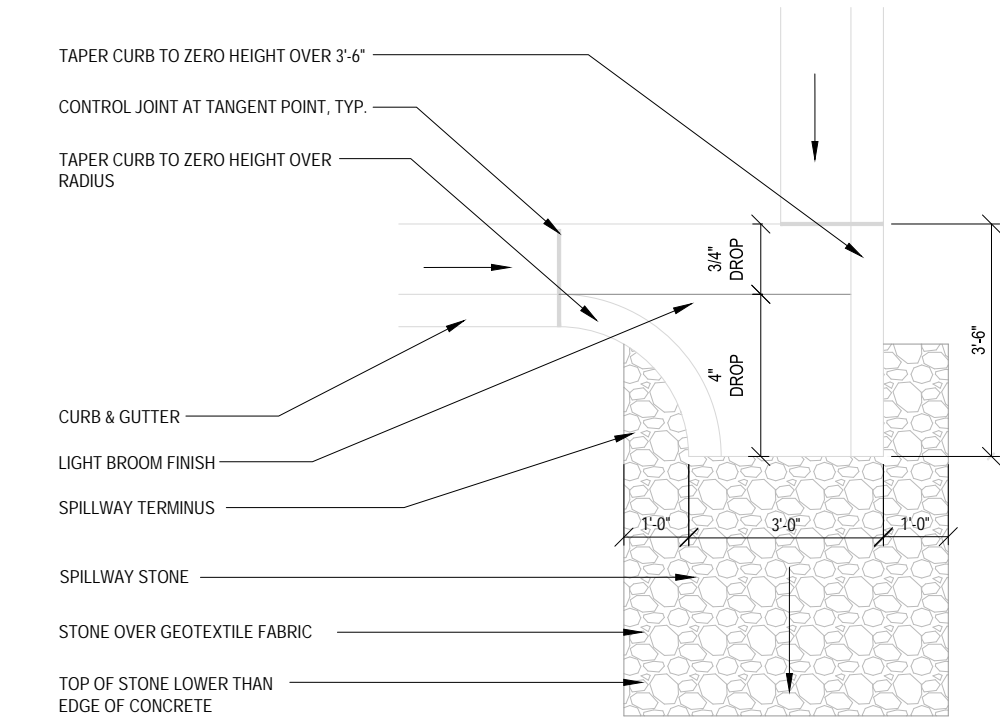
C6.0



1 RAIN GARDEN POND EDGE SCALE: NTS



2 SWALE GEOMETRY SCALE: NTS



3 SPILLWAY TO INLET SCALE: NTS

IMPROVEMENTS TO AHUSKA PARK

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ENGINEER DATE

NOTES:

STUDENT PROJECT DOCUMENTS

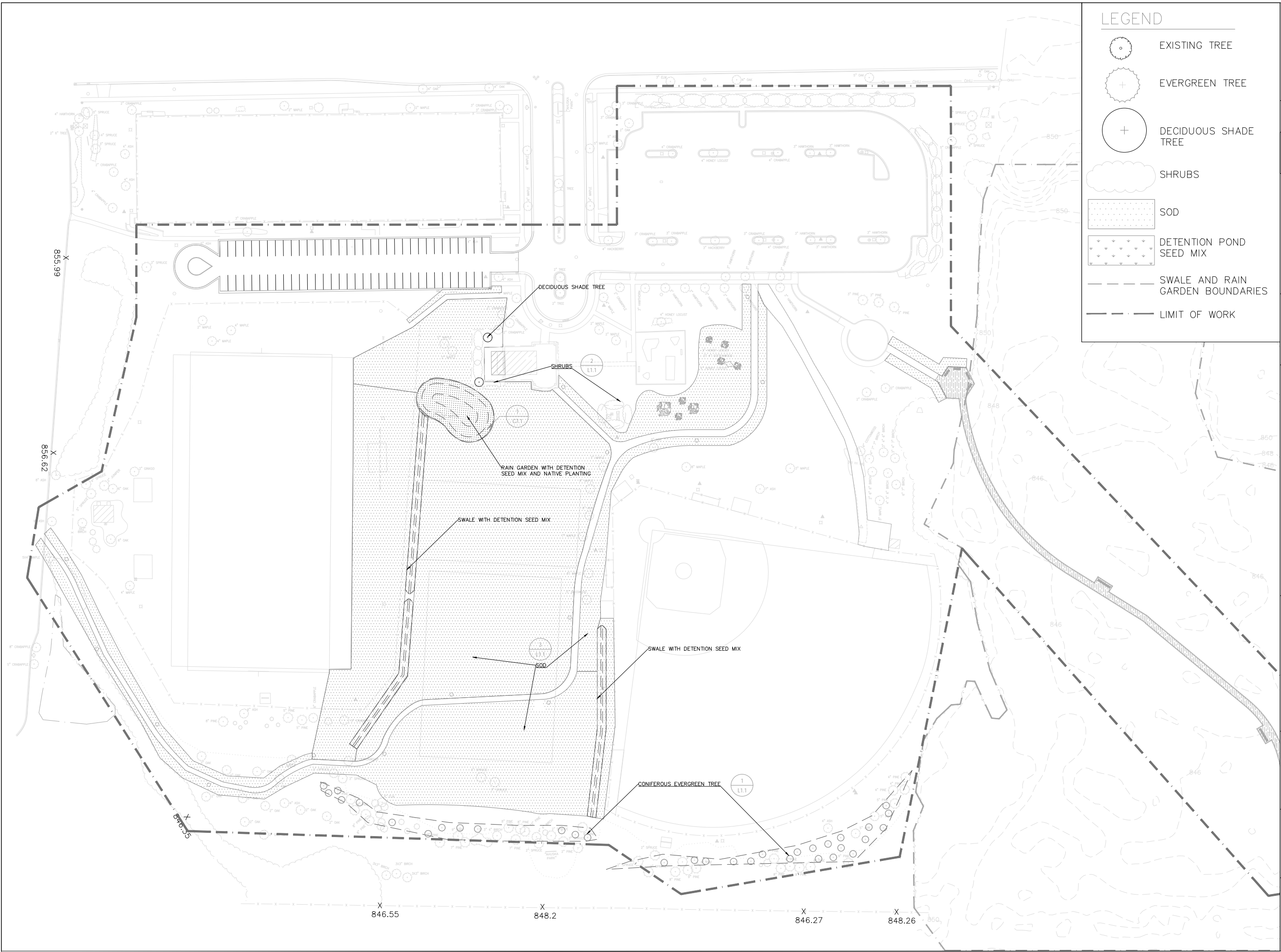
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SHEET TITLE

STORMWATER
MANAGEMENT DETAILS

SHEET NUMBER

C6.1



LEGEND

- EXISTING TREE
- EVERGREEN TREE
- DECIDUOUS SHADE TREE
- SHRUBS
- SOD
- DETENTION POND SEED MIX
- SWALE AND RAIN GARDEN BOUNDARIES
- LIMIT OF WORK

IMPROVEMENTS TO AHUSKA PARK

PROJECT NO. 120616

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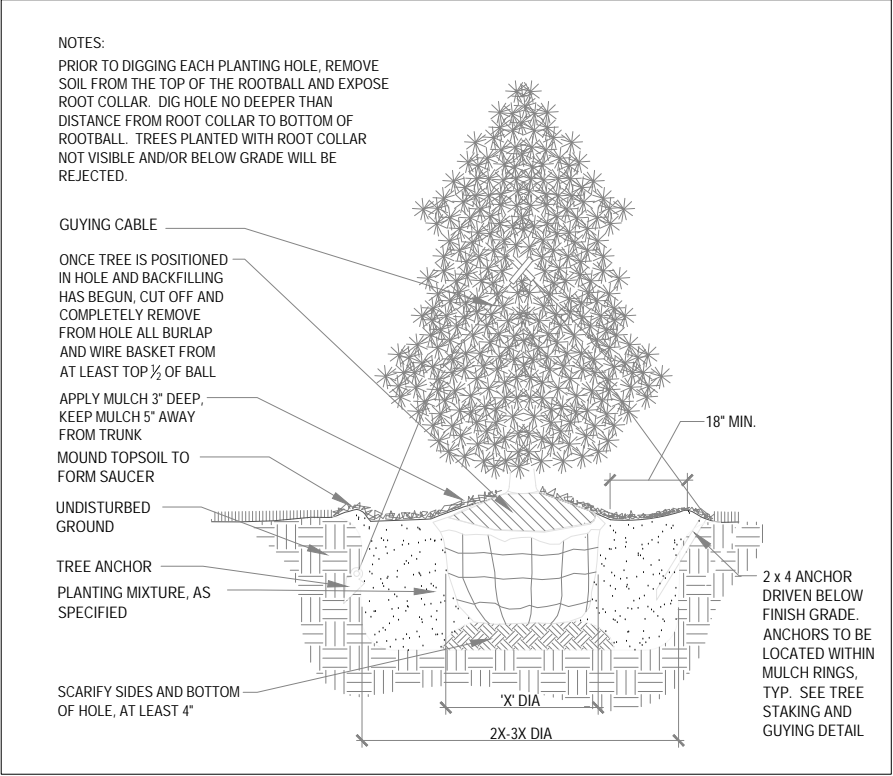
PROJECT NORTH

SHEET TITLE

LANDSCAPE PLAN

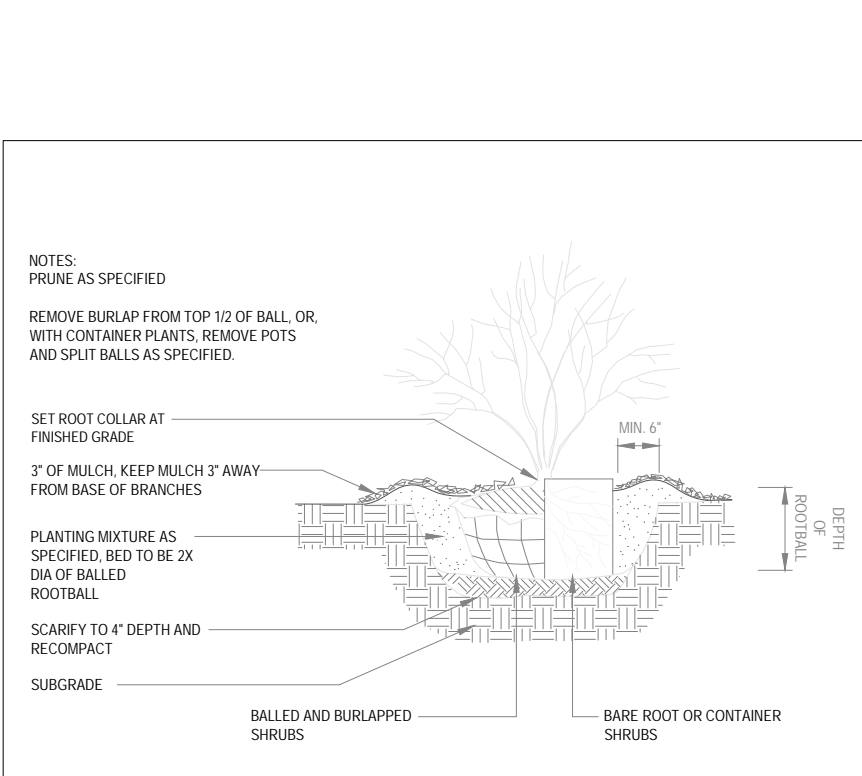
SHEET NUMBER

L1.0



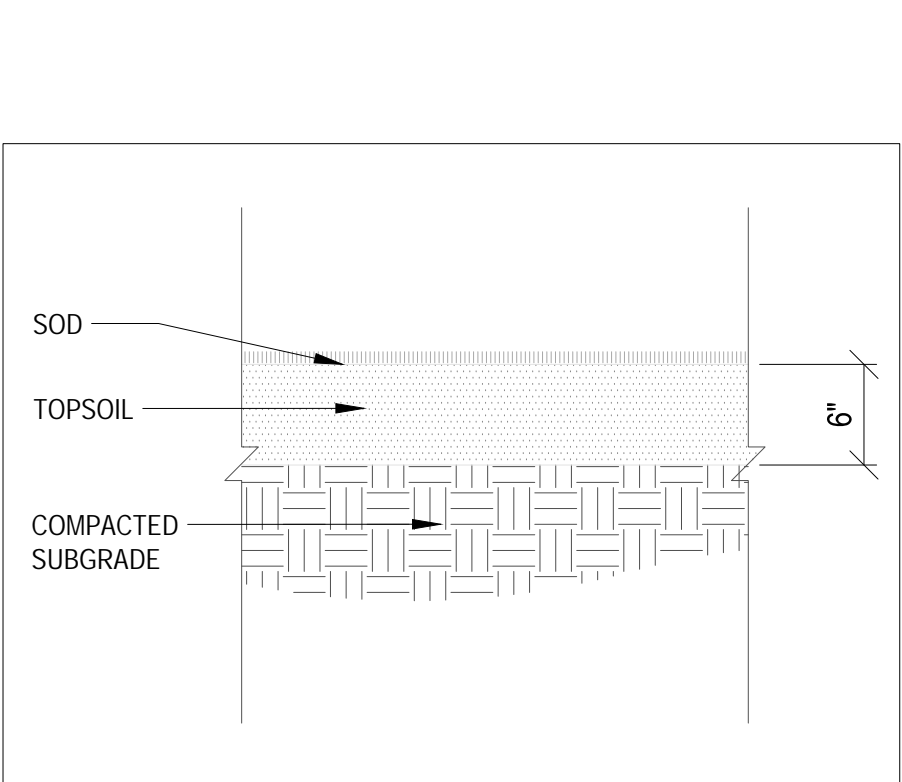
1 CONIFEROUS EVERGREEN TREE

SCALE: NTS



2 SHRUBS

SCALE: NTS



3 SOD

SCALE: NTS

IMPROVEMENTS TO AHUSKA PARK

PROJECT NO. 120616

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DEPARTMENT OF
PARKS AND RECREATION

ENGINEERING IMPROVEMENTS APPROVED BY:

ENGINEER _____ DATE _____

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PROJECT NORTH

SHEET TITLE

LANDSCAPE
DETAILS

SHEET NUMBER

L1.1

Section 6

Appendices

Appendix A: Hydrologic Analysis

Appendix B: Structural Analysis

Appendix C: Environmental Analysis

Appendix D: Geotechnical Report

Section 6

Appendix A: Hydrologic Analysis

Hydrologic Calculations

Grassed Swale Design

1. Conveyance Calculation

The swale is designed to convey the storm water associated with the 10-year 24-hour storm event. In addition, the following swale design constraints affect the channel shaping:

- The typical cross section for a grassed swale is a trapezoidal shape.
- Side slopes of the swale should be 4:1 or flatter, so the channel is accessible by maintenance.
- Bottom width should be between 2 to 8 feet, to ensure that there isn't channelized flow in the swales.
- The maximum ponding depth is 18 inches.
- Longitudinal sloping should be within 1-3%. Large slopes could cause excessive erosion. Smaller slopes could result in ponding.

To solve for the conveyance with this channel geometry, Manning's equation was used, as shown below.

$$Q_{convey} = \frac{1.49}{n} AR^{2/3} S_o^{1/2}$$

n = Channel roughness (assumed to be 0.03)

So = Bottom Slope (ft./ft.)

A = Channel Area (ft²)

R = Hydraulic Radius (ft.)

For a trapezoidal channel,

$$A = (b + zy)y$$

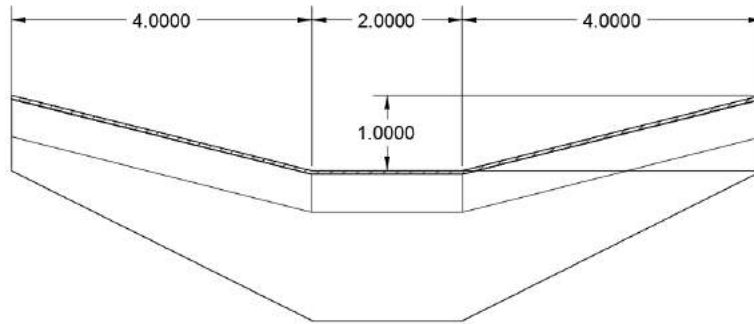
$$R = \frac{(b + zy)y}{b + 2y\sqrt{1 + z^2}}$$

Where b = Bottom Width (ft.)

y = Channel Depth (ft.)

z = Side Slope

Due to limited space for swales, the minimum dimensions were chosen. Bottom width is 2 feet, depth is 1 foot, and side slopes are 4:1. In addition, because of the existing contours, the allowable longitudinal sloping is 1%.



$$A = (b + zy)y$$

$$A = (2\text{ ft} + 4(1\text{ ft}))1\text{ ft}$$

$$A = 6\text{ ft}^2$$

$$R = \frac{(b + zy)y}{b + 2y\sqrt{1 + z^2}}$$

$$R = \frac{(2\text{ ft} + 4(1\text{ ft}))1\text{ ft}}{2\text{ ft} + 2(1\text{ ft})\sqrt{1 + 4^2}}$$

$$R = 0.585\text{ ft}$$

$$Q_{convey} = \frac{1.49}{n} AR^{2/3} S_o^{1/2}$$

$$Q_{convey} = \frac{1.49}{0.03} (6\text{ ft}^2)(0.585\text{ ft})^{2/3} (0.01)^{1/2}$$

$$Q_{convey} = 21\text{ cfs}$$

From HydroCAD analysis, the 10-year 24-hour storm flow into each the eastern and western swales are 9 cubic feet per second and 13 cubic feet per second, respectively. Since the channel can convey more storm water than the site produces, this designed swale should meet requirements.

2. Shear Stress Calculation

Shear stress calculations are used to determine if liners are needed for the swale to limit erosion. The following was a calculation to determine if grass lining is appropriate for the designed swale. First, the maximum shear stress on the channel bottom was calculated.

$$\tau_d = \gamma d S_0$$

$$\gamma = \text{Unit Weight of Water} = 62.14 \text{ lb/ft}^3$$

$$d = \text{Depth of Channel (ft.)}$$

$$S_0 = \text{Bottom Slope (ft./ft.)}$$

$$\tau_d = 62.14 \text{ lb/ft}^3 (1 \text{ foot})(0.01)$$

$$\tau_d = 0.624 \text{ lb/ft}^2$$

For grass lining to be appropriate, the permissible shear stress provided by the grass must be greater than the maximum shear stress. Permissible shear stress was calculated via a spreadsheet provided by the Facilities Development Manual by the Wisconsin Department of Transportation. Inputs to calculate the permissible shear stress included the retardance classification of the turf, and grass height. For the designed swales for Ahuska Park, the turf was assumed to have a retardance classification of C, and the grass height was assumed to be 0.25 ft. The equation used to calculate permissible shear stress of the soil is shown below.

$$\tau_{psoil} = (c_1 PI^2 + c_2 PI + c_3)(c_4 + c_5 e)^2 c_6$$

$$c_1 c_2 c_3 c_4 c_5 c_6 = \text{Coefficients}$$

$$PI = \text{Plasticity Index}$$

$$e = \text{Void Ratio}$$

$$\tau_{psoil} = 0.038 \text{ lb/ft}^2$$

This value can then be combined with the vegetation lining to determine the permissible shear stress on the lining.

$$\tau_p = \frac{\tau_{p \text{ soil}}}{(1 - C_f)} \left(\frac{n}{n_s} \right)^2$$

Cf = Grass Cover Factor

ns = Soil Grain Roughness

n = Overall Lining Roughness

$$\tau_p = 1.32 \text{ lb/ft}^2$$

Since the permissible shear stress of the grass lining (1.32 lb/ft²) is greater than the maximum shear on the channel bottom (0.624 lb/ft²), a grass lining is sufficient to limit erosion of the swale.

Section 6

Appendix B: Structural Analysis

SUBJECT: BOARDWALK DESIGN

BY/DATE: *Chatter Chatter* 11/8/16GIVEN: DRAWING 1.0 FOR LAYOUT

NOTES: • MATERIAL: SOUTHERN PINE #2 (TREATED)

• CURVILINEAR LAYOUT: min. curvature radius = 100 ft.

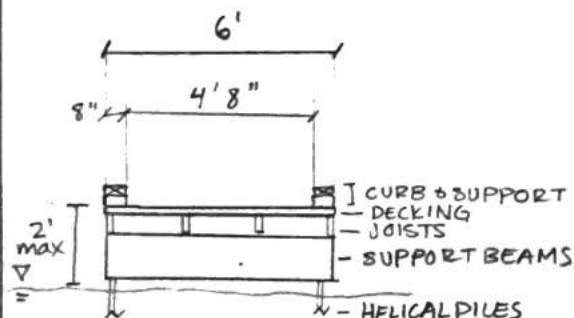
• CURB = 4" x 8" with 4" x 8" SUPPORT (typ.)

• DECKING = 2" x 6" (typ.) ; 1/8" GAP ; TOTAL WIDTH: 8 ft or 6 ft

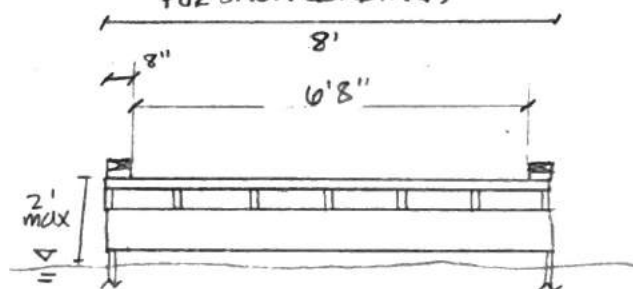
• JOISTS = 2" x 8" (typ.) @ 2' from CENTER (if winterized)

• SUPPORT BEAMS = 2" x 12" (typ.)

• POSTS AND FOUNDATION: IN THIS DESIGN, THE TYPICAL POST AND FOUNDATION FOR A BOARDWALK SYSTEM WILL BE REPLACED BY THE IMPLEMENTATION OF HELICAL PILES @ 8' (MAX) APART FROM CENTER

OPTION 1: NOT WINTERIZEDOPTION 2: WINTERIZED

(ACCOUNTS FOR WEIGHT OF ATV FOR SNOW CLEARING)



* WIDTH OPTIONS ARE BASED ON "HIERARCHY OF TRAIL STRUCTURES BASED ON MINIMIZING WETLAND IMPACTS" FROM THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES (WDNR) *

DESIGN LOAD: 100 PSF (LIVE LOAD) for both design options

SNOW LOAD: 30 PSF (seasonal)

DEAD LOAD: 19 PSF

ASCE 7-10: STRENGTH DESIGN METHOD LOAD COMBINATION:

$$1.2 (\text{DEAD LOAD}) + 1.6 (\text{LIVE LOAD}) + .5 (\text{SNOW LOAD})$$

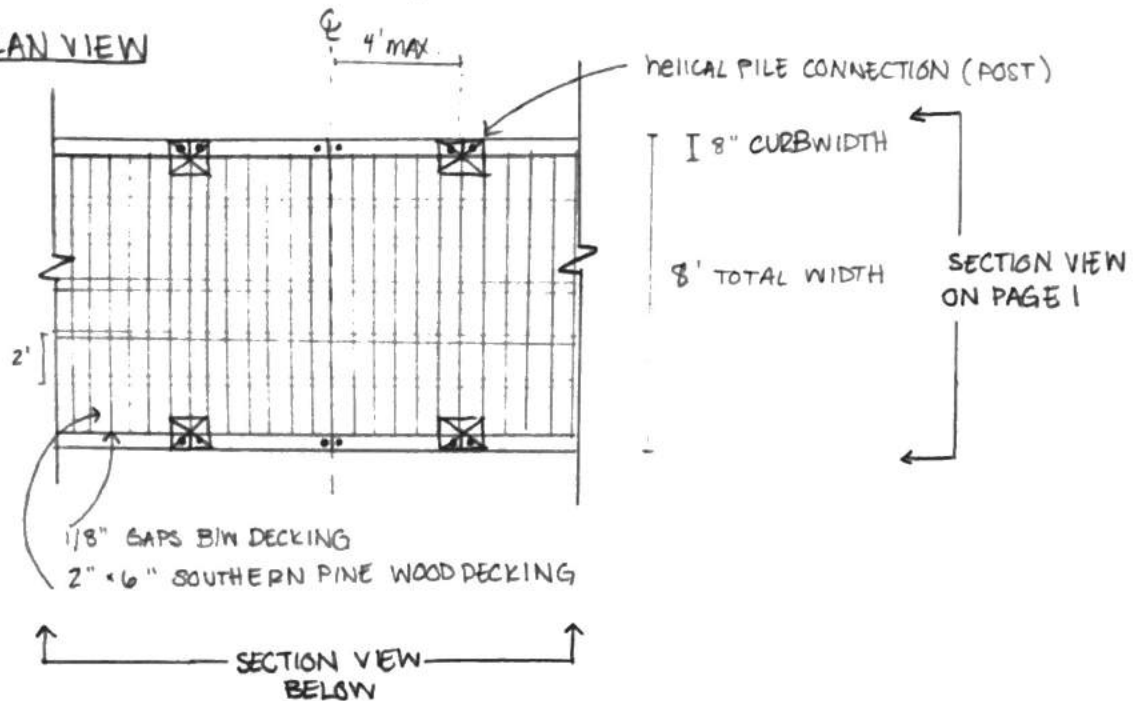
$$\Rightarrow 1.2 (19) + 1.6 (100) + .5 (30) = \boxed{198 \text{ PSF}}$$

SOIL STRENGTH: ASSUME STRENGTH OF MUCK (AS DESCRIBED IN geotechnical analysis) IS < 1500 PSF (I.E. WEAK SOIL CONDITIONS). ACCORDING TO THE WDNR, THIS REQUIRES THE HELICAL PILES TO BE INSTALLED WITH AN EMBEDMENT > 7'0".

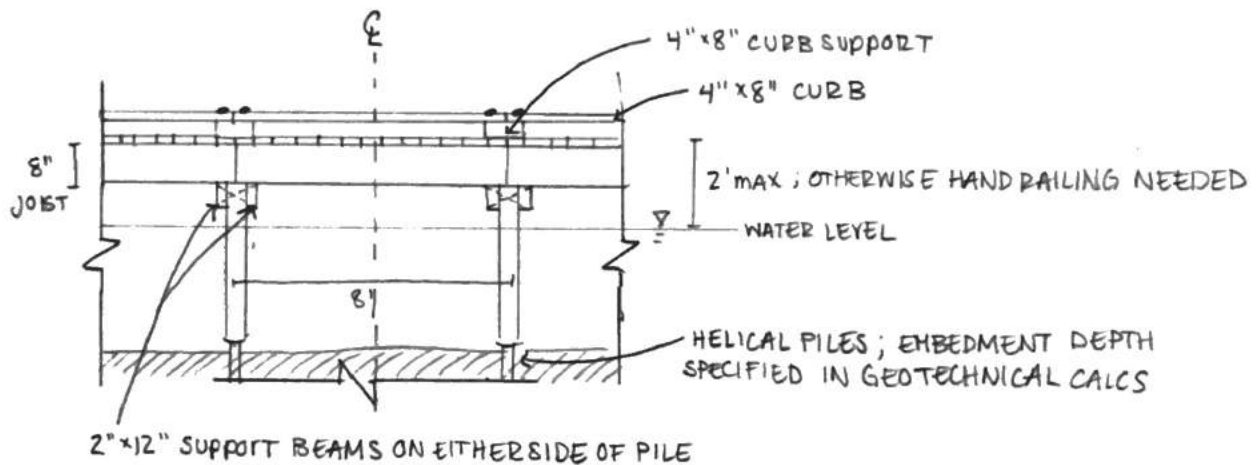
* VALUES AND EQUATIONS FOR FOLLOWING CALCULATIONS WILL BE FROM THE AMERICAN FOREST AND PAPER ASSOCIATION (AMERICAN WOOD COUNCIL (AWC)) NATIONAL DESIGN SPECIFICATION (NDS) DESIGN VALUES FOR WOOD CONSTRUCTION *

OPTION CHOSEN FOR AHUSKA PARK DESIGN: OPTION 2 (WINTERIZED)

PLAN VIEW



SECTION VIEW



SOUTHERN PINE NO. 2

BENDING DESIGN VALUE : $F_b = 1500 \text{ psi}$ (NDS SUPPLEMENT TABLE 4B)

F_b ADJUSTED FOR CONDITIONS : $F_b' = F_b (C_D)(C_m)(C_t)(C_L)(C_F)(C_{FU})(C_i)(C_r)(C_e)$

... WHERE : $C_D = 1.0$ (table 2.3.2)

$C_m = .85$ (table 4c)

$C_t = 1.0$ ($T \leq 100^\circ\text{F}$, wet) (table 2.3.3)

$C_L = 1.0$ (table 4.3.5)

$C_F = 1.0$ (table 4.8)

$C_{FU} = 1.0$ (pg. 36)

$C_i = 1.0$

$C_r = 1.15$ (4.3.8)

$C_e = 1.0$ (3.3.4)

$$\Rightarrow F_b' = 1500 \text{ psi} (.85)(1.15)$$

$$\underline{\underline{F_b' = 1466 \text{ psi}}}$$

DECKING

$$F_b = m/s ; S = S_{yy} = .516 \text{ in}^3$$

$$m = \frac{Wl^2}{8} ; W = \text{Dead Load} + \text{Live Load} / \text{in.}$$

$$= \left(\frac{40 \text{ PSF} \cdot .5 \text{ FT}}{12 \text{ in/FT}} \right) + \left(\frac{100 \text{ PSF} \cdot .5 \text{ FT}}{12 \text{ in/FT}} \right) = 1.67 \frac{\text{lb}}{\text{in}} + 4.17 \frac{\text{lb}}{\text{in}}$$

$$W = 5.83 \text{ lb/in} \quad \swarrow \text{INCLUDES WOOD AND SNOW LOADS}$$

$$l = 2' \text{ (between joists)} \cdot 12''/\text{FT} = 24''$$

$$m = \frac{(5.83 \text{ lb/in})(24'')^2}{8} = 419.76 \text{ lb-in}$$

$$F_b = 419.76 \text{ lb-in} / .516 \text{ in}^3 = \underline{813.49} < 1466 \text{ PSI} \Rightarrow \text{OK}$$

JOISTS

$$F_b = m/s ; S = S_{xx} = 13.14 \text{ in}^3$$

$$m = \frac{Wl^2}{8} ; W = 6.88 \text{ lb/in}$$

$$l = 8' \cdot 12''/\text{FT} = 96 \text{ in}$$

$$m = \frac{6.88 \text{ lb/in} \cdot (96 \text{ in})^2}{8} = 7925.76 \text{ lb-in}$$

$$F_b = 7925.76 \text{ lb-in} / 13.14 \text{ in}^3 = \underline{603.18 \text{ PSI}} < 1466 \text{ PSI} \Rightarrow \text{OK}$$

PILES

CALCULATIONS PROVIDED IN GEOTECHNICAL CALCULATIONS

OBSERVATION TOWER

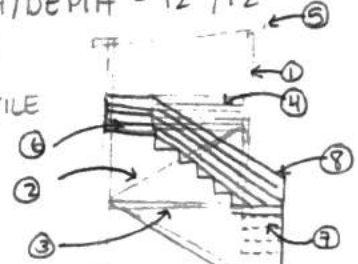
NOTES: • MADE OF SOUTHERN PINE (SAME MATERIAL AS BOARDWALK)

• MANY DIMENSIONING / CALCULATIONS COMPLETED BY REFERENCING
UNIFORM DWELLING CODE AND EXISTING SIMILAR STRUCTURES.WEIGHT CALCULATION

- 4 6" x 6" POSTS x 21' ①
- 8 2" x 6" BRACINGS x 14' (DIAG.) ②
- 8 2" x 6" BRACINGS x 12' (HORIZ.) ③
- 12 2" x 4" RAILINGS x 12' ④
- 4 2" x 4" RAILINGS x 7' ⑤
- 1 12.5' x 12.5' x 4" ROOF ⑥
- 1 12' x 12' x 4" PLATFORM ⑦
- (17' x 5') + (12' x 5') x 2" STAIRS ⑧
- 8 2" x 4" STAIR RAILINGS x 17' ⑨
- 8 2" x 4" STAIR RAILINGS x 12'
- 4 2" x 4" STAIR RAILINGS x 5'

SOUTHERN PINE DENSITY = 35 lb/ft³
 PLATFORM HEIGHT = 14 FT
 TOTAL HEIGHT = 21 FT
 TOTAL WIDTH / DEPTH = 17' / 17'
 TOWER WIDTH / DEPTH = 12' / 12'
 (W/O STAIRS)

SKETCH: PROFILE



$$21 \text{ CF} + 9.33 \text{ CF} + 8 \text{ CF} + 8 \text{ CF} + 1.56 \text{ CF} + 52.08 \text{ CF} + 48 \text{ CF} + 24.17 \text{ CF} + 14 \text{ CF} = 186.14 \text{ CF}$$

$$186.14 \text{ ft}^3 \cdot 35 \text{ lb/ft}^3 = \underline{6515 \text{ lb}}$$

DESIGN LOAD: LIVE LOAD: 50 PSF

DEAD LOAD: 6515 lb / 17' x 17' = 23 PSF

SNOW LOAD: 30 PSF

STRENGTH DESIGN METHOD LOAD COMBINATION

$$(1.2 \cdot 23) + (1.6 \cdot 50) + .5(30) = \underline{132 \text{ PSF}}$$

STAIR CALCULATION

TREAD HEIGHT: 8"

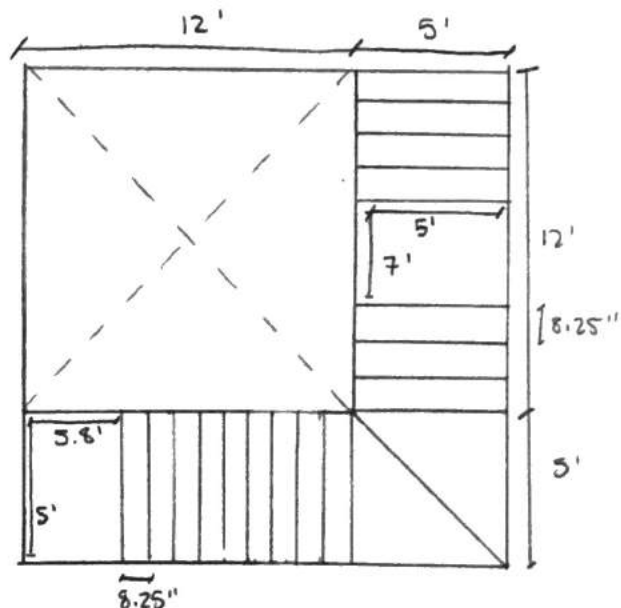
TREAD DEPTH: 8.25"

TREAD WIDTH: 5'

HEIGHT TOT.: 14'

14' / 8" = 21 stairs necessary

WIDTH TOT.: 12'

12' / 8.25" = 17 stairs per side
available

FINAL LAYOUT (NOT TO SCALE)
 • BIRD'S EYE VIEW

Table 4B Design Values for Visually Graded Southern Pine Dimension Lumber (2"-4" thick)^{1,2,3,4}

(Tabulated design values are for normal load duration and dry service conditions, unless specified otherwise. See NDS 4.3 for a comprehensive description of design value adjustment factors.)

USE WITH TABLE 4B ADJUSTMENT FACTORS

Species and commercial grade	Size classification	Design values in pounds per square inch (psi)						Grading Rules Agency
		Bending F _b	Tension parallel to grain F _t	Shear parallel to grain F _v	Compression perpendicular to grain F _{cL}	Compression parallel to grain F _c	Modulus of Elasticity E	
SOUTHERN PINE								
Dense Select Structural	2"-4" wide	3050	1850	175	660	2250	1,900,000	SPIB
Select Structural		2850	1600	175	565	2100	1,800,000	
Non-Dense Select Structural		2850	1350	175	480	1950	1,700,000	
No.1 Dense		2000	1100	175	660	2000	1,800,000	
No.1		1850	1050	175	565	1850	1,700,000	
No.1 Non-Dense		1700	900	175	480	1700	1,600,000	
No.2 Dense		1700	875	175	660	1850	1,700,000	
No.2		1500	825	175	565	1650	1,600,000	
No.2 Non-Dense		1350	775	175	480	1600	1,400,000	
No.3 and Stud		850	475	175	565	975	1,400,000	
Construction	4" wide	1100	625	175	565	1800	1,500,000	
Standard		625	350	175	565	1500	1,300,000	
Utility		300	175	175	565	975	1,300,000	
Dense Select Structural	5"-6" wide	2700	1500	175	660	2150	1,900,000	
Select Structural		2550	1400	175	565	2000	1,800,000	
Non-Dense Select Structural		2350	1200	175	480	1850	1,700,000	
No.1 Dense		1750	950	175	660	1900	1,800,000	
No.1		1650	900	175	565	1750	1,700,000	
No.1 Non-Dense		1500	800	175	480	1600	1,600,000	
No.2 Dense		1450	775	175	660	1750	1,700,000	
No.2		1250	725	175	565	1600	1,600,000	
No.2 Non-Dense		1150	675	175	480	1500	1,400,000	
No.3 and Stud		750	425	175	565	925	1,400,000	
Dense Select Structural	8" wide	2450	1350	175	660	2050	1,900,000	
Select Structural		2300	1300	175	565	1900	1,800,000	
Non-Dense Select Structural		2100	1100	175	480	1750	1,700,000	
No.1 Dense		1650	875	175	660	1800	1,800,000	
No.1		1500	825	175	565	1650	1,700,000	
No.1 Non-Dense		1350	725	175	480	1550	1,600,000	
No.2 Dense		1400	675	175	660	1700	1,700,000	
No.2		1200	650	175	565	1550	1,600,000	
No.2 Non-Dense		1100	600	175	480	1450	1,400,000	
No.3 and Stud		700	400	175	565	875	1,400,000	
Dense Select Structural	10" wide	2150	1200	175	660	2000	1,900,000	
Select Structural		2050	1100	175	565	1850	1,800,000	
Non-Dense Select Structural		1850	950	175	480	1750	1,700,000	
No.1 Dense		1450	775	175	660	1750	1,800,000	
No.1		1300	725	175	565	1600	1,700,000	
No.1 Non-Dense		1200	650	175	480	1500	1,600,000	
No.2 Dense		1200	625	175	660	1650	1,700,000	
No.2		1050	575	175	565	1500	1,600,000	
No.2 Non-Dense		950	550	175	480	1400	1,400,000	
No.3 and Stud		600	325	175	565	850	1,400,000	
Dense Select Structural	12" wide*	2050	1100	175	660	1950	1,900,000	
Select Structural		1900	1050	175	565	1800	1,800,000	
Non-Dense Select Structural		1750	900	175	480	1700	1,700,000	
No.1 Dense		1350	725	175	660	1700	1,800,000	
No.1		1250	675	175	565	1600	1,700,000	
No.1 Non-Dense		1150	600	175	480	1500	1,600,000	
No.2 Dense		1150	575	175	660	1600	1,700,000	
No.2		975	550	175	565	1450	1,600,000	
No.2 Non-Dense		900	525	175	480	1350	1,400,000	
No.3 and Stud		575	325	175	565	825	1,400,000	

4

DESIGN VALUES

Table 1B Section Properties of Standard Dressed (S4S) Sawn Lumber

Nominal Size b x d	Standard Dressed Size (S4S) b x d Inches x inches	Area of Section A in ²	X-X AXIS		Y-Y AXIS		Approximate weight in pounds per linear foot (lb/ft) of piece when density of wood equals:					
			Section Modulus S _{xx} in ³	Moment of Inertia I _{xx} in ⁴	Section Modulus S _{yy} in ³	Moment of Inertia I _{yy} in ⁴						
							25 lb/ft ³	30 lb/ft ³	35 lb/ft ³	40 lb/ft ³	45 lb/ft ³	50 lb/ft ³
1 x 3	3/4 x 2-1/2	1.875	0.781	0.977	0.234	0.088	0.326	0.391	0.456	0.521	0.586	0.651
1 x 4	3/4 x 3-1/2	2.625	1.531	2.680	0.328	0.123	0.456	0.547	0.638	0.729	0.820	0.911
1 x 6	3/4 x 5-1/2	4.125	3.781	10.40	0.516	0.193	0.718	0.859	1.003	1.146	1.289	1.432
1 x 8	3/4 x 7-1/4	5.438	6.570	23.82	0.680	0.255	0.944	1.133	1.322	1.510	1.699	1.888
1 x 10	3/4 x 9-1/4	6.938	10.70	49.47	0.867	0.325	1.204	1.445	1.688	1.927	2.168	2.409
1 x 12	3/4 x 11-1/4	8.438	15.82	88.99	1.055	0.396	1.465	1.758	2.051	2.344	2.637	2.930
2 x 3	1-1/2 x 2-1/2	3.750	1.563	1.953	0.838	0.703	0.651	0.781	0.911	1.042	1.172	1.302
2 x 4	1-1/2 x 3-1/2	5.250	3.083	5.359	1.313	0.984	0.911	1.094	1.276	1.458	1.641	1.823
2 x 5	1-1/2 x 4-1/2	6.750	5.083	11.39	1.688	1.266	1.172	1.406	1.641	1.875	2.109	2.344
2 x 6	1-1/2 x 5-1/2	8.250	7.563	20.80	2.063	1.547	1.432	1.719	2.005	2.292	2.578	2.865
2 x 8	1-1/2 x 7-1/4	10.88	13.14	47.63	2.719	2.039	1.888	2.266	2.643	3.021	3.398	3.776
2 x 10	1-1/2 x 9-1/4	13.88	21.39	98.93	3.469	2.602	2.409	2.891	3.372	3.854	4.336	4.818
2 x 12	1-1/2 x 11-1/4	16.88	31.64	178.0	4.219	3.164	2.930	3.516	4.102	4.688	5.273	5.859
2 x 14	1-1/2 x 13-1/4	19.88	43.89	290.8	4.989	3.727	3.451	4.141	4.831	5.521	6.211	6.901
3 x 4	2-1/2 x 3-1/2	8.750	5.104	8.932	3.646	4.557	1.519	1.823	2.127	2.431	2.734	3.038
3 x 5	2-1/2 x 4-1/2	11.25	8.438	18.98	4.688	5.859	1.953	2.344	2.734	3.125	3.516	3.906
3 x 6	2-1/2 x 5-1/2	13.75	12.60	34.66	5.729	7.161	2.387	2.865	3.342	3.819	4.297	4.774
3 x 8	2-1/2 x 7-1/4	18.13	21.90	79.39	7.552	9.440	3.147	3.776	4.405	5.035	5.664	6.293
3 x 10	2-1/2 x 9-1/4	23.13	35.65	164.9	9.635	12.04	4.015	4.818	5.621	6.424	7.227	8.030
3 x 12	2-1/2 x 11-1/4	28.13	52.73	296.6	11.72	14.65	4.883	5.859	6.836	7.813	8.789	9.766
3 x 14	2-1/2 x 13-1/4	33.13	73.15	484.6	13.80	17.25	5.751	6.901	8.051	9.201	10.35	11.50
3 x 16	2-1/2 x 15-1/4	38.13	96.90	738.9	15.89	19.86	6.619	7.943	9.266	10.59	11.91	13.24
4 x 4	3-1/2 x 3-1/2	12.25	7.146	12.51	7.146	12.51	2.127	2.552	2.977	3.403	3.828	4.253
4 x 5	3-1/2 x 4-1/2	15.75	11.81	26.58	9.188	16.08	2.734	3.281	3.828	4.375	4.922	5.469
4 x 6	3-1/2 x 5-1/2	19.25	17.65	48.53	11.23	19.65	3.342	4.010	4.679	5.347	6.016	6.684
4 x 8	3-1/2 x 7-1/4	25.38	30.66	111.1	14.80	25.90	4.405	5.286	6.168	7.049	7.930	8.811
4 x 10	3-1/2 x 9-1/4	32.38	49.91	230.8	18.89	33.05	5.621	6.745	7.869	8.993	10.12	11.24
4 x 12	3-1/2 x 11-1/4	39.38	73.83	415.3	22.97	40.20	6.836	8.203	9.570	10.94	12.30	13.67
4 x 14	3-1/2 x 13-1/4	46.38	102.4	678.5	27.05	47.34	8.051	9.661	11.27	12.88	14.49	16.10
4 x 16	3-1/2 x 15-1/4	53.38	135.7	1034	31.14	54.49	9.266	11.12	12.97	14.83	16.68	18.53
5 x 5	4-1/2 x 4-1/2	20.25	15.19	34.17	15.19	34.17	3.516	4.219	4.922	5.625	6.328	7.031
6 x 6	5-1/2 x 5-1/2	30.25	27.73	76.26	27.73	76.26	5.252	6.302	7.352	8.403	9.453	10.50
6 x 8	5-1/2 x 7-1/2	41.25	51.58	193.4	37.81	104.0	7.161	8.594	10.03	11.46	12.89	14.32
6 x 10	5-1/2 x 9-1/2	52.25	82.73	393.0	47.90	131.7	9.071	10.89	12.70	14.51	16.33	18.14
6 x 12	5-1/2 x 11-1/2	63.25	121.2	697.1	57.98	159.4	10.98	13.18	15.37	17.57	19.77	21.96
6 x 14	5-1/2 x 13-1/2	74.25	167.1	1128	68.06	187.2	12.89	15.47	18.05	20.63	23.20	25.78
6 x 16	5-1/2 x 15-1/2	85.25	220.2	1707	78.15	214.9	14.80	17.76	20.72	23.68	26.64	29.60
6 x 18	5-1/2 x 17-1/2	96.25	280.7	2456	88.23	242.6	16.71	20.05	23.39	26.74	30.08	33.42
6 x 20	5-1/2 x 19-1/2	107.3	348.6	3398	98.31	270.4	18.62	22.34	26.07	29.79	33.52	37.24
6 x 22	5-1/2 x 21-1/2	118.3	423.7	4555	108.4	298.1	20.53	24.64	28.74	32.85	36.95	41.06
6 x 24	5-1/2 x 23-1/2	129.3	506.2	5948	118.5	325.8	22.44	26.93	31.41	35.90	40.39	44.88
8 x 8	7-1/2 x 7-1/2	56.25	70.31	263.7	70.31	263.7	9.766	11.72	13.67	15.63	17.58	19.53
8 x 10	7-1/2 x 9-1/2	71.25	112.8	535.9	89.06	334.0	12.37	14.84	17.32	19.79	22.27	24.74
8 x 12	7-1/2 x 11-1/2	86.25	165.3	950.5	107.8	404.3	14.97	17.97	20.96	23.96	26.95	29.95
8 x 14	7-1/2 x 13-1/2	101.3	227.8	1538	126.6	474.6	17.58	21.09	24.61	28.13	31.64	35.16
8 x 16	7-1/2 x 15-1/2	116.3	300.3	2327	145.3	544.9	20.18	24.22	28.26	32.29	36.33	40.36
8 x 18	7-1/2 x 17-1/2	131.3	382.8	3350	164.1	615.2	22.79	27.34	31.90	36.46	41.02	45.57
8 x 20	7-1/2 x 19-1/2	146.3	475.3	4634	182.8	685.5	25.39	30.47	35.55	40.63	45.70	50.78
8 x 22	7-1/2 x 21-1/2	161.3	577.8	6211	201.6	755.9	27.99	33.59	39.19	44.79	50.39	55.99
8 x 24	7-1/2 x 23-1/2	176.3	690.3	8111	220.3	826.2	30.60	36.72	42.84	48.96	55.08	61.20
10 x 10	9-1/2 x 9-1/2	90.25	142.9	678.8	142.9	678.8	15.67	18.80	21.94	25.07	28.20	31.34
10 x 12	9-1/2 x 11-1/2	109.3	209.4	1204	173.0	821.7	18.97	22.76	26.55	30.35	34.14	37.93
10 x 14	9-1/2 x 13-1/2	128.3	288.6	1948	203.1	964.5	22.27	26.72	31.17	35.63	40.08	44.53
10 x 16	9-1/2 x 15-1/2	147.3	380.4	2948	233.1	1107	25.56	30.68	35.79	40.90	46.02	51.13
10 x 18	9-1/2 x 17-1/2	166.3	484.9	4243	263.2	1250	28.86	34.64	40.41	46.18	51.95	57.73
10 x 20	9-1/2 x 19-1/2	185.3	602.1	5870	293.3	1393	32.16	38.59	45.03	51.46	57.89	64.32
10 x 22	9-1/2 x 21-1/2	204.3	731.9	7888	323.4	1536	35.46	42.55	49.64	56.74	63.83	70.92
10 x 24	9-1/2 x 23-1/2	223.3	874.4	10270	353.5	1679	38.76	46.51	54.26	62.01	69.77	77.52

Table 4.3.1 Applicability of Adjustment Factors for Sawn Lumber

		Load Duration Factor	Wet Service Factor	Temperature Factor	Beam Stability Factor	Size Factor	Flat Use Factor	Incising Factor	Repetitive Member Factor	Form Factor	Column Stability Factor	Buckling Stiffness Factor	Bearing Area Factor
$F'_b = F_b$	x	C_D	C_M	C_t	C_L	C_F	C_{fu}	C_i	C_r	C_f	-	-	-
$F'_t = F_t$	x	C_D	C_M	C_t	-	C_F	-	C_i	-	-	-	-	-
$F'_v = F_v$	x	C_D	C_M	C_t	-	-	-	C_i	-	-	-	-	-
$F'_{c\perp} = F_{c\perp}$	x	-	C_M	C_t	-	-	-	C_i	-	-	-	-	C_b
$F'_c = F_c$	x	C_D	C_M	C_t	-	C_F	-	C_i	-	-	C_P	-	-
$E' = E$	x	-	C_M	C_t	-	-	-	C_i	-	-	-	C_T	-

4.3.6.3 For beams of circular cross section with a diameter greater than 13.5", or for 12" or larger square beams loaded in the plane of the diagonal, the size factor shall be determined in accordance with 4.3.6.2 on the basis of an equivalent conventionally loaded square beam of the same cross-sectional area.

4.3.6.4 Bending design values for all species of 2" thick or 3" thick Decking, except Redwood, shall be multiplied by the size factors specified in Table 4E.

4.3.7 Flat Use Factor, C_{fu}

When sawn lumber 2" to 4" thick is loaded on the wide face, multiplying the bending design value, F_b , by the flat use factors, C_{fu} , specified in Tables 4A, 4B, 4C and 4F, shall be permitted.

4.3.8 Incising Factor, C_i

Tabulated design values shall be multiplied by the following incising factor, C_i , when dimension lumber is incised parallel to grain a maximum depth of 0.4", a maximum length of 3/8", and density of incisions up to 1,100/ft². Incising factors shall be determined by test or by calculation using reduced section properties for incising patterns exceeding these limits.

Table 4.3.8 Incising Factors, C_i

Design Value	C_i
E	0.95
F_b, F_t, F_c	0.80
$F_v, F_{c\perp}$	1.00

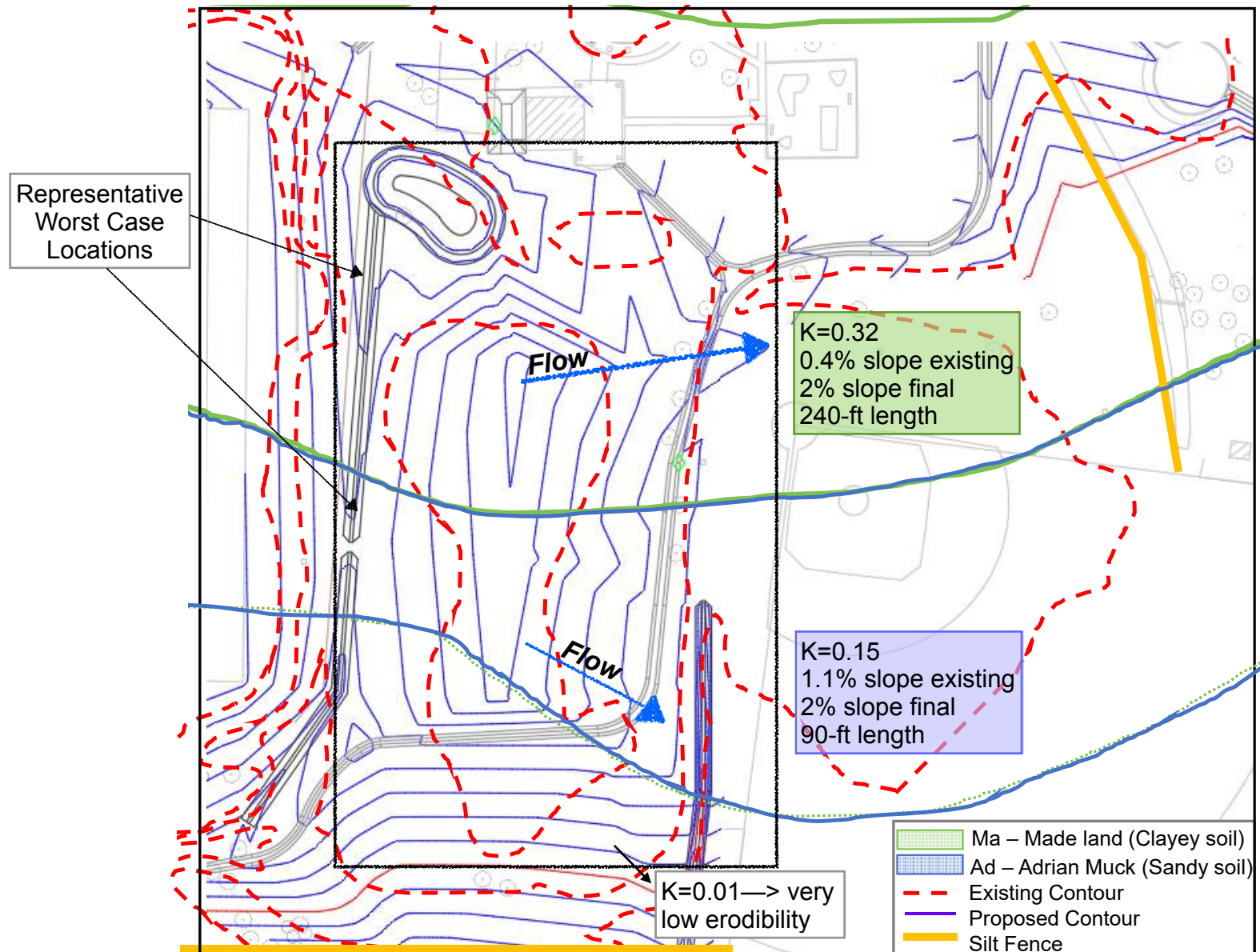
4.3.9 Repetitive Member Factor, C_r

Bending design values, F_b , in Tables 4A, 4B, 4C and 4F for dimension lumber 2" to 4" thick shall be multiplied by the repetitive member factor, $C_r = 1.15$, when such members are used as joists, truss chords, rafters, studs, planks, decking or similar members which are in contact or spaced not more than 24" on centers, are not less than three in number and are joined by floor, roof or other load distributing elements adequate to support the design load. (A load distributing element is any adequate system that is designed or has been proven by experience to transmit the design load to adjacent members, spaced as described above, without displaying structural weakness or unacceptable deflection. Subflooring, flooring, sheathing, or other covering elements and nail gluing or tongue and groove joints, and through nailing generally meet these criteria.) Repetitive member bending design values in

Section 6

Appendix C: Environmental Analysis

Existing & Proposed Grading and Flow Paths for use in USLE Calculations on Construction Site.





Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Official Version 1.0 (05-15-2015)



YEAR 1

Developer:

E Drive Design

Project:

Ahuska Park - Ma soil (Clay) area

Date:

11/30/2016

County:

Dane

Version 1.0

Activity	Begin Date	End Date	Period % R	Annual R Factor	Sub Soil Texture	Soil Erodibility K Factor	Slope (%)	Slope Length (feet)	LS Factor	Land Cover C Factor	Soil loss A (tons/acre)	Sediment Control Practice	Sediment Discharge (tons/acre)
Bare Ground	4/4/2017	6/20/2017	27.6%	150	Clay	0.32	0.4%	240	0.11	1.00	1.4	Silt Fence	0.5
Bare Ground	6/20/2017	8/7/2017	35.4%	150	Clay	0.32	2.0%	240	0.26	1.00	4.4	Silt Fence	2.3
Seeding	8/7/2017	10/7/2017	25.0%	150	Clay	0.32	2.0%	240	0.26	0.40	1.3	Silt Fence	0.5
End	10/7/2017	-----	-----	-----	-----	-----	2.0%	240	0.26	-----	-----		0.0
		-----	-----	-----	-----	-----	2.0%	0	-----	-----	-----		0.0
		-----	-----	-----	-----	-----	0.0%	0	-----	-----	-----		0.0
TOTAL											7.1	TOTAL	3.4
												% Reduction Required	NONE

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.

The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.

For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15 and 8/7-8/29 Turf, introduced grasses and legumes
Thaw-6/30 Native Grasses, forbs, and legumes

Designed By:	Kimberly Klawans
Date	11/30/2016



Soil Loss & Sediment Discharge Calculation Tool

for use on Construction Sites in the State of Wisconsin

WDNR Official Version 1.0 (05-15-2015)



YEAR 1

Developer:

E Drive Design

Project:

Ahuska Park - Ad soil (Sand) area

Date:

11/30/2016

County:

Dane

Version 1.0

Activity	Begin Date	End Date	Period % R	Annual R Factor	Sub Soil Texture	Soil Erodibility K Factor	Slope (%)	Slope Length (feet)	LS Factor	Land Cover C Factor	Soil loss A (tons/acre)	Sediment Control Practice	Sediment Discharge (tons/acre)
Bare Ground	4/4/2017	6/4/2017	17.7%	150	Sand	0.15	1.1%	90	0.13	1.00	0.5	Silt Fence	0.3
Bare Ground	6/4/2017	8/7/2017	45.2%	150	Sand	0.15	2.0%	90	0.19	1.00	2.0	Silt Fence	1.1
Seeding	8/7/2017	10/7/2017	25.0%	150	Sand	0.15	2.0%	90	0.19	0.40	0.4	Silt Fence	0.2
End	10/7/2017	-----	-----	-----	-----	-----	2.0%	90	0.19	-----	-----		0.0
		-----	-----	-----	-----	-----	2.0%	0	-----	-----	-----		0.0
		-----	-----	-----	-----	-----	0.0%	0	-----	-----	-----		0.0
TOTAL											2.9	TOTAL	1.5
												% Reduction Required	NONE

Notes:

See Help Page for further descriptions of variables and items in drop-down boxes.

The last land disturbing activity on each sheet must be 'End'. This is either 12 months from the start of construction or final stabilization.

For periods of construction that exceed 12 months, please demonstrate that 5 tons/acre/year is not exceeded in any given 12 month period.

NOTE: THIS TOOL ONLY ADDRESSED SOIL EROSION DUE TO SHEET FLOW. MEASURES TO CONTROL CHANNEL EROSION MAY ALSO BE REQUIRED TO MEET SEDIMENT DISCHARGE REQUIREMENTS.

Recommended Permanent Seeding Dates:

4/1-5/15 and 8/7-8/29 Turf, introduced grasses and legumes
Thaw-6/30 Native Grasses, forbs, and legumes

Designed By:	Kimberly Klawans
Date	11/30/2016

Universal Soil Loss Equation (USLE) Soil Loss & Sediment Discharge Calculations

Guiding Parameters

- Site Location: Dane County
- Initial Grading:
 - Ma (clay) area: 240-ft slope @ 0.4%, 4/4/17 to 6/20/17
 - Ad (sand) area: 90-ft slope @ 1.1%, 4/4/17 to 6/20/17
- Final Grading:
 - Ma (clay) area: 240-ft @ 2%, 6/20/17 to 8/7/17
 - Ad (sand) area 90-ft @ 2%, 6/20/17 to 8/7/17
- Seeding: 8/7/17
- 60-Day Vegetation Establishment: 10/7/17
- Sediment Control Practice: Silt Fence

1. Activity

Bare Ground (existing grading)→Bare Ground (final grading)→Seeding→End

2. Date

4/4/17→6/20/17→8/7/17*→10/7/17**

*WDNR recommended permanent seeding dates for turf and introduced grasses: 8/7-8/29

**60-day vegetative cover establishment period following seeding

3. Period %R

Automatically calculated percentage of annual rainfall factor, R, that has passed to date

4. Annual R Factor

Dane County, R=150

5. Sub Soil Texture

Soil map unit determined from Dane County Soil Survey

Ma = Made land→Clay

Ad = Adrian Muck→Sand

6. Soil Erodibility Factor, K

Clay→K=0.32

Sand→K=0.15

7. Slope, θ

Overland flow slope estimated from contours (existing and proposed) as labeled on figure.

8. Slope Length, L

Overland flow path length from top to bottom of slope as labeled on figure.

9. LS Factor, LS

$$LS = \left(\frac{L}{76.6} \right) M (65.41 \sin 2\theta + 4.56 \sin \theta + 0.065)$$

Where, L = slope length in feet

θ = angle of slope (in degrees)

M = 0.2 for slopes < 1%

= 0.3 for slopes 1.0 to 3.0%

10. Land Cover Factor, C

Bare Ground, $C=1.00$

Seeding, $C=0.40$

11. Soil Loss, A^*

$$A = (\% R) \times (R) \times (K) \times (LS) \times (C)$$

**Soil loss rate must be less than 7.5 tons/acre/year to meet Dane County's Erosion Control and Stormwater Management Ordinance.*

Ma (Clay) area: $A_{total} = 7.1 \text{ tons/acre/year} < 7.5 \text{ tons/acre/year}$ OK

Ad (Sand) area: $A_{total} = 2.9 \text{ tons/acre/year} < 7.5 \text{ tons/acre/year}$ OK

12. Sediment Discharge, SD^*

$$SD = (A - D) \times (1 - \text{Removal efficiency of sediment control practice})$$

Where, D = Deposition factor = (Period %R) \times (Estimated 1 year soil deposition)

Estimated 1 year soil deposition = 0.5 for sand, slope < 0.5%

$$= 28.444(LS)^2 - 13.143(LS)$$

+ 3.0984 for clay, slope
< 0.5%

Removal efficiency = 40% for silt fence

**Sediment discharge rate must be less than 5 tons/acre/year for compliance with NR 151.11(6m)(b) State of Wisconsin Administrative Code.*

Without Sediment Control Practice:

Ma (Clay) area: $SD_{total} = 5.6 \text{ tons/acre/year} > 5 \text{ tons/acre/year} \rightarrow 11\% \text{ Reduction Required}$

Sediment control practice must be used on site to comply with NR 151.11.

13. Sediment Control Practice

With Sediment Control Practice – Silt Fence:

Ma (Clay) area: $SD_{total} = 3.4 \text{ tons/acre/year} < 5 \text{ tons/acre/year}$ OK

Ad (Sand) area: $SD_{total} = 1.5 \text{ tons/acre/year} < 5 \text{ tons/acre/year}$ OK

Section 6

Appendix D:
Geotechnical Report

Geotechnical Report

The purpose of this report is to evaluate the subsurface conditions within the proposed design area, Ahuska Park and the neighboring wetland system, and to provide geotechnical recommendations regarding earthworks, foundation, pile, and pavement design, and construction considerations. The subsurface conditions of Ahuska Park and the wetland system are similar deeper than 16 feet below ground level, however, soil profiles above 15 feet are drastically different, due to the City of Monona landfill that occupied the site prior to it being Ahuska Park.

Local Geology

The Last Glacial Maximum in North America primarily shaped the area of Dane County. At the Green Bay Lobe's maximum extent nearly 15,000 years ago, Dane County was covered in nearly 1,000 feet of ice. About 12,000 years ago, Glacial Lake Yahara engulfed the four major lakes (Mendota, Monona, Waubesa, and Kegonsa), and when the glaciers receded roughly 10,000 years ago the Yahara Watershed seen today began to develop. The Yahara Watershed consists of four lakes connected by the Yahara River and surrounded by wetland area. The glaciers carved local features such as drumlins, lakes, the poorly drained areas of wetland and marsh, and covered the area in nearly up to and greater than 350 feet of poorly sorted deposits of silt, sand, and gravel (Yahara Waterways, 2007). This glacial history is important to understand because it shaped Monona's low-lying areas, such as the neighboring wetland system, and deposited the silty loam abundant in the area.

Subsurface Conditions

Landfill Extent and Depth

Prior to being a WDNR licensed sanitary landfill from 1969 to 1972, "refuse," or residential waste, was reported to the Wisconsin Department of Natural Resources (WDNR) as early as 1966. In addition, the landfill was to be officially abandoned in July 1972, but waste was continually dumped at the site until legal action prompted final inactivity and covering in late-1973/early-1974. Approximately 8 acres of Ahuska Park's 22 acres were used as the licensed Sanitary Landfill from mid-1969 to early-1974. Licensed waste included noncombustible material, wood matter, and residential trash and garbage. 60 to 70% of the waste was concrete, asphalt, wood, and building debris, while 30% to 40% was residential and commercial waste. See Figure 1 below to see the expected waste types.



Figure 1. 1970 WDNR photos of (A) construction waste used as fill, and (B) residential and commercial waste in landfill.

The extent and depth of the landfill was mapped by Eder Associates and the former landfill supervisor and tractor operator in 1993 with a site visit (WDNR, 1996). The site inspection revealed that the landfill was 5 to 6 feet deep, tapering at the edges. In addition, “busted lumber and concrete” was used as the base material beneath the garbage, and additional construction waste was used as fill in the area that currently holds the park entrance and eastern parking lot (WDNR, 1996). Refer to the 1993 site inspection drawing attached at the end of this report. In early-1974 the landfill was covered in 1 to 2 feet of clay-like cover and 2 to 4 inches of topsoil.

Test pits and soil cover profiles conducted by Eder Associates in 1994 confirmed that landfill waste and construction debris ranged from 0.5 to 12 feet deep, but predominantly from 1 to 5 feet (Eder, 1994). While residential, commercial, and construction waste were located at the same depths, construction debris spreads over a larger area of the site due to its extensive use as fill material in the 60s and 70s; it can be expected over 16 acres of Ahuska Park. In addition, the large range of depths to waste presented are due to the fact that waste was not recorded prior to the WDNR landfill license granted in mid-1969, nor from mid-1972 to its final covering in early-1974 (WDNR, 1971).

Ahuska Park Subsurface Conditions

After exemption was granted to the city of Monona to convert the inactive landfill site into a park, Strand Associates covered most of the site with 3 to 4 feet of fill to adequately cover the waste. Areas of additional grading, such as parts of the current soccer field, included as much as 8 feet of fill. The depth of fill was proposed in Eder Associates exemption report in 1994 and confirmed by observing 1994 and 2010 topography contours. Thus, the general soil profile for Ahuska Park (centrally located) is shown in figure 2 to the right.

In addition, soil borings were collected by SES Engineering in 2000 around the proposed shelter location, corresponding to the soil profile to the right. The borings confirmed that the water table resides 10 to 13 feet below the ground surface. No additional construction and earthwork has altered the 2000 SES soil borings more than 4 inches, thus, four soil profiles have been produced based on boring data interpretation (SES, 2000). They are presented on the following 2 pages.

Type	Depth (ft)
Topsoil	0 - 0.5
Fill Cover (Strand)	3.0-4.0
Topsoil	0 - 0.2
Clay-like Cover Soil	1.0-2.0
Landfill Material	6.0 - 10
Native Soil (Silty Loam)	

Figure 2. Ahuska Park Soil Profile

Interpreted from SES Soil Borings performed Feb 28th, 2000, in accordance with ASTM D 1586

[illegible]

Interpreted from SES Soil Borings performed Feb 28th, 2000, in accordance with ASTM D 15

Depth	SB 25 Continued		SB 26 Continued		SB 27 Continued		SB 28 Continued		
(ft)	Profile	Description	Profile	Description	Profile	Description	Profile	Description	
20		Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP) Gray. More clay with depth. Boring ends at 25'	20	Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP)	20	Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP)	20		Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP) More clay with depth. Boring ends at 25'
21			21		21		21		
22			22		22		22		
23			23		23		23		
24			24		24		24		
25			25		25		25		
26			26		26				
27			27		27				
28			28		28				
29			29		29				
30			30		30				
31			31	Silty Fine Sand with Trace to Little Gravel (SM) Grayish-brown with occasional seams of lean clay. Continues to end of boring at 70'.	31	Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP)		<div>Water Table Notes ▽ * at completion ▼ at completion ▼ * after 10 days</div>	
32		32							
33		33							
34		34							
35		35							
36			36		36				
37			37		37				
38			38		38				
39			39		39				
40			40 ~ 70 ft		40 ~ 70 ft				

- ▽* at completion
- ▼ at completion
- ▼* after 10 days

Wetland Subsurface Conditions

According to the U.S. Department of Agriculture's (USDA) Web Soil Survey (WSS), the soil units in the wetland include Adrian muck (20-30%) and Houghton muck (70-80%). The WSS provides typical profiles of these 2 units. The Adrian muck includes muck that extends 0 to 35 inches and sand that occurs 35 to 60 inches. The Houghton muck includes muck that extends 0 to 60 inches (USDA, 2016).

In addition, given the presence of standing water, the majority of the soil is saturated but in the few dry spots of the wetland the water table may be within 1 to 2 feet of the surface. By cross-examining the WSS data and the 2000 SES soil boring data, the following generic profile is shown to the right (Figure 3).

Type	Depth (ft)
Water	0 - 2.0
Muck & Organics	3.0 - 5.0
Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP)	10.0 -15.0
Silty Fine Sand with Trace to Little Gravel (SM)	Continues

Figure 3. Soil profile of the wetland area.

Groundwater Conditions

A Clark Oil Service Station used to be located on the Northeast corner of the site adjacent to Broadway. In 1990, the petroleum product storage tanks were removed and contamination was documented, prompting a groundwater investigation. Warzyn Engineering installed 6 monitoring wells approximately 18 feet deep and a recovery well roughly 30 feet deep, to monitor from 1990 to 1992 (Eder, 1994).

Based on the Warzyn reports, the boring logs are consistent with other soil profiles and groundwater was located roughly 10 to 12 feet below the surface. In addition, groundwater flow is towards Mud Lake in the south/southwest direction, being a larger downgradient discharge area in the Yahara Watershed District. It was also derived that the hydraulic conductivity of the aquifer is 1.6×10^{-3} cm/sec and that the hydraulic gradient across the site is 0.003 ft/ft (Eder, 1994).

Potential Soil and Groundwater Contamination

The landfill is greater than 50 years old and was not constructed with a liner, leachate collection system, or gas extraction system as is common in today's landfills. In addition, the landfill was covered with 1 to 2 feet of low permeability soil and less than half of a foot of topsoil, not a lined cap as seen today. The landfill did not include industrial wastes such as oils, paints, metal sludges, etc. However, as mentioned above, the adjacent site at the time was Clark Oil Service Station which had petroleum product storage tanks removed in 1990. Given the size and depth of the landfill, the waste disposed, and the age and character, the landfill is not expected to produce significant methane, leachate, and volatile organic compounds (VOCs), however tests were performed to confirm this.

In the 1993 site visit by Eder Associates it was noted that no leachate seeps were identified and none have been identified since as well. In 1997, Eder Associates with Soil Essentials used 3 Geoprobe to collect groundwater samples to check for VOCs. The 3 Geoprobe were located near the current park boundaries in the SE corner, SW corner before the patch of wetlands, and in the North center. None of the GW samples (analyzed by U.S. Filter/Enviroscan) had any detectable concentrations of VOCs (Eder, 1997).

In addition to leachate and VOCs, a large concern prior to constructing on the site is methane. Eder Associates performed several tests which revealed no methane threat, but SES performed a more recent and extensive test in 2000. In April, 2000 SES performed 24 soil borings to take methane readings inside the augers. The National Institute for Occupational Safety and Health identifies 1,000 ppm of methane as the maximum exposure workers should endure over an 8-hour period. Additionally, 50,000-150,000 ppm is considered potentially explosive (Atta Atia, 2004). None of the methane readings in 2000 detected methane greater than 5,000 ppm, however, several readings detected amounts greater than 1,000 ppm. The depths of the readings with greater than 1,000 ppm ranged from 7 to 17.5 feet. No readings taken above 5 feet had concentrations greater than 350 ppm. Thus, methane does not pose a direct threat, but construction caution should be used to ensure occupational safety (SES, 2000).

Construction Recommendations

Construction Considerations

Due to variations in weather and construction methods, specific construction problems are difficult to predict. Due to the potentially sensitive nature of on-site soils, it is recommended that general grading activities take place during dry weather. Earthwork construction from late fall to early spring could be complicated due to wet weather and freezing temperatures, and should therefore be avoided if possible. In addition, fill or backfill used under foundations and during grading should never be placed while frozen or on frozen ground.

Given the expected depth to landfill and construction waste of 4-7 feet, when excavations greater than 4 feet are to occur, the budget should include a contingency for removal of landfill waste, and construction waste obstacles, such as concrete and asphalt slabs. The contingency should also include the cost of subsequent fill to replace waste material. Lastly, all excavations extending greater than 4 feet in depth below the ground surface should be sloped or braced in accordance with OSHA standards.

Shelter Extension Foundation Design

Given the presence of landfill and construction waste approximately 4-7 feet beneath the proposed site of the shelter extension a floating slab foundation is recommended at this site. The existing shelter was constructed on a floating slab foundation. After an investigation of the existing shelter which was constructed in 2000, only a few cracks less than 2 inches long were identified on the shelter structure and surrounding concrete, indicating that the floating slab foundation is a successful construction design for this particular site.

Groundwater depths range from 10 to 15 feet below the ground surface on the site, so it is unlikely to pose a threat to foundation integrity. Since the building will not be heated, the subgrade soils beneath the proposed shelter expansion will be subjected to freeze-thaw cycles. Thus, a compacted, well-drained, granular fill base will be required as base layer to protect the concrete slab foundation from heave forces. Total excavation for the floating slab foundation will exceed 4 feet to meet the proper base and sub-base requirements. The contractor is advised to include a contingency for potential removal of landfill waste, and construction waste obstacles, such as concrete and asphalt slabs

Pavement Considerations

Pavement is not expected to exceed 2 feet in excavation depth, therefore there is little to no risk of exposing landfill material. The predicted material beneath the proposed parking lot and

pathways is fill material consisting of clay and sand with some gravel, and potential topsoil in the upper 6 inches. Parking lot pavement will require 1.5 to 2 feet of compacted aggregate and granular fill for base and sub-base layers. These base and sub-base layers will provide strength, minimize differential settlement, and minimize potential heave due to freeze-thaw.

Swale and Rain Garden Considerations

Swales and the rain garden do not exceed excavations greater than 4 feet. Where excavations of greater than 4 feet are required, as mentioned above, the budget should include a contingency for removal and subsequent fill. If the excavated material is clean and acceptable fill it can be stored on site for re-use in grading.

Boardwalk Foundation Design

Boardwalk System Design

The Adrian and Houghton muck units pose several challenges in selecting an appropriate boardwalk pile system. According to the WSS, the Adrian and Houghton muck units have moderate risks of corrosion of concrete and high risks of corrosion of uncoated steel. The risk of corrosion of both concrete and steel is based on the potential soil-induced electrochemical and chemical action that breaks down and weakens such materials (USDA, 2016).

Depth of the piles will need to extend past the 3-5 feet of muck, which is an organic-rich, water-bearing, loose material with a relative density less than 20%. Muck is unsuitable for any foundation and pile systems due to its high compressibility, low density, and low strength. Based on the 2000 SES soil borings the Standard Penetration Test revealed an N-value of < 4, indicating the unit of be soft and unsuitable for typical pile foundations.

The Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP) layer beneath the muck was found to have on average an N-value of 6.7, starting at 5 and becoming stiffer (N=8) with depth, indicating it to be a firm soil, suitable for pile support.

Given the unique soil characteristics, past projects in similar wetland environments, and limited site access to minimize environmental impact, helical piles will be used in the boardwalk system. Helical piles are deep foundations that have a central shafts with helical plates, that are “screwed” into the ground, similar to a wood screws, using torque indicators. The helical plates both act as the means to install the pile and the bearing elements that transfer the loads to the

soil. See design summary below.

Helical Pile Design:

Governing equation to determine helical Pile configuration or plate area (Clayton, 2005):

$$P_u = \sum A_H (CN_C + qN_q)$$

P_u : ultimate bearing capacity

$\sum A_H$: summation of helical plate(s) area

C : cohesion of soil, correlates to unconfined compressive strength

N_C : bearing capacity factor for cohesion = 9 for small shaft screw piles with diameters < 18"

q : soil overburden pressure (can ignore with cohesive soils, since N_q goes to 0)

N_q : bearing capacity factor for granular soil = 0 for cohesive soils because the friction angle, used to determine N_q is 0, by definition of cohesive soils.

Based on the properties of cohesive soils and known N_C , the governing equation to determine helical pile configuration or plate area can be simplified to:

$$P_u = \sum A_H (9C)$$

The Varved Silt (ML), Lean Clay (CL), & Fine Sand (SP) layer that the pile plates will be placed in have an average unconfined compressive strength value of 0.85 tons/sf or 1700 lb/sf .

In order to be conservative in the estimates for the pile design, the weakest value was used to determine plate configuration:

Unconfined compressive strength = 0.70 tons/sf or 1400 lb/sf , correlating to:

C (cohesion) value = 700lb/sf

The structural design load = 792 lb/lf at a pile spacing of 6 lf, which equates to:

Working load, P_w = 6,624 lb, at a Factor of Safety = 2 that equates to:

Ultimate bearing Capacity, P_u = 13,248 lbs

When applied to the governing equation $P_u = \sum A_H(9C)$, the total plate area equates to be

$$\sum A_H = 1.509 \text{ sf}$$

Based on AB Chance Pile Designs (2012), a standard plate configuration that watches the necessary area requirement of 1.509 sf is an 8", 10", and 12" plate configuration.

In addition to the plate area, the shaft sizes were designed. The leading shaft is 5 ft long and is a square shaft with diameter of 1 1/2". In order to adequately support the pile system in the weak muck layer which does not support later forces a thicker extension shaft was required. A round 2 7/8" diameter shaft was selected for the extension pile that is 7 feet long and extends from the boardwalk beam to the plate-bearing lead shaft. See diagram below for final helical pile design. Lastly, steel piles will be galvanized to mitigate the high corrosive risk of the wetland soil.

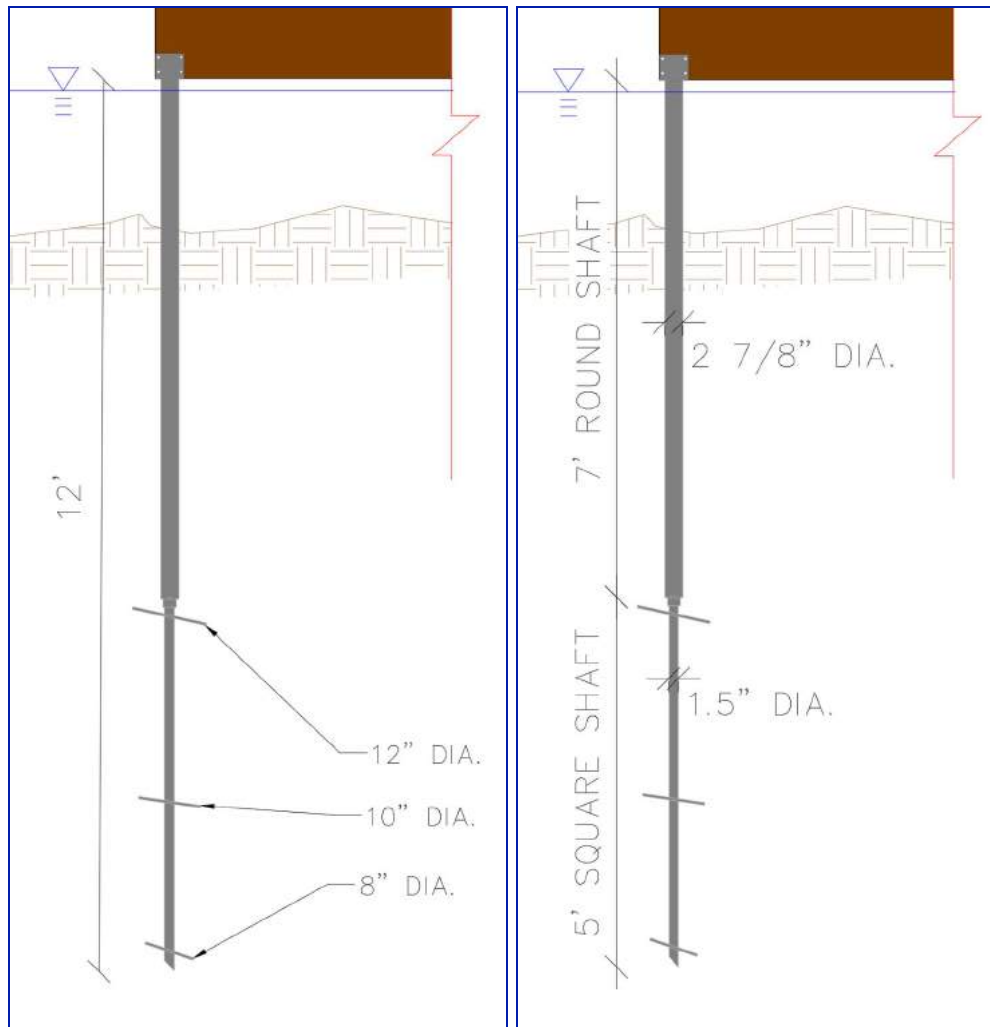


Figure 4. Boardwalk Helical Pile Dimensions: Plate dimensions-left, Shaft(s)-right.

References

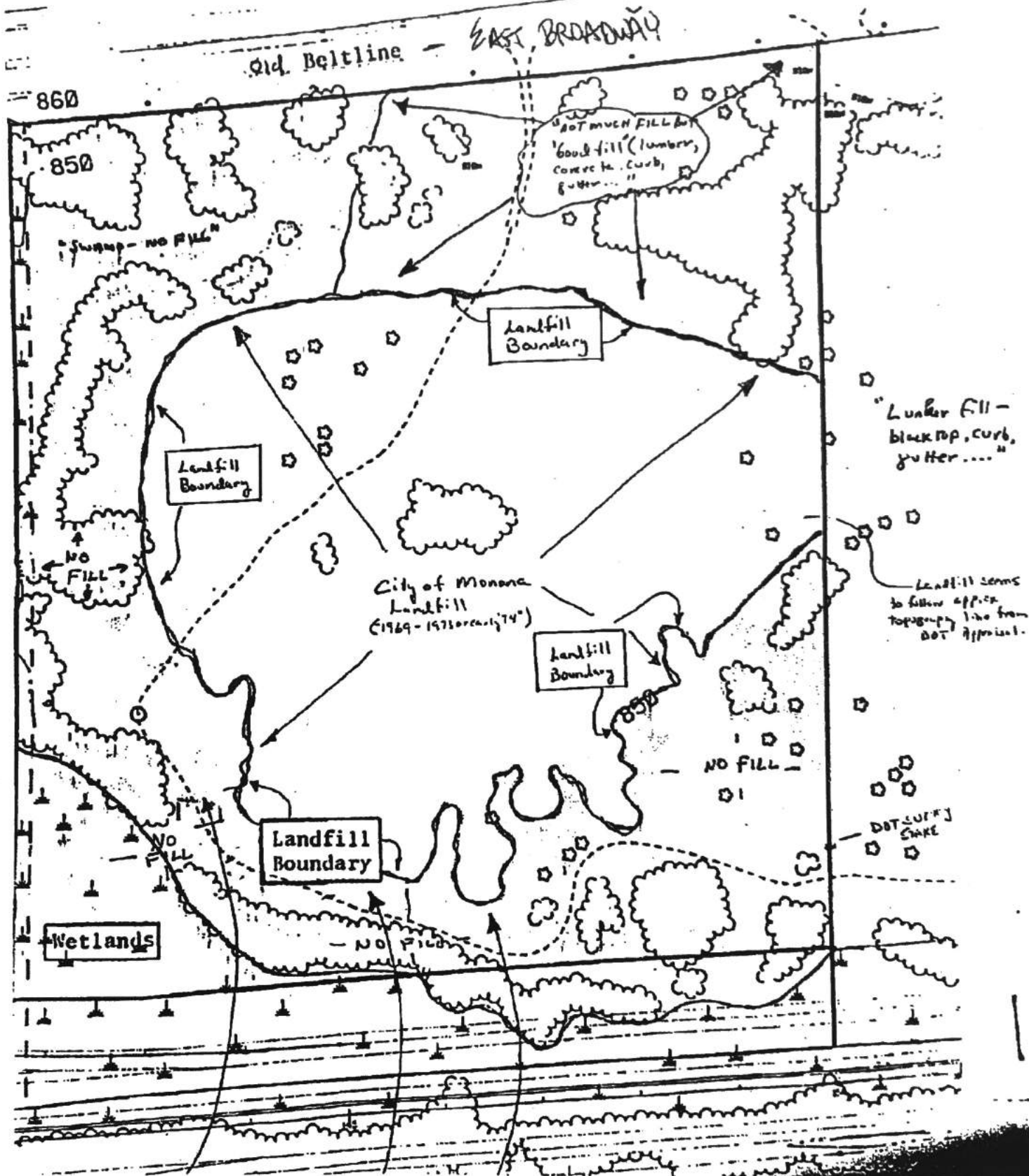
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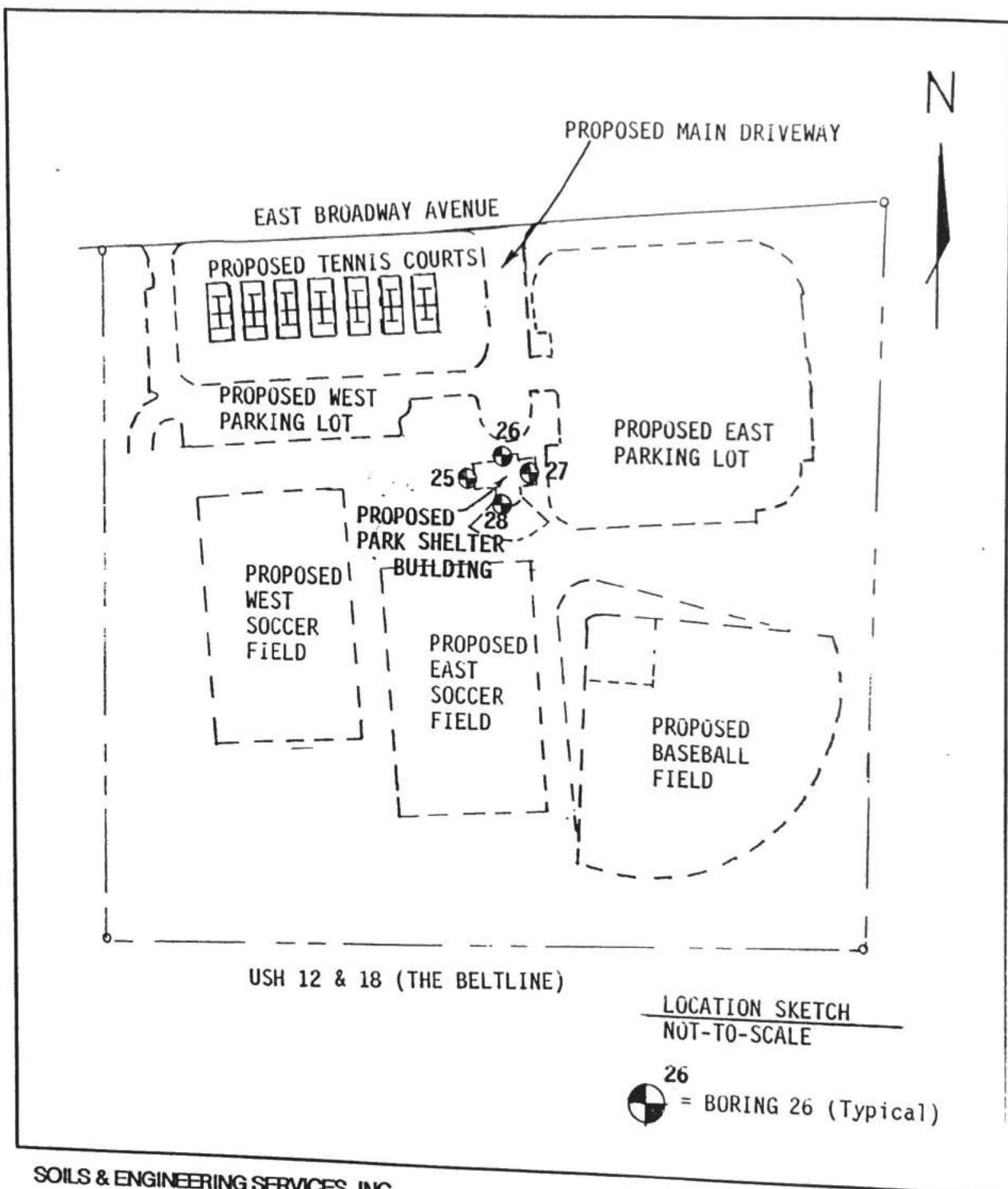
of Roger Jones per 2-93 INSPECTIONS. Roger Jones was a driver & tractor operator during entire fill operation.

"Fill 5'-6' feet deep tapered along edges of fill... used busted lumber & concrete from UW Housky as base beneath garbage..."

BOSOLD PROPERTY SKETCH
as base beneath garbage...

- ROSOLAWN CEMETARY -





SOILS & ENGINEERING SERVICES, INC.
MADISON, WISCONSIN



SOIL BORING LOCATION

Ahuska Park
East Broadway
Monona, Wisconsin

DRAWING 11763-1

NOTES

1. The soil sampling for the borings was performed in accordance with ASTM Designation D 1586.
2. The number of blows required to drive a 2-inch-outside-diameter, split-barrel sampler 12 inches, or fraction thereof when so noted, with a 140-pound hammer falling 30 inches is recorded in the "N-Value" column at the approximate middle elevation of the sample. This number of blows is the "standard penetration resistance" as defined in ASTM Designation D 1586.
3. Boreholes that intersect the groundwater table, or are greater than 10 feet in depth, were backfilled with bentonite after determining the depth to water. Boreholes less than or equal to 10 feet in depth were backfilled with auger cuttings after determining the depth to water.
4. The boundary lines between different soil strata, as shown on the Soil Boring Records, are approximate and may be gradual. The recovered soils were visually identified in accordance with the Unified Soil Classification System (USCS) as defined in ASTM Designation D 2487. The drillers' field log contains a description of the soil conditions between samples based on the equipment performance and the soil cuttings. The Soil Boring Records contains the description of the soil conditions as interpreted by a geotechnical engineer and/or a geologist after review of the drillers' field logs and soil samples and/or laboratory test results.
5. The Soil Boring Records are a part of the geotechnical report. The geotechnical report should be included in the bidding or reference documents.

N-VALUE LEGEND

PS = Pushed Stone


TEST RESULTS LEGEND

q_p = Penetrometer reading, ton/ft ²	LL = Liquid limit, % moisture by weight
NM = Natural moisture, % moisture by weight	PL = Plastic limit, % moisture by weight
q_u = Unconfined compressive strength, ton/ft ²	P_{200} = % passing the No. 200-mesh sieve
LI = Loss on ignition, % organic content by weight	

REMARKS LEGEND

NR = No Recovery	PR = Poor Recovery
Dry = Dry relative moisture condition	W-S = Wet to Saturated relative moisture condition
D = Damp relative moisture condition	TO = Topsoil/Organic Odor
M = Moist relative moisture condition	PO = Petroleum-like Odor
W = Wet relative moisture condition	
S = Saturated relative moisture condition	
UO = Unknown Odor	
NO = No Noticeable Odor	
PID = Photoionization detector reading, equivalent units of isobutylene calibration gas	

SAMPLER TYPE LEGEND

 2-inch-outside-diameter, split-barrel sampler

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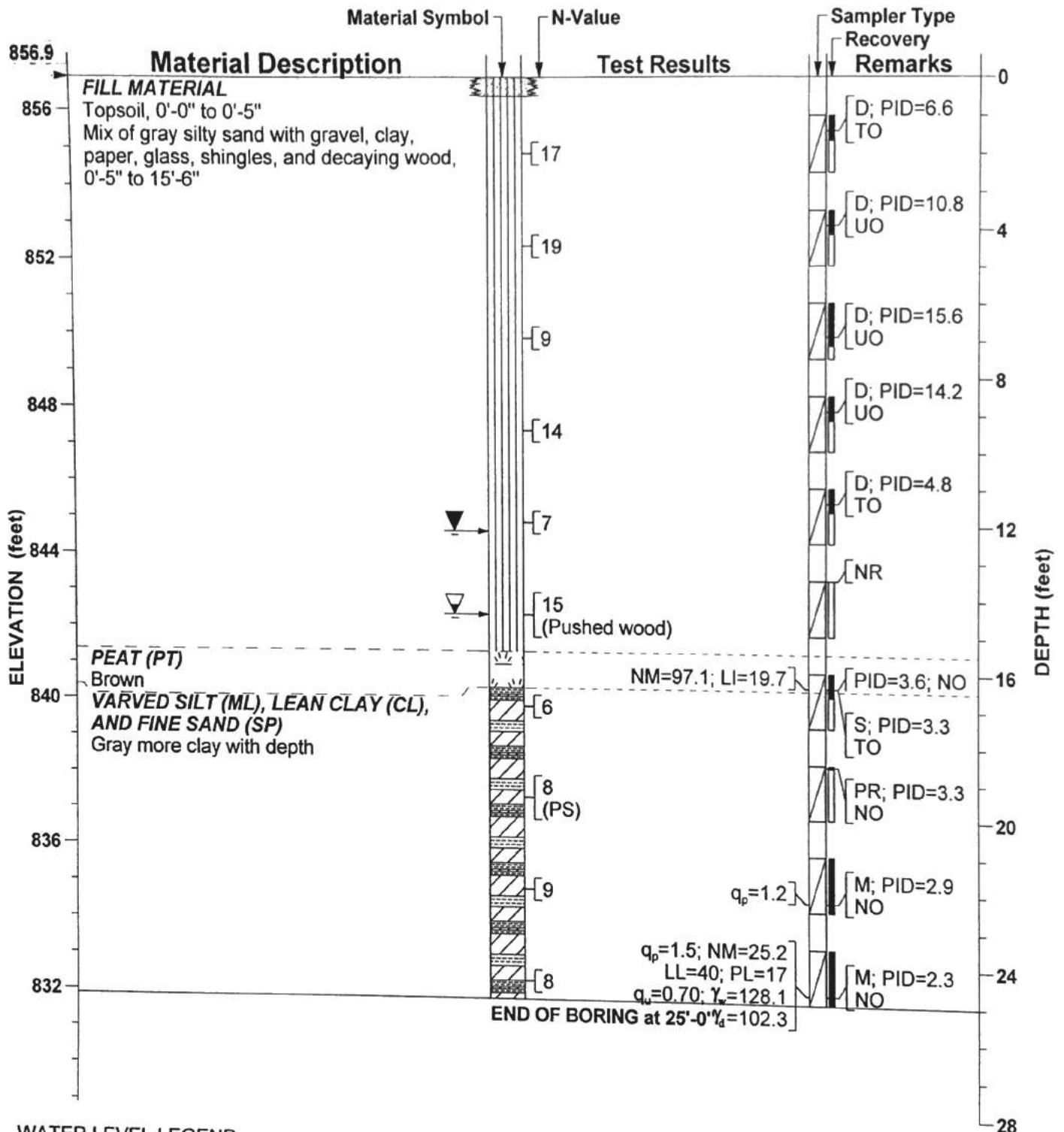
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NOTES AND LEGEND

Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-2



WATER LEVEL LEGEND

- ▼ 12'-3" at 10 days
- ▼ 14'-6" at completion

OTHER LEVEL LEGEND

- ☼ Frozen, 0'-0" to 0'-6"

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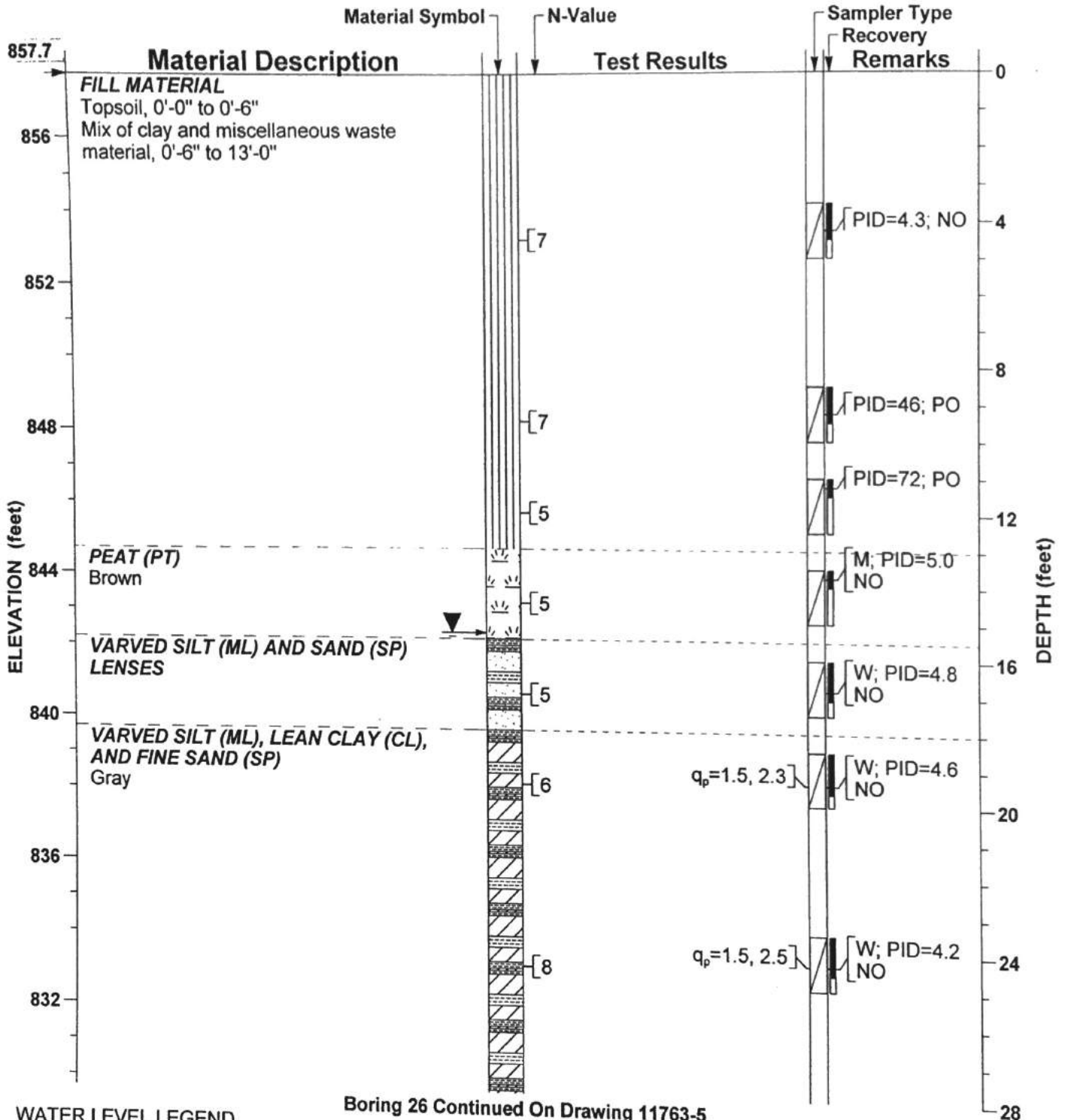
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For Notes And Legend, see Drawing 11763-2.

SOIL BORING RECORD
Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-3



WATER LEVEL LEGEND

▼ 15'-4" at completion

Boring 26 Continued On Drawing 11763-5

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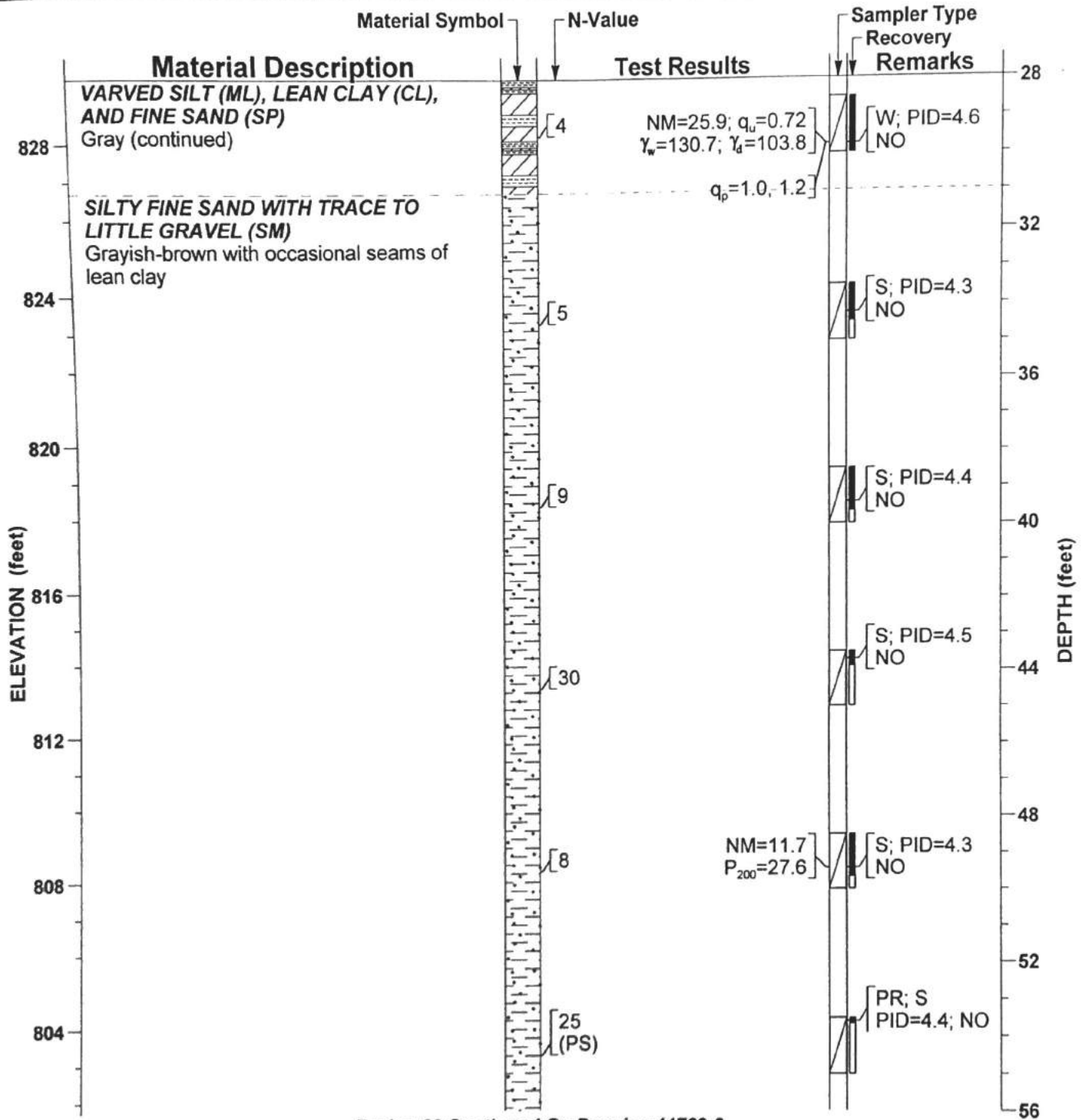
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For Notes And Legend, see Drawing 11763-2.

SOIL BORING RECORD
Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-4



Boring 26 Continued On Drawing 11763-6

For Notes And Legend, see Drawing 11763-2.

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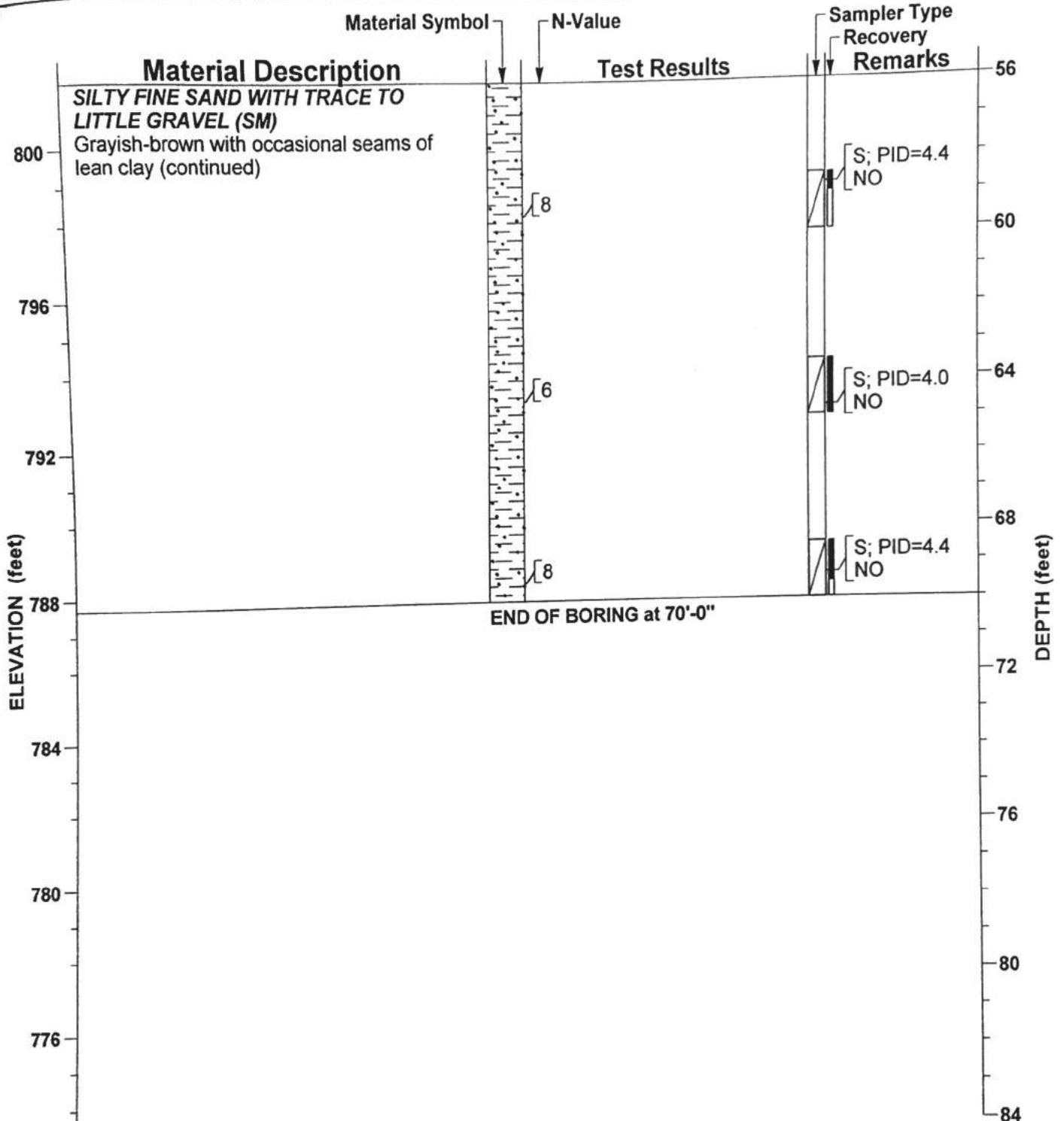
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SOIL BORING RECORD
Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-5



For Notes And Legend, see Drawing 11763-2.

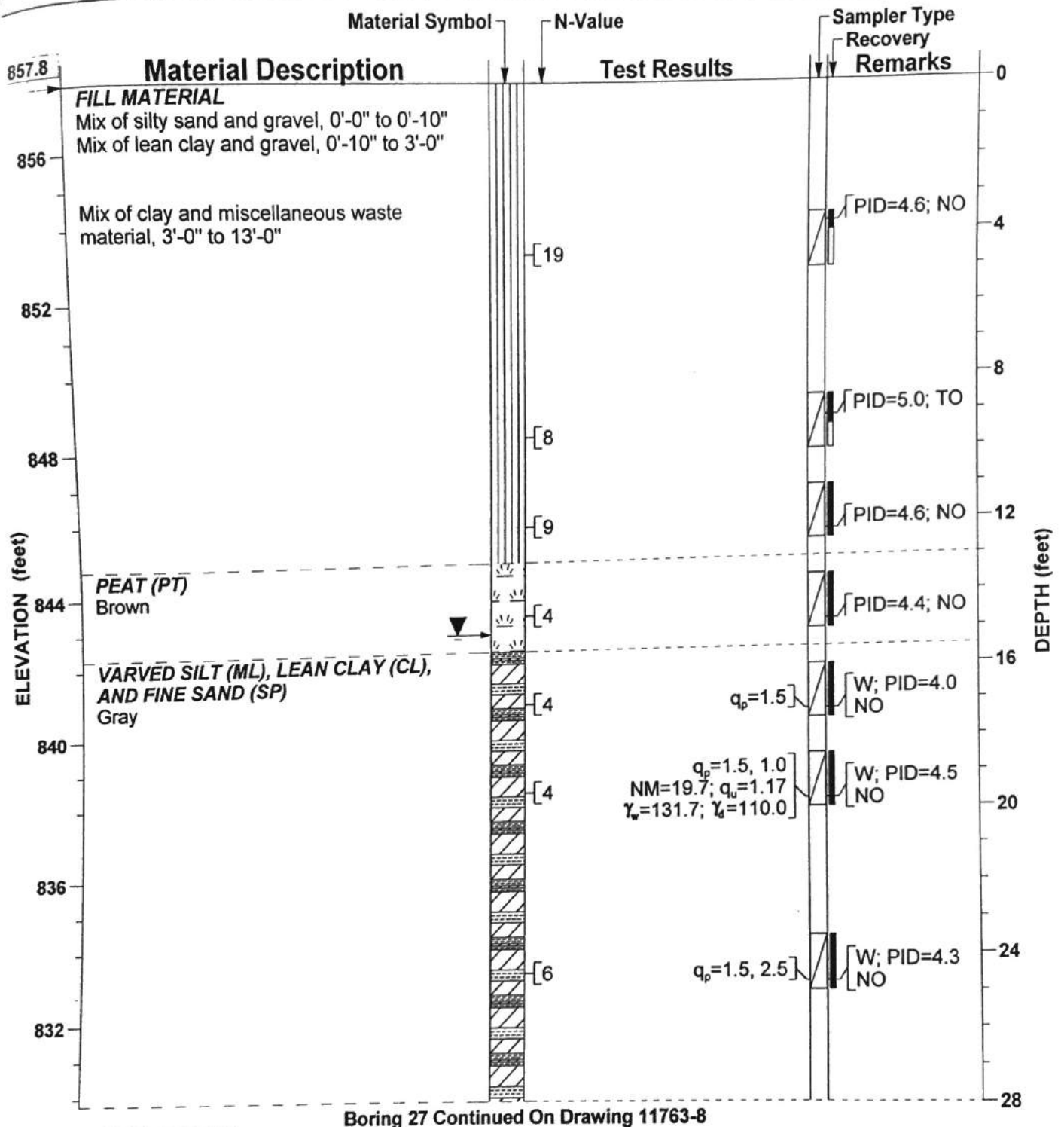
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SOIL BORING RECORD
 Proposed Park Shelter
 Ahuska Park
 Monona, Wisconsin



DRAWING
11763-6



Boring 27 Continued On Drawing 11763-8

WATER LEVEL LEGEND

▼ 15'-0" at completion

For Notes And Legend, see Drawing 11763-2.

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SOIL BORING RECORD

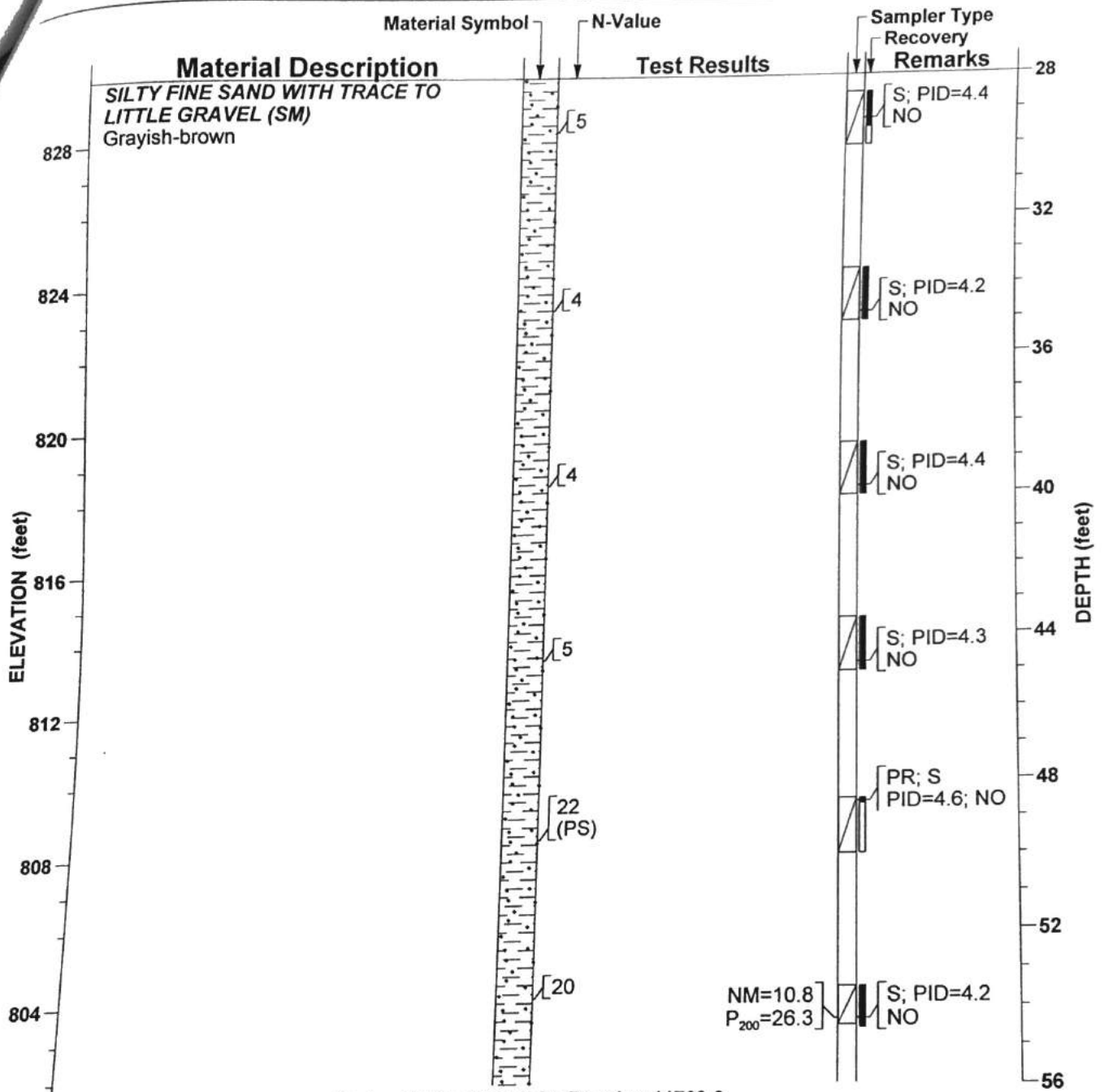
Proposed Park Shelter

Ahuska Park

Monona, Wisconsin



DRAWING
11763-7



Boring 27 Continued On Drawing 11763-9

For Notes And Legend, see Drawing 11763-2.

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SOIL BORING RECORD

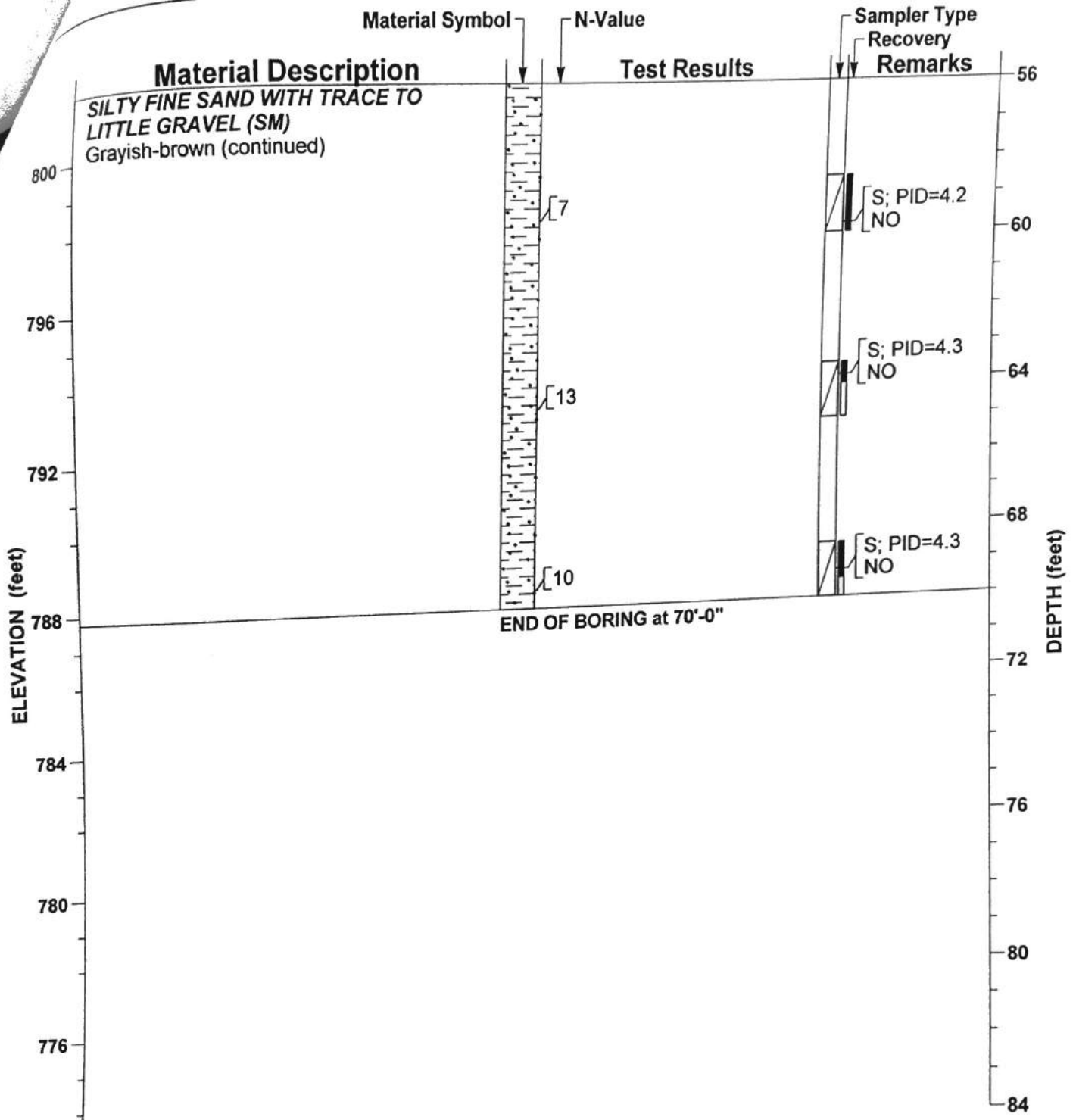
Proposed Park Shelter

Ahuska Park

Monona, Wisconsin



DRAWING
11763-8



For Notes And Legend, see Drawing 11763-2.

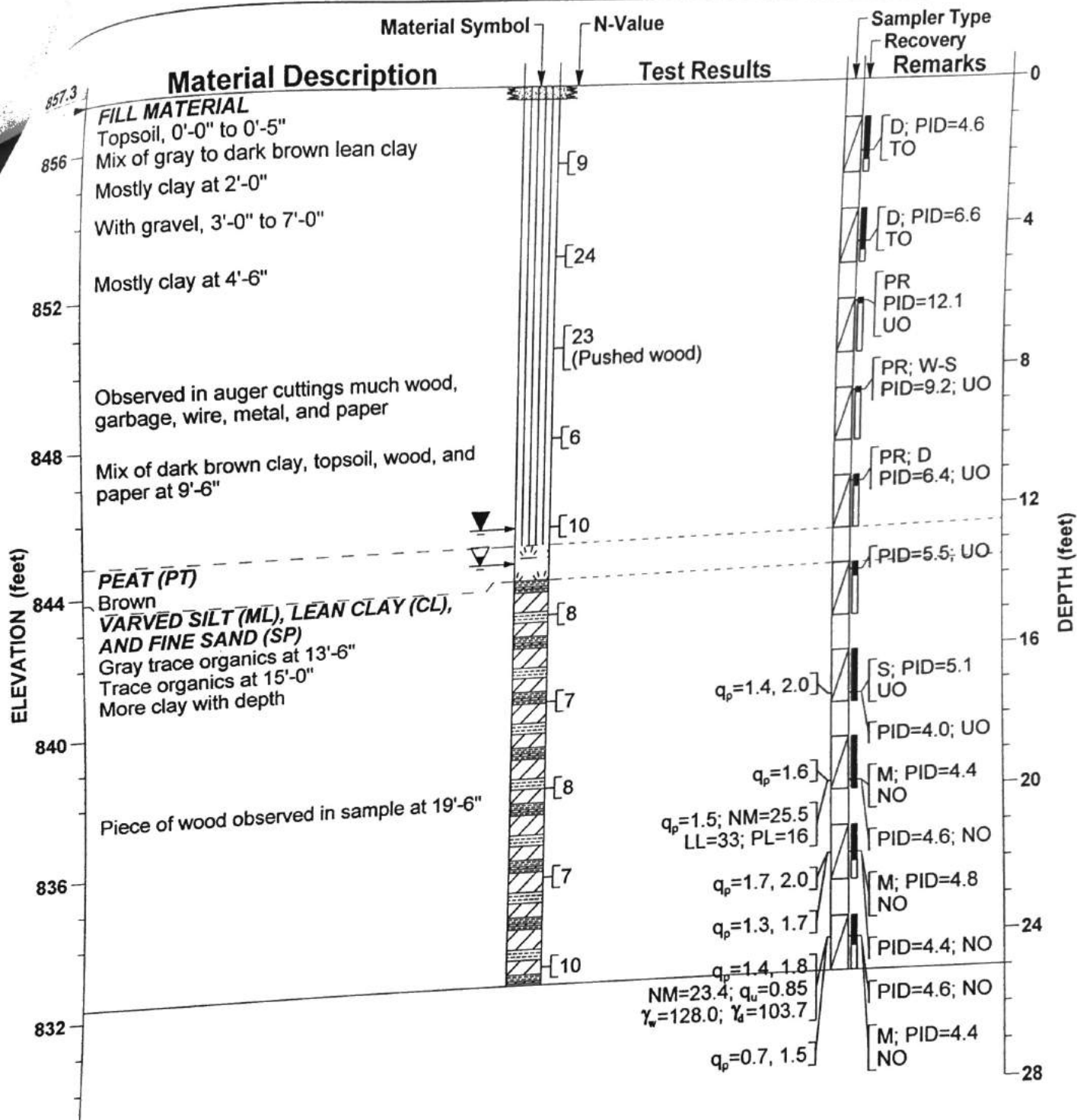
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SOIL BORING RECORD
Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-9



WATER LEVEL LEGEND

- ▼ 12'-0" at 10 days
- ▼ 13'-0" at completion

OTHER LEVEL LEGEND

- ☒ Frozen, 0'-0" to 0'-4"

For Notes And Legend, see Drawing 11763-2.

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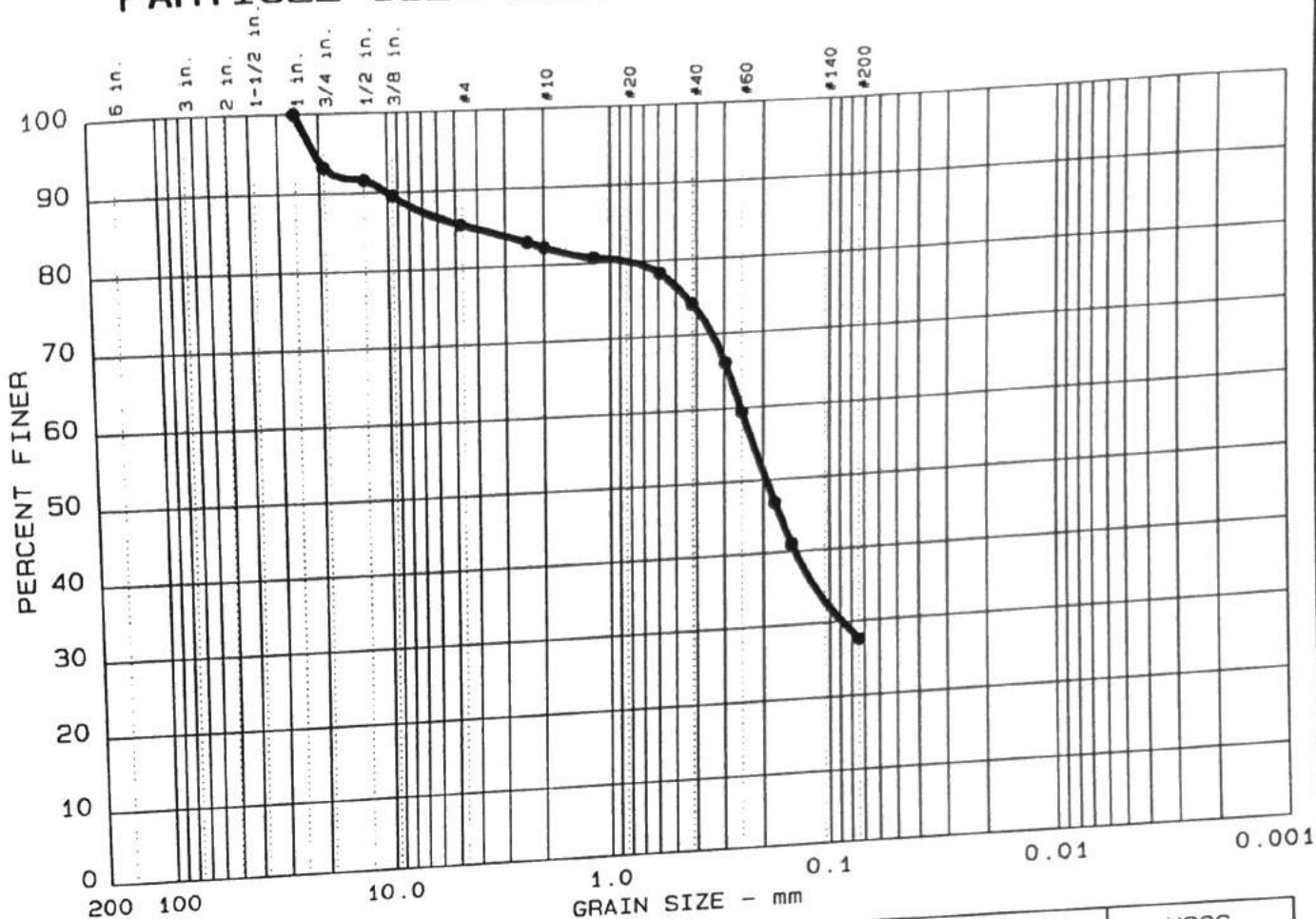
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SOIL BORING RECORD
Proposed Park Shelter
Ahuska Park
Monona, Wisconsin



DRAWING
11763-10

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS
0.0	14.4	58.0	27.6		SM

SIEVE inches size	PERCENT FINER
1	100.0
0.75	93.3
0.5	91.6
0.375	89.5
GRAIN SIZE	
D ₆₀	0.25
D ₃₀	0.09
D ₁₀	
COEFFICIENTS	
C _c	
C _u	

SIEVE number size	PERCENT FINER
4	85.6
8	83.0
10	82.3
16	80.7
30	78.2
40	74.0
50	66.1
60	59.4
80	46.9
100	41.1
200	27.6

Sample information:
 • Silty fine sand,
 little gravel
 Boring 26 49'6" Depth

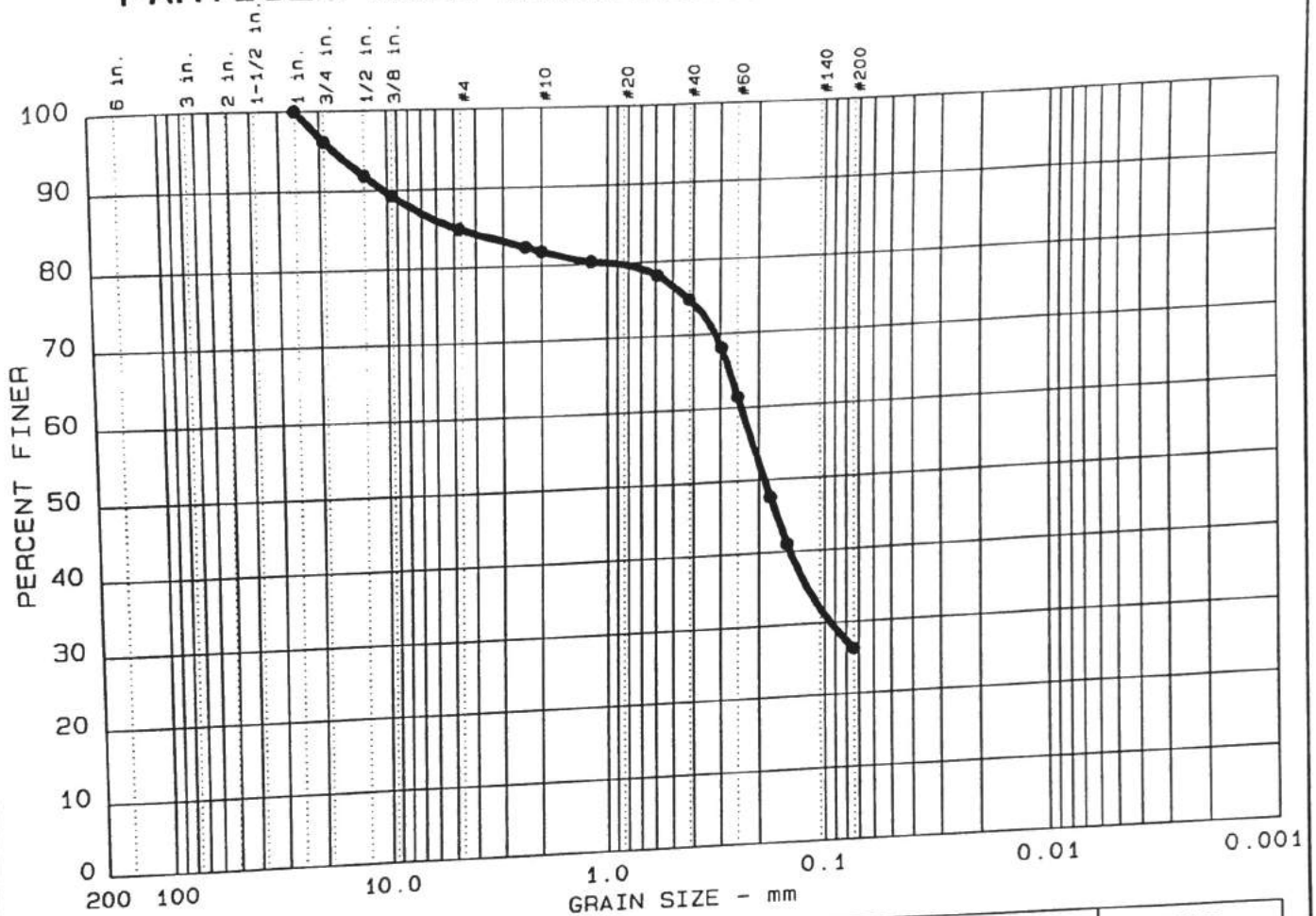
Remarks:

**SOILS & ENGINEERING
SERVICES, INC.**

Project No.: 11763
 Project: Ahuska Park
 Date: March 13, 2000

Data Sheet No. 1

PARTICLE SIZE DISTRIBUTION TEST REPORT



% +3"	% GRAVEL	% SAND	% SILT	% CLAY	USCS
0.0	15.1	58.6	26.3		SM

SIEVE inches size	PERCENT FINER		
1	100.0		
0.75	96.1		
0.5	91.9		
0.375	89.3		
GRAIN SIZE			
D ₆₀	0.24		
D ₃₀	0.09		
D ₁₀			
COEFFICIENTS			
C _c			
C _u			

SIEVE number size	PERCENT FINER		
4	84.9		
8	82.4		
10	81.8		
16	80.3		
30	78.2		
40	74.8		
50	68.2		
60	61.5		
80	47.6		
100	41.1		
200	26.3		

Sample information:
 • Silty fine sand,
 little gravel
 Boring 27 54'6" Depth

Remarks:

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SERVICES, INC.**

Project No.: 11763
 Project: Ahuska Park
 Date: March 13, 2000

Data Sheet No. 2

ABOUT THE UNIVERCITY YEAR

UniverCity Year is a year-long partnership between UW-Madison and one community in Wisconsin. The community partner identifies sustainability and livability projects that would benefit from UW-Madison expertise. Faculty from across the university incorporate these projects into their courses with graduate students and upper-level undergraduate students. UniverCity Year staff provide administrative support to faculty, students and the partner community to ensure the collaboration's success. The result is on-the-ground impact and momentum for a community working toward a more sustainable and livable future.

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