

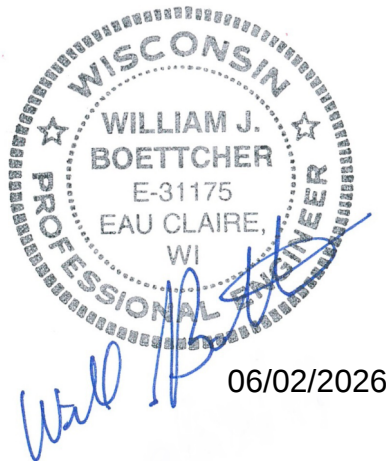
**VAULT TOILET REPLACEMENTS – NORTHWEST DISTRICT
COPPER FALLS STATE PARK AND FLAMBEAU RIVER STATE FOREST
DEPARTMENT OF NATURAL RESOURCES
ASHLAND COUNTY AND SAWYER COUNTY, WISCONSIN**

**TECHNICAL SPECIFICATIONS VOLUME 2 of 2
BID DOCUMENT**

Division Project No. **25D31**

June 2, 2026

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
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30	***	

SECTION 02 05 00
COMMON WORK RESULTS FOR EXISTING CONDITIONS
BASED ON DFD MASTER SPECIFICATION DATED 6/24/2025

PART 1 - GENERAL

SCOPE

This Section provides information common to two or more technical specification sections or items that are of a general nature and not included in other sections. This section applies to ALL site work, as applicable. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Sections
- Referenced Organizations
- Referenced Documents
- Safety
- Permits
- Construction Limits
- Provisions for Future Work
- Off-Site Storage
- Certificates and Inspections

PART 2 - MATERIALS

- Barricades, Signs, and Warning Devices
- Temporary Plastic Barrier Fencing

PART 3 - EXECUTION

- Maintenance of Site and Building Access/Egress
- Continuity of Existing Traffic/Parking and Traffic Control
- Protection and Continuity of Existing Utilities
- Protection of Existing Work and Facilities
- Stormwater/Excavation Water Management

RELATED SECTIONS

Applicable provisions of Division 01, General Conditions of the General Prime Contractor Contract, and the Supplementary General Conditions shall govern work under this Section.
02 41 13 – Demolition

REFERENCED ORGANIZATIONS

Abbreviations of organizations referenced in these specifications are as follows:

AASHTO	American Association of State Highway and Transportation Officials
ACPA	American Concrete Pipe Association
ANSI	American National Standards Institute
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWWA	American Water Works Association
AWS	American Welding Society
FHA	Federal Highway Administration
EPA	Environmental Protection Agency
NEC	National Electric Code
NEMA	National Electrical Manufacturers Association
NFPA	National Fire Protection Association
NSF	National Sanitation Foundation
OSHA	Occupational Safety and Health Administration

1	STI	Steel Tank Institute
2	UL	Underwriters Laboratories Inc.
3	WDNR	State of Wisconsin Department of Natural Resources
4	WISDOT	State of Wisconsin Department of Transportation

5

6 REFERENCED DOCUMENTS

7 **SSHSC** - Where reference is made to the SSHSC, it shall mean the pertinent sections of the State of
8 Wisconsin Department of Transportation, Standard Specifications for Highway and Structure Construction,
9 current edition, and all supplemental and interim supplemental specifications.

10 **SSSWC** - Where reference is made to the SSSWC, it shall mean pertinent sections of the Standard
11 Specifications for Sewer and Water Construction in Wisconsin, current edition.

12 **BMPH** - Where reference is made to the BMPH, it shall mean the Wisconsin Construction Site Best
13 Management Practice Handbook, current edition as published by the WDNR. Method of measurement and
14 basis of payment sections in referenced documents shall not apply.

15

16 SAFETY

17 Contractor is responsible for worksite safety.

18

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

20

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

23

24 PERMITS

25 Unless otherwise noted in the Contract Documents, Contractor shall be responsible for obtaining and paying
26 for all permits necessary to complete the work. Refer to Section 01 41 26.

27

28 CONSTRUCTION LIMITS

29 Construction limits are indicated on the drawings. In the absence of such a designation on the drawings,
30 confine work to the minimum area reasonably necessary to undertake the work as determined by the DFD
31 Project Representative. If construction activities extend beyond state property lines or construction
32 easements, obtain all necessary approvals and permits from applicable municipalities.

33

34 The Contractor shall restore all disturbed areas in accordance with the drawings and specifications. If plans
35 and specifications do not address restoration of specific areas, these areas will be restored to pre-
36 construction conditions.

37

38 PROVISIONS FOR FUTURE WORK

39 None

40

41 OFF SITE STORAGE

42 In general, the payments for materials stored off site will only be considered in instances where there is
43 limited space available for storage on the site. Prior approval by the DFD Project Representative, together
44 with the execution of an "Off-site Storage Agreement" will be required.

45

46 CERTIFICATIONS AND INSPECTIONS

47 Obtain and pay for all required sampling, testing, inspections, and certifications except those expressly
48 listed as provided by the A/E or other third party in the Contract Documents. The Contractor shall upload
49 documents to the State's Project Management Information Software system (PMIS) within 3 business days
50 of said work. Include copies of the certifications and documents in the O&M Manual.

PART 2 - MATERIALS

BARRICADES, SIGNS, AND WARNING DEVICES

Traffic barricades, traffic signs, and warning devices shall meet the requirements of applicable OSHA standards and the FHA Manual of Uniform Traffic Control Devices (MUTCD).

TEMPORARY BARRIER FENCING

Provide temporary barrier fencing as needed to perform all work in accordance with applicable OSHA standards, regulations, and the quality control plan.

Refer to and coordinate with Article 18 FENCE General Requirements. Article 18 defines the requirements for a protective fence needed for this project.

PART 3 - EXECUTION

MAINTENANCE OF SITE AND BUILDING ACCESS/EGRESS

Unless otherwise shown or directed, maintain existing access and egress to the facility throughout construction. Maintain ANSI A117 compliant access for disabled persons, access and egress as indicated. Do not interrupt access and egress without prior written approval from the DFD Project Representative.

Provide specified barrier fencing, barricades, signage, and warning lights around all construction, staging, swing path of lift(s) and storage areas.

CONTINUITY OF EXISTING TRAFFIC/PARKING AND TRAFFIC CONTROL

Do not interrupt or change existing traffic, delivery, or parking without prior written approval from the DFD Project Representative. When interruption is required, coordinate schedule with the user/ Agency to minimize disruptions. When working in public right-of-way, obtain all necessary approvals and permits from applicable municipalities and WISDOT.

When Contractor's activities impede or obstruct traffic flow, Contractor shall provide traffic control devices, signs and flaggers in accordance with other Contract Documents and the current version of the MUTCD, or as shown on the Drawings.

PROTECTION AND CONTINUITY OF EXISTING UTILITIES

Verify the locations of any water, drainage, gas, sewer, electric, drainage, gas, sewer, electric, telephone/communication, fuel, steam lines or other utilities and site features which may be encountered in any excavations or other sitework. All lines shall be properly underpinned and supported to avoid disruption of service.

Do not interrupt or change existing utilities without prior written approval from the DFD Project Representative, affected utilities and users. Notify all users impacted by outages a minimum of 48 hours in advance of outage. Notification shall be provided in writing and describe the nature and duration of outages and provide the name and number of Contractor's foreman or other contact.

PROTECTION OF EXISTING WORK AND FACILITIES

Verify the locations of, and protect, any signs, paved surfaces, buildings, structures, landscaping, streetlights, utilities, and all other such facilities that may be encountered or interfered with during the progress of the work. Take measures necessary to safeguard all existing work and facilities that are outside the limits of the work or items that are within the construction limits but are intended to remain. Report any damage to existing facilities to the DFD Project Representative immediately.

STORMWATER/EXCAVATION WATER MANAGEMENT

Control grading around structures, pitch ground to prevent water running into excavated areas.

- 1 Pits, trenches within building lines and other excavations shall be maintained free of water.
2
3 Provide trenching, pumping, other facilities required.
4
5 Notify Architect/Engineer if springs or running water are encountered in excavation; provide discharge by
6 trenches, drains, pumping to point outside of excavation. Provide information to Architect/Engineer of
7 points and areas where water will be discharged. At the Engineer's option, the Contractor shall drain the
8 spring to the storm sewer system by the use of field tile.
9
10 Be responsible for control measures to prevent damage from flooding, erosion, and sedimentation to on-site
11 and off-site areas.
12

13 **END OF SECTION**

SECTION 02 41 13
DEMOLITION
BASED ON DFD MASTER SPECIFICATION DATED 5/20/2025

PART 1 - GENERAL

SCOPE

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

PART 1 - GENERAL

- Scope
- Related Work
- Submittals
- Record Drawings
- Safety
- Permits
- Disconnection of Services
- Provisions for Future Work
- Removal/Salvaging of Items
- Owner Salvaged or Removed Materials

PART 2 - MATERIALS

- Equipment

PART 3 - EXECUTION

- Protection of Existing Work and Facilities
- Demolition
- Building Demolition
- Demolition below Grade
- Demolition Backfill
- Drain Tile
- Transportation and Disposal of Demolition Waste

RELATED WORK

Applicable provisions of the General Conditions and Division 01 shall govern work under this section.

- Section 02 05 00 – Common Work Results for Existing Conditions
- Section 30 05 00 – Common Work Results for all Exterior Work
- Section 31 25 00 – Erosion Control

SUBMITTALS

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

Submit record drawings.

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

RECORD DRAWINGS

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

SAFETY

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

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

4
5 Maintain a clean and orderly site. Remove debris at end of each workday.

6 7 **PERMITS**

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

10
11 If necessary, file and maintain a copy of the Notification of Demolition and/or Renovation and Application
12 for Permit Exemption (WDNR Form 4500-113) in accordance with the Wisconsin Administrative Code
13 Chapter NR447. Any complete structure demolition or removal of load-bearing components will require
14 filing.

15 16 **DISCONNECTION OF SERVICES**

17 Prior to starting removal and/or demolition operations, Contractor is responsible for and shall coordinate
18 disconnection of all existing utilities, communication systems, alarm systems and other services.

19
20 Disconnect all services in a manner which ensures continued operation in any facilities not scheduled for
21 demolition.

22
23 Disconnect all services in a manner which allows for future connection to that service where applicable.

24
25 Disconnect services to equipment at unions, flanges, valves, or fittings wherever possible.

26 27 **PROVISIONS FOR FUTURE WORK**

28 None

29 30 **REMOVAL/SALVAGING OF ITEMS**

31 Carefully remove all items that are scheduled to be salvaged.

32
33 Secure salvaged items to allow for future movement; provide pallets, skids and other devices as necessary.
34 Secure all loose parts.

35
36 Provide crates, padding, tarps and other measures necessary to protect salvaged items during storage. Store
37 items in a secure location, safe from vandalism, weather, dust and other adverse elements.

38
39 Where salvaged items are indicated to be turned over to Owner, deliver to location on property where
40 designated by Owner.

41
42 Where indicated to be incorporated into new work, store the salvaged item in a secure location until the
43 trade responsible for re-installation mobilizes equipment and/or storage facilities to the site, or otherwise
44 accepts responsibility for the salvaged item.

45 46 **OWNER SALVAGED OR REMOVED MATERIALS**

47 None

48 49 **PART 2 - MATERIALS**

50 51 **EQUIPMENT**

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

1
2
3 **PART 3 - EXECUTION**

4 **PROTECTION OF EXISTING WORK AND FACILITIES**

5 Take all measures necessary to safeguard all existing features and facilities which are outside the limits of
6 the work.

7 Furnish and install fencing or other barriers as shown on the drawings or as otherwise necessary to protect
8 existing features.
9

10 Verify the locations of, and protect, any buildings, structures, utilities, paved surfaces, signs, streetlights,
11 utilities, landscaping and all other such facilities that are intended to remain or be salvaged.
12

13 Make such explorations and probes as necessary to ascertain any required protection measures that shall be
14 used before proceeding with demolition.
15

16 Provide and maintain adequate catch platforms, warning lights, barricades, guards, weather protection, dust
17 protection, fences, planking, bracing, shoring, piling, signs, and other items required for proper protection.
18

19 Provide protection for workmen, public, adjacent construction and occupants of existing building(s).
20

21 Report damage of any facilities or items scheduled for salvaging to the DFD Construction Representative.
22

23 Explosives shall not be used for demolition.
24

25 Keep streets, walks and all other adjacent paved areas clean and swept clear of dirt, mud and debris
26 deposited as a result of this operation.
27

28 Protect surrounding area from dust. Control rodents, and other vermin associated with demolition
29 operations.
30

31 **DEMOLITION**

32 Remove all equipment, fixtures and other materials scheduled for salvage prior to beginning demolition
33 operations.
34

35 Demolish and remove all buildings and structures scheduled for demolition as shown on the drawings.
36

37 Abandon gas, electric and communication utilities in accordance with local utility company requirements,
38 or applicable substantive requirements if considered private.
39

40 Carry out vehicle loading as necessary within the project boundaries or as defined or indicated on the
41 drawings, but not in locations that block vehicular traffic on the streets or pedestrian traffic on adjacent
42 public walks.
43

44 Dismantle each structure in an orderly manner to provide complete stability of the structure at all times.
45 Provide bracing and shoring where necessary to avoid premature collapse of structure.
46

47 Conduct demolition operations and the removal of rubbish and debris in such a way that a minimum of
48 nuisance dust is caused. Constantly sprinkle rubbish and debris with water if necessary to keep nuisance
49 dust to a minimum.
50

51 Where necessary to prevent collapse of any construction, install temporary shores, underpinning, struts or
52 bracing. Do not commence demolition work until all temporary construction is complete.
53

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

Masonry and concrete shall be demolished in small sections. Use braces and shores as necessary to support the integrity of the building or structure and protect it from damage. Where limits of demolition are exposed in the finished work, cutting shall be made with saws, providing an absolutely straight line, plumb, true and square.

BUILDING DEMOLITION

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

Neatly saw or cut joints at the limits of removal; whenever possible, locate cuts at existing joints.

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

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

Remove structural framing members and lower to ground by hoists, derricks or other suitable means.

Remove all existing flooring in accordance with drawings. Leave exposed existing sub-flooring or surface in suitable condition to receive new finished flooring.

Locate demolition equipment and remove structure in a manner which avoids excessive loads to supporting walls, floors or framing.

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

DEMOLITION BELOW GRADE

Demolish foundation walls and other below grade features in accordance with the drawings. Unless otherwise noted, remove all below grade features to a point 4' below adjoining existing grade, or proposed grade, whichever is lower. Basement and/or lowest level floors more than 4' below existing grade need not be removed, but must be fractured to permit drainage. Any features abandoned 4' and below must be documented and approved by the A/E and DFD Construction Representative.

DEMOLITION BACKFILL

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

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

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

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

TRANSPORTATION AND DISPOSAL OF DEMOLITION WASTE

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

Recycle demolition waste whenever possible, or as otherwise required by the Contract Documents.

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

3

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

6

7

END OF SECTION

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SECTION 03 08 00
COMMISSIONING OF CONCRETE
BASED ON DFD MASTER SPECIFICATION DATED 05/01/2025

PART 1 - GENERAL

SCOPE

This section includes commissioning forms for construction verification and functional performance testing. Included are the following topics:

PART 1 - GENERAL

Scope

Related Work

Reference

Submittals

PART 2 - PRODUCTS

(Not Used)

PART 3 - EXECUTION

Commissioning Forms

CV-03 30 10 Cast in Place Concrete for Site Work

RELATED WORK

Section 01 91 01 – Commissioning Process

REFERENCE

Applicable provisions of Division 1 shall govern work under this section.

SUBMITTALS

Reference the General Conditions of the Contract for submittal requirements.

Reference Section 01 91 01 - Commissioning Process for Construction Verification Checklist and Functional Performance Test submittal requirements.

PART 2 – PRODUCTS

(Not Used)

PART 3 – EXECUTION

COMMISSIONING FORMS

Commissioning forms are to be filled in as work progresses by the individuals responsible for installation and shall be completed for each installation phase.

Provide a description of the work completed since the last entry, the percentage of the total work completed for the system for that area and the step of installation or finalization.

Circle Yes or No for each commissioning form item. If the information requested for an item does not apply to the given stage of installation for the system, list it as "N/A". Explain all discrepancies, negative responses or N/A responses in the negative responses section.

Once the work is 100% complete and the responses to each item are complete and resolved for a given commissioning forms group, mark as complete, initial and date in the spaces provided.

Provide copies of the commissioning forms to the commissioning agent 2 days prior to construction progress meetings.

Construction Verification Checklist
03 30 10 - Cast in Place Concrete for Site Work

CV-03 30 10 – Cast in Place Concrete for Site Work

Identification/Tag: _____

Location: _____

A) PRE-POURING CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)	
				1)	2)
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
				YES NO	YES NO
☐ CHECKLIST GROUP COMPLETE				INITIALS: _____	
				DATE: _____	

Question Details

- 1) Shop drawings, product data and samples have been submitted and approved.
- 2) All materials are as designed, specified, and approved.

Construction Verification Checklist
03 30 10 - Cast in Place Concrete for Site Work

Negative Responses

Group/ Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Construction Verification Checklist
03 30 10 - Cast in Place Concrete for Site Work

B) POURING CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)									
				1)	2)	3)	4)	5)	6)	7)	8)	9)	10)
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO
☐ CHECKLIST GROUP COMPLETE				INITIALS:						DATE:			

Question Details

- 1) Reinforcement sized correctly, placed as designed and supported properly.
- 2) Forms are clean and are placed, plumb, true and square.
- 3) Forms are properly shored and braced and maintained in accordance with ACI 301 to support loads that might be applied until concrete structure can support such loads.
- 4) Anchor bolts and other embedded items are accurately located to elevations required.
- 5) Granular fill is of proper gradation and base is placed level, compacted and true.
- 6) Level of compaction is verified by a qualified testing agency and approved, if specified.
- 7) Concrete is placed in suitable weather and temperature conditions. If required, cold/hot weather placement requirements are performed in accordance with ACI.
- 8) Qualified testing agency has verified proper slump, air content, water cement ratio and air temperature is as specified at each frequency specified.
- 9) Compressive test cylinders were cast at time of placement and compressive strength testing by qualified testing agency has been performed, in the specified intervals and the compressive-strength test values are at or above those specified.
- 10) Construction joints are properly located and, for slabs on grade, contraction joints are installed or sawed in the appropriate time interval, in locations indicated at the proper width and depth.

Construction Verification Checklist
03 30 10 - Cast in Place Concrete for Site Work

Negative Responses

Group/ Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

Construction Verification Checklist
03 30 10 - Cast in Place Concrete for Site Work

C) POST POURING CHECKS

Date	Description of Work Performed	% Complete	Initials	Questions (See details below)		
				1)	2)	3)
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
				YES NO	YES NO	YES NO
☐ CHECKLIST GROUP COMPLETE				INITIALS:		DATE:

Question Details

- 1) Type of finish specified has been applied and approved by architect.
- 2) Curing measures were undertaken and the concrete is properly cured as specified.
- 3) Defective areas including but not limited to spalls, pop-outs, honeycombs, rock pockets and cracks are properly repaired and patched.

Negative Responses

Group/ Item	Date Found	Found By	Location	Reason for Negative Response	Resolved	Date Resolved	Resolution
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		
					YES / NO		

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SCOPE

PART 1 GENERAL

PART 2 PRODUCTS

PART 3 EXECUTION

RELATED WORK

03 30 00 – Cast-In-Place Concrete
03 08 00 – Commissioning of Concrete
30 05 00 – Common Work Results for All Exterior Work
32 11 23.33 – Dense Graded Base

Incorporated Guides and References

DFD Project No. 25D3I
03 30 10 - 1

SUBMITTALS

Mix Design: Submit mix design for review at least ten days prior to use. Mix design shall be derived from tests performed by a qualified testing laboratory or from previous tests performed on aggregate from same source.

Product Data: Submit product data for joint fillers, curing compound, admixtures, reinforcing, and all other concrete components.

Delivery Tickets: Submit delivery tickets to DFD Construction Representative for each load of concrete delivered to project.

Test Reports: Submit reports for laboratory and field tests required under "Testing" article.

Joint Layout Plan: Submit a joint layout plan for approval prior to starting work.

Make submittals in accordance with Division 01.

QUALITY ASSURANCE

Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.

Manufacturer certified according to National Ready Mixed Concrete Association's "Certification of Ready Mixed Concrete Production Facilities."

Testing Agency Qualifications: An independent agency qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.

Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.

Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

TESTING

Contractor shall arrange and pay for concrete testing by a qualified testing agency, acceptable to State and independent of Contractor.

Testing agency shall test concrete to measure slump, entrained-air content, temperature, and compressive strength to determine compliance with specifications. Furnish test apparatus and cylinders, perform on-site sampling and testing, and have compressive strength cylinders tested by a qualified laboratory.

- On-site tests shall be performed under observation of A/E unless waived.
- Perform slump, air content, and temperature tests prior to concrete placement each day, whenever there is a change in consistency of concrete, and when concrete cylinders are prepared. If measured slump, air content, or temperature falls outside specified limits, immediately check another portion of same batch. In event of a second failure, concrete shall be rejected.
- During progress of work, prepare three test cylinders per 100 cu yd fraction thereof for each class of concrete placed each day. Identify samples, moist cure in accordance with ASTM C31, and ship samples to testing laboratory for one 7-day compressive strength test and two 28-day tests.
- Test procedures shall be in accordance with ASTM C31, C39, C143, C172, C231, and C1064.
- Cost of tests, including materials and transportation, shall be paid by Contractor and shall be considered incidental to the various items of concrete work.

The Quality Management Program (QMP) provisions of the referenced WisDOT SSHSC sections do not apply to this concrete work.

MOCK-UP

Not applicable to this project

NOTIFICATION

Notify DFD and AE 48 hr. prior to placing any concrete.

PART 2 PRODUCTS

CONCRETE

Concrete shall be normal weight, in accordance with WisDOT SSHSC, Section 501, or grade A, air entrained concrete.

CLASS	Min. Comp. Strength, PSI	Slump, In.	Min. Cement. Lbs/ Cu Yd	Max. Water- Cement Ratio	Air Content, % By Volume	Use
A	4,000 (28-day)	1-4, 2 ½ for slip form	565	0.45	7% ±1	Pavements, curbs, sidewalks, slabs, pole bases, manhole benches

Use epoxy coated rebar unless otherwise specified.

COLORED CONCRETE

Not applicable to this project.

REINFORCEMENT

Concrete Cover on all reinforcing shall be 3" unless otherwise noted.

Reinforcing Bars: ASTM A615/A615M, A616, or A617; Grade 60, deformed. Minimum yield stress (FY) of 60,000 PSI. Minimum lap for splices shall be 3'-6".

Dowel Bars: ASTM A615, Grade 60, plain steel bars, epoxy-coated in accordance with ASTM A775.

Plain-Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, plain, fabricated from as-drawn steel wire into flat sheets.

FORMS

Forms may be either stationary or slip-form type. If slip forms are used, finished product shall be of quality equal to that produced by stationary forms.

Provide forms of steel, wood, or other suitable material of size and strength to resist movement during concrete placement and to retain horizontal and vertical alignment until removal. Use straight forms, free of distortion and defects, extending full depth of concrete.

Use flexible spring steel forms or laminated boards to form radius bends as required.

Coat forms with a form release agent which will not discolor or deface surface of concrete.

EXPANSION JOINT FILLER

Expansion joint filler meeting requirements of WisDOT SSHSC, Subsection 415.2.

CURING COMPOUND

Curing compounds and curing agents meeting requirements of WisDOT SSHSC, Subsection 415.2.

ADMIXTURES

Admixtures to be used in the concrete mixture shall be submitted for approval as part of the mixture design. No other admixtures will be allowed except those listed without the A/E's approval.

1 Air-Entraining Admixture: ASTM C 260/C 260M.

2
3 Water reducing admixture shall conform to ASTM C494, Class A.

4
5 Chloride Based Admixtures are prohibited in all reinforced concrete. Other admixtures shall conform to ASTM
6 C494.

7
8 Other admixtures which do not adversely affect strength and durability of concrete may be used with permission
9 of A/E, if used in strict accordance with manufacturer's instructions. Care shall be exercised to ensure that the
10 admixture does not increase or decrease air content outside of allowable limits. Do not use salt or chemical anti-
11 freeze admixtures.

12 13 **PART 3 EXECUTION**

14 15 **PREPARATION FOR CONCRETE**

16 Remove loose material from compacted subgrade. Proof-roll subgrade; give notice of unstable areas. Moisten
17 subgrade to provide a uniformly damp condition.

18
19 Set clean forms to required grades and lines, rigidly braced and secured. Provide minimum concrete thicknesses
20 as indicated on Drawings.

21
22 Check tolerances as follows (slip form methods shall produce equivalent results):

- 23 • Top of form: 1/8 in. in 10 ft.
- 24 • Alignment of vertical face: 1/4 in. in 10 ft.

25
26 Adjust manholes and utility structures to grade.

27 28 **JOINTS**

29 General: Form construction, expansion, and contraction joints and tool edges true to line, with faces
30 perpendicular to surface plane of concrete. Construct transverse joints at right angles to centerline unless
31 otherwise indicated.

- 32
33 • When abutting existing paving, place transverse joints to align with previously placed joints unless
34 otherwise indicated.

35
36 Joint Layout: Provide a joint layout plan for approval by the AE.

37
38 Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving
39 operations are stopped for more than one-half hour unless paving terminates at expansion joints.

- 40
41 • Provide tie bars at sides of paving strips where indicated.
- 42 • Drill and epoxy tie bars where new concrete abuts existing concrete, as shown. If not shown, then
43 provide two tie bars for curb and gutter and provide tie bars at 24" on center at other locations. Tie
44 bars must be minimum of 18" with 6" embedment unless otherwise shown. Tie bars shall be
45 minimum #4 size.
- 46 • Butt Joints: Provide butt joints for joints not subject to traffic. Use bonding agent at joint locations
47 where fresh concrete is placed against hardened or partially hardened concrete surfaces.
- 48 • Keyed Joints: Provide preformed keyway-section forms or bulkhead forms with keys for joints
49 subject to traffic, except where doweled joints are designated. Embed keys at least 1-1/2 in. into
50 concrete.

51
52 Expansion Joints: Form expansion joints of preformed joint-filler strips abutting concrete radius points, catch
53 basins, manholes, inlets, structures, existing concrete, other fixed objects, and where indicated.

- Locate additional expansion joints in curb and gutter at a maximum of 300 ft on center, unless otherwise indicated. Locate additional expansion joints in other concrete work at a maximum of 100 ft on center, unless otherwise indicated.
- Extend joint fillers full width and depth of joint.
- Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
- Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
- During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.

Contraction Joints: Form weakened-plane contraction joints, sectioning concrete into areas as indicated. Construct contraction joints for a depth equal to one-fourth to one-third of the concrete thickness by forming or sawing.

- Formed Joints: Form contraction joints by using parting strips or by grooving to depth shown on details, or herein.
- Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
- Locate joints in curbs and gutters at between 12 ft and 20 ft on center, unless otherwise shown. Joints in sidewalks shall be a distance equal to the sidewalk width, but no more than 7 ft on center.
- Locate joints in pavements as shown on the Drawings. Joints shall be continuous across slab, unless interrupted by an expansion joint. If not shown, then develop a joint layout plan.

CONCRETE PLACEMENT

Mix and place concrete in accordance with the following.

Place concrete in accordance with the most stringent of either ACI 304 or this section.

Concrete must be placed within the timeframe specified in WisDOT SSHSC 501. Retarders may be used if approved by the DFD Construction Representative and AE.

Before placing concrete, remove debris, ice, snow, and other foreign materials from the subgrade or formwork.

Remove standing water from subgrade. Dry and compact subgrade in accordance with the requirements of Division 2. Do not place concrete on soft or frozen subgrade.

Place and secure steel reinforcement prior to placing concrete.

Position and secure expansion joint material, sleeves, waterstops and other embedded items prior to placing concrete. Place embedded items in accordance with the most stringent of either drawings or manufacturer recommendations.

Apply bonding agent to existing concrete surfaces requiring a bond with new concrete.

Convey concrete from truck to final position by method that will prevent separation. Unless otherwise approved, limit free fall of concrete to 4' maximum height to avoid separation.

Place concrete continuously so that concrete is deposited on or adjacent to concrete that is still plastic. When placing of concrete is temporarily halted or delayed, provide construction joints.

Place concrete in lifts not exceeding 18".

Consolidate concrete by mechanical vibration. Allow vibrator to penetrate the full depth of the slab or lift. Overlap previously vibrated areas by 25%.

After striking off and consolidating concrete, smooth surface by screeding and floating. Test surface for trueness with a 10 ft straightedge. Remove surface irregularities and refloat repaired areas to provide a continuous, smooth finish of uniform texture.

Work edges of slabs and formed joints with edging tool to form a 1/4 in. radius.

After floating and when excess moisture has disappeared, provide broom finish by drawing a fine-hair broom perpendicular to direction of travel.

After 24 hours, remove forms, clean ends of joints, and repair honeycombed areas by means approved by the AE.

COLORED CONCRETE PLACEMENT

Not applicable to this project.

CONCRETE CURB AND GUTTER

Not applicable to this project.

SIDEWALKS, DRIVEWAY APRONS, BIKE PATHS

Concrete work shall meet the requirements of Division 3, and WisDOT SSHSC, Sections: 602.

Provide Standard Duty concrete sidewalk with a minimum thickness shown on the plans for all sidewalks, bike lanes, and plaza/patio areas with little or no motorized vehicle traffic. If no thickness is shown on the plans, then provide a minimum of 5-inches.

Unless otherwise shown on the drawings, provide all walks with a cross slope of 1/4" per foot and scored contraction joints of width approximately equal to the length.

Dowel replacement concrete adjacent to existing slabs or to building walls or retaining walls with epoxy coated reinforcing rod set into the new slab 12" and into the structural wall 4" at 18" on centers.

Provide a boxed out square 12" larger than the casting, where manholes or valve boxes occur in a walk.

Unless otherwise noted, joint all replacement concrete work to match adjacent work. Generally provide square layout of joints, subject to the DFD Construction Representative's approval. Consult with AE and DFD Construction Representative before laying out joints for large areas and areas of intersecting walks.

Hand tool all joints outside of concrete pavement areas.

Remove and replace, at no cost to the Owner, any adjacent slabs not noted for removal, but which are broken or cracked by the Contractor's activities.

Contractor shall review sidewalk grades with the AE prior to concrete placement to verify that positive drainage will be provided. Contractor shall provide minor adjustment of sidewalk grades as requested by the AE to provide positive drainage. Minor adjustments of up to 3" +/- in elevation shall be considered incidental. Contractor shall be responsible for remedial actions required to provide positive drainage for all areas identified following placement of surface materials where this requirement has not been met.

COLD WEATHER PLACING

Protect concrete work from physical damage or reduced strength caused by frost, freezing actions, or low temperatures, in compliance with ACI 306R and as specified below.

1. When air temperature falls to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 60 deg F (50 deg F for heavy sections) and not more than 90 deg F at point of delivery.
- Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials. Verify forms, reinforcing steel, and adjacent concrete surfaces are entirely free of frost, snow and ice before placing concrete.
- During seasons when atmospheric temperatures may be expected to drop below 40 deg F, concrete shall be protected by covering with impermeable paper and not less than 12 in. of loose dry hay or straw or thick insulating blankets. Retain covering for ten days.

HOT WEATHER PLACING

When hot weather conditions exist that would seriously impair quality and strength of concrete, place concrete in compliance with ACI 305R and as specified below.

- Cool ingredients before mixing to maintain concrete temperature at time of placement below 90 deg F. Mixing water may be chilled, or chopped ice may be used to control temperature provided water equivalent of ice is calculated in total amount of mixing water.
- Cover reinforcing steel with water-soaked burlap if it becomes too hot to prevent steel temperature from exceeding the ambient air temperature immediately before embedment in concrete.
- Spray forms, reinforcing steel, and subgrade just before concrete is placed.
- Do not use set-control admixtures, unless approved by A/E.

CURING

Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Cure formed and unformed concrete for seven days or until 75 percent of the required 28-day compressive strength is obtained, whichever is less.

For standard gray concrete, methods may include plastic sheets, constant wetting of surface with water, curing paper, or commercial curing compound. Apply curing compound at not less than 200 sq ft per gal in accordance with manufacturer's recommendations.

REPAIR AND PROTECTION

Analyze and repair defects or deficiencies per Section 424 of the WisDOT CMM. Repair or replace broken or defective concrete. Remove surface stains.

Exclude traffic from concrete until the specified curing period is complete (generally 7 days). Protect concrete from damage until Substantial Completion.

Prior to final inspection, sweep concrete and wash free of stains, dirt, and other foreign materials.

FIELD QUALITY CONTROL

Provide testing as described in Quality Assurance and Testing sections above.

Concrete Delivery Tickets: For each load delivered, collect and submit three copies of delivery tickets that include the reporting requirement of ASTM C94/C94M and include additional information as specified. Record jobsite addition of water or admixtures with a signature of person requiring the adjustment.

Compressive Strength Specimens: ASTM C31/C31M:

For strength specimens to be standard cured for acceptance of concrete, cast a set of cylinders and cure specimens at the jobsite in accordance with ASTM C31/C31M. Cast at least two specimens for each age that strength will be tested for information and additional reserve specimens as needed. Strength test results at the designated age shall be the average of two 6 × 12-in. or three 4 × 8-in. specimens.

If required, cast additional sets of cylinders for field-curing in accordance with ASTM C31/C31M

1
2 Transport specimens to the lab within 48 hours after casting and cure them in accordance with
3 final curing requirements of ASTM C31/C31M until tested.
4

5 Compressive-Strength Tests: ASTM C39/C39M.

6 Test specimens for compressive strength at 7 days or at an alternative early age as required and
7 one set at 28 days or at an alternate test age as designated for specified strength.

8 Acceptance of concrete shall be based on strength test results of standard cured cylinders in
9 accordance with ASTM C31 and tested at 28 days in accordance with ASTM C39. Strength test
10 results at the designated age shall be the average of two 6 × 12 inch or three 4 × 8 inch
11 specimens.
12

13 When strength cylinders are made, tests of slump, air content, temperature and density shall be
14 made and recorded with the strength test results.
15

16 Strength of each concrete class shall be deemed satisfactory when both of the following criteria
17 are met:

18 The average of three consecutive compressive-strength tests equals or exceeds
19 specified compressive strength.
20

21 Any individual compressive-strength test result does not fall below specified
22 compressive strength, f'_c :
23

24 by more than 500 psi when $f'_c \leq 5000$ psi

25 by more than $0.1f'_c$ when $f'_c > 5000$ psi
26
27

28 When compressive strength tests fail to meet the provisions of (d), follow procedure in ACI
29 301 for evaluation of concrete strength tests.
30

31 When it is deemed necessary to evaluate the adequacy of concrete strength, at least 3 cores shall
32 be obtained from the portion of the structure represented by the low strength tests. Cores shall
33 be removed and conditioned in accordance with ASTM C42. The strength of cores shall comply
34 with the following:
35

36 Average strength of 3 cores $\geq 0.85f'_c$

37 Individual core strength $\geq 0.75f'_c$
38
39

40 A compressive-strength test to be the average compressive strength from a set of two specimens
41 obtained from same composite sample and tested at age indicated.
42

43 When strength of field-cured cylinders is less than 85 percent of companion laboratory-cured
44 cylinders, Contractor to evaluate operations and provide corrective procedures for protecting
45 and curing in-place concrete.
46

47 Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be
48 permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
49

50 Additional Tests:

51 Testing and inspecting agency to make additional tests of concrete when test results
52 indicate that slump, air entrainment, compressive strengths, or other requirements have
53 not been met, as directed by Architect.
54

1 Testing and inspecting agency may conduct tests to determine adequacy of concrete
2 by cored cylinders complying with ASTM C42/C42M or by other methods as directed
3 by Architect.
4

5 Acceptance criteria for concrete strength to be in accordance with ACI 301,
6 Section 1.6.6.3.
7

8 Additional testing and inspecting, at Contractor's expense, will be performed to determine
9 compliance of replaced or additional work with specified requirements.
10

11 Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract
12 Documents. Concrete loads that do not meet the on-site field test criteria will be rejected.
13

14 **END OF SECTION**

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SECTION 06 10 63
EXTERIOR ROUGH CARPENTRY

SECTION 06 10 63

EXTERIOR ROUGH CARPENTRY

PART 1 - GENERAL

SUMMARY

Section Includes: Wood fences.

Related Requirements:

Section 09 93 00 "Staining and Transparent Finishing"

ACTION SUBMITTALS

Product Data: For preservative-treated wood products.

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.

Factory mark each item with grade stamp of grading agency.

For items that are exposed to view in the completed Work, omit grade stamp and provide certificates of grade compliance issued by grading agency.

Provide dressed lumber, S4S, unless otherwise indicated.

Maximum Moisture Content:

Boards: 19 percent.

Dimension Lumber: 19 percent.

Timber: 19 percent.

LUMBER

Boards: Western red cedar, Grade B or better; NLGA, WCLIB, or WWPA.

POSTS

Dimension Lumber Posts: Construction or No. 2 grade and the following species:

Western red cedar; NLGA, WCLIB, or WWPA.

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 or screws, in sufficient length, to penetrate not less than 1-1/2 inches into wood substrate.

Use fasteners with hot-dip zinc coating complying with ASTM A153/A153M or ASTM F2329 unless otherwise indicated.

METAL ACCESSORIES

Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A653/A653M, G60 coating designation.

Stainless Steel Sheet: ASTM A240/A240M or ASTM A666, Type 304.

PART 3 - EXECUTION

INSTALLATION

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 metal framing anchors to comply with manufacturer's written instructions.

Do not splice structural members between supports unless otherwise indicated.

END OF SECTION

SECTION 09 93 00
STAINING AND TRANSPARENT FINISHING

PART 1 - GENERAL

SUMMARY

Section Includes: Primers, Wood Stains, and Transparent finishes.

ACTION SUBMITTALS

Product Data: For each type of product.

Samples: For each type of finish system and in each color and gloss of finish required.

PART 2 - PRODUCTS

MANUFACTURERS

Basis of Design Product: Subject to compliance with requirements, provide products indicated in wood finish systems schedules or comparable products:

Thompson's WaterSeal Waterproofing Stain

MATERIALS, GENERAL

Material Compatibility:

Provide materials for use within each coating system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

Stain Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

EXAMINATION

Maximum Moisture Content of Exterior Wood Substrates: 15 percent, when measured with an electronic moisture meter.

PREPARATION

Clean and prepare surfaces to be finished according to manufacturer's written instructions for each substrate condition and as specified.

Remove dust, dirt, oil, and grease by washing with a detergent solution; rinse thoroughly with clean water and allow to dry. Remove grade stamps and pencil marks by sanding lightly. Remove loose wood fibers by brushing.

Remove mildew by scrubbing with a commercial wash formulated for mildew removal and as recommended by stain manufacturer.

APPLICATION

Apply finishes according to manufacturer's written instructions.

Apply finishes to produce surface films without cloudiness, holidays, lap marks, brush marks, runs, ropiness, or other surface imperfections.

CLEANING AND PROTECTION

Protect work of other trades against damage from finish application. Correct damage by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

At completion of construction activities of other trades, touch up and restore damaged or defaced finished wood surfaces.

1
2 **EXTERIOR WOOD-FINISH-SYSTEM SCHEDULE**
3 Wood Substrates, Wood Fences:
4 2 coats Thompson's WaterSeal Waterproofing Stain
5
6 **END OF SECTION**

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SECTION 30 05 00
COMMON WORK RESULTS FOR ALL EXTERIOR WORK
BASED ON DFD MASTER SPECIFICATION DATED 09/01/2015

PART 1 – GENERAL

SCOPE

This section provides information common to two or more technical site work specification sections or items that are of a general nature, and not included in other sections. This section applies to ALL work included as part of Division 31 and Division 32. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Referenced Organizations
- Referenced Documents
- Quality Assurance
- Safety
- Permits
- Construction Limits
- Equipment & Materials Furnished by Others
- Provisions for Future Work
- Work by Others
- Submittals
- Off Site Storage
- Codes
- Certificates and Inspections
- As-Built Drawings

PART 2 - MATERIALS

- Barricades, Signs, and Warning Devices

PART 3 - EXECUTION

- Maintenance of Site and Building Access/Egress
- Continuity of Existing Traffic/Parking and Traffic Control
- Survey and Staking
- Utility Locates
- Protection and Continuity of Existing Utilities
- Protection of Existing Work and Facilities
- Stormwater/Excavation Water Management

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.
Site Clearing – 31 10 00
Earthmoving – 31 20 00
Erosion Control – 31 25 00

REFERENCED ORGANIZATIONS

Abbreviations of organizations referenced in these specifications are as follows:

AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
ASTM	American Society for Testing and Materials
EPA	Environmental Protection Agency
OSHA	Occupational Safety and Health Administration
WDNR	State of Wisconsin Department of Natural Resources
WISDOT	State of Wisconsin Department of Transportation

1 **REFERENCED DOCUMENTS**

2 Where reference is made to WisDOT or SSHSC in this specification it shall mean the pertinent sections of
3 the Wisconsin Department of Transportation, Standard Specifications for Highway and Structure
4 Construction (SSHSC), current edition, and all supplemental and interim supplemental and interim
5 specifications.

6
7 Where reference is made to the SSSWC, it shall mean pertinent sections of the Standard Specifications for
8 Sewer and Water Construction (SSSWC) in Wisconsin, current edition.

9
10 Method of measurement and basis of payment sections in referenced documents shall not apply.

11
12 **QUALITY ASSURANCE**

13 Provide materials and products as required by individual specification sections. Refer to Section GC -
14 General Conditions of the Contract regarding substitutions.

15
16 Provide quality assurance testing and reporting as required by individual specification sections.

17
18 **SAFETY**

19 Contractor is solely responsible for worksite safety.

20
21 Perform all work in accordance with applicable OSHA, state and local safety standards.

22
23 **PERMITS**

24 Unless otherwise noted in the Contract Documents, Contractor shall be responsible for obtaining and
25 paying for all permits necessary to complete the work.

26
27 **CONSTRUCTION LIMITS**

28 Construction Limits are indicated on the drawings. In the absence of such a designation on the drawings,
29 confine work to the minimum area reasonably necessary to undertake the work as determined by the DFD
30 Project Representative. In no case shall construction activities extend beyond state property lines or
31 construction easements.

32
33 The Contractor shall restore all disturbed areas in accordance with the drawings and specifications. If
34 drawings and specifications do not address restoration of specific areas, these areas will be restored to pre-
35 construction conditions as approved by the DFD Project Representative.

36
37 **EQUIPMENT & MATERIALS FURNISHED BY OTHERS**

38 Vault & Privy are pre-manufactured and will be supplied by Owner and installed by Building
39 Supplier (Huffcut Precast Concrete), all under a separate contract.

40
41 **PROVISIONS FOR FUTURE WORK**

42 None.

43
44 **WORK BY OTHERS**

45 Coordinate work under this project with work by Owner and other contractors on the site.

46
47 **SUBMITTALS**

48 Refer also to the General Conditions and Division 1.

49
50 Submit manufacturer's shop drawings, product data, samples, substitutions and operation and maintenance
51 (O&M) data for approval as required by individual specification sections.

52
53 Unless otherwise noted, provide 6 copies of each submittal. Submit to project architect/engineer (A/E)
54 unless otherwise directed by DFD Project Representative at the Pre-Construction Meeting.

1 **OFF SITE STORAGE**

2 Refer to Division 1.

3
4 In general, the payments for materials stored off site will only be considered in instances where there is
5 limited space available for storage on the site. Prior approval by the DFD Project Representative, together
6 with the execution of a Storage Agreement will be required.

7
8 **CODES**

9 Comply with the requirements of all applicable, local, state and federal codes.

10
11 **CERTIFICATIONS AND INSPECTIONS**

12 Refer to Section GC - General Conditions.

13
14 Obtain and pay for all required sampling, testing, inspections, and certifications except those expressly
15 listed as provided by the A/E or other third party in the Contract Documents. Deliver originals of
16 certificates and documents to the DFD Project Representative within 3 days; provide copies to the A/E.
17 Include copies of the certifications and documents in the O&M Manual.

18
19 **AS-BUILT DRAWINGS**

20 DFD will provide the Contractor with a suitable set of Contract Documents on which daily records of
21 changes and deviations from contract shall be recorded.

22
23 At completion of the project, the Contractor shall submit the marked-up as-built drawings to the A/E prior
24 to final payment.

25
26 **PART 2 – MATERIALS**

27
28 **BARRICADES, SIGNS, AND WARNING DEVICES**

29 Traffic barricades, traffic signs, and warning devices shall meet the requirements of applicable OSHA
30 standards and the FHA Manual of Uniform Traffic Control Devices (MUTCD).

31
32 **PART 3 - EXECUTION**

33
34 **MAINTENANCE OF SITE AND BUILDING ACCESS/EGRESS**

35 Unless otherwise shown or directed, maintain existing access and egress to the facility throughout
36 construction. Maintain ANSI A117 compliant access for disabled persons, delivery access, emergency
37 vehicle access, and emergency egress. Do not interrupt access and egress without prior written approval
38 from the DFD Project Representative.

39
40 **CONTINUITY OF EXISTING TRAFFIC/PARKING AND TRAFFIC CONTROL**

41 Refer also to Section GR - General Requirements.

42
43 Do not interrupt or change existing traffic, delivery, or parking without prior written approval from the
44 DFD Project Representative. When interruption is required, coordinate schedule with the Owner agency to
45 minimize disruptions. When working in public right-of-way, obtain all necessary approvals and permits
46 from applicable municipalities and WISDOT.

47
48 When Contractor's activities impede or obstruct traffic flow, Contractor shall provide traffic control
49 devices, signs and flaggers in accordance with other Contract Documents and the current version of the
50 MUTCD, or as shown on the Drawings.

51
52 **SURVEY AND STAKING**

53 Contractor shall be responsible for transferring benchmarks, control points, lines and grades to the project
54 site as necessary to complete work.

1 **UTILITY LOCATES**

2 Contact Diggers Hotline at 1-800-242-8511 in accordance with statutory requirements. Coordinate utility
3 locates with WI Departments of Natural Resources.

4
5 Contractor shall include the costs for **ALL** underground utility locates in their bid. Locates shall include
6 excavation, backfill, survey and pictures of existing utilities within the construction limits. Survey
7 information shall include size, elevation, GPS location, materials and height and width of utility. Locates
8 shall be authorized by DFD Project Representative.

9
10 **PROTECTION AND CONTINUITY OF EXISTING UTILITIES**

11 Verify the locations of any water, drainage, gas, storm sewer, sanitary sewer, electric,
12 telephone/communication, fuel, steam lines, chilled water or other utilities and site features which may be
13 encountered in any excavations or other sitework. All lines shall be properly underpinned and supported to
14 avoid disruption of service.

15
16 Do not interrupt or change existing utilities without prior written approval from the DFD Project
17 Representative, affected utilities and users. Notify all users impacted by outages a minimum of 48 hours in
18 advance of outage. Notification shall be provided in writing and describe the nature and duration of
19 outages and provide the name and number of Contractor's foreman or other contact.

20
21 Any service connections encountered that are to be removed shall be cut off at the limits of the excavation
22 and capped in accordance with the requirements of applicable codes and any specifications governing such
23 removals.

24
25 **PROTECTION OF EXISTING WORK AND FACILITIES**

26 Verify the locations of, and protect, any signs, paved surfaces, buildings, structures, landscaping,
27 streetlights, utilities, and all other such facilities that may be encountered or interfered with during the
28 progress of the work. Take measures necessary to safeguard all existing work and facilities that are outside
29 the limits of the work or items that are within the construction limits but are intended to remain. Report
30 any damage to existing facilities to the DFD Project Representative immediately. Correct all damages at no
31 cost to Owner.

32
33 **STORMWATER/EXCAVATION WATER MANAGEMENT**

34 Control grading around structures, pitch ground to prevent runoff into excavated areas.

35
36 Pits, trenches within building lines and other excavations shall be maintained free of water.

37
38 Provide trenching, pumping, other facilities as needed to control stormwater runoff and excavation water.

39
40 Notify Architect/Engineer if springs or running water are encountered in excavation; provide discharge by
41 trenches, drains, pumping to point outside of excavation. Provide information to Architect/Engineer of
42 points and areas that water will be discharged.

43
44 Implement stormwater runoff and drainage control measures to prevent damage from flooding, erosion, and
45 sedimentation to on-site and off-site areas during construction.

46
47 **END OF SECTION**

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SECTION 31 00 00
SITE WORK FOR PREMANUFACTURED CONCRETE VAULT PRIVY

PART 1 - GENERAL

SCOPE

The work under this section shall consist of providing all site work necessary for the installation of a pre-manufactured concrete vault privy, as required in these specifications, on the drawings, and as otherwise deemed necessary to successfully complete work. The site work contractor shall prepare the site to accept the owner's pre-manufactured concrete vault privy which will be furnished and installed by the owner's manufacturer.

Included are the following topics:

PART 1 - GENERAL

- Scope
- Reference Documents
- Reference Standards
- General Requirements

PART 2 – PRODUCTS

- Structural Fill
- Granular Backfill, Crushed Stone, or Sand Base Aggregate
- Path Stone Screenings

PART 3 - EXECUTION

- Topsoil Removal
- Site Preparation
- Access
- Finish Grading
- Clean Up

REFERENCE DOCUMENTS

Applicable provisions of Division 1 shall govern all work under this section.
31 20 00 - Earthmoving

REFERENCE STANDARDS

ANSI/ASCE-7-05, "Minimum Design Loads for Buildings and Other Structures".

2021 International Building Code (IBC).

2017 ICC A117.1 Accessible and Usable Buildings and Facilities.

Concrete Reinforcing Institute, "Manual of Standard Practice".

Wisconsin Department of Safety and Professional Services (DSPS), SPS 384, 391.

Where reference is made to the "SSHSC", it shall mean the pertinent sections of the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, current edition, and all supplemental and interim supplemental specifications. Where reference is made to the "SSSWC", it shall mean pertinent sections of the Standard Specifications for Sewer and Water Construction in Wisconsin, current edition. Where reference is made to the "BMPH", it shall mean the Wisconsin Construction Site Best Management Practice Handbook, current edition as published by the WDNR. Method of measurement and basis of payment sections in referenced documents shall not apply.

GENERAL REQUIREMENTS

The site work contractor shall be responsible for coordinating delivery of the owner's pre-manufactured precast concrete privy with the owner and the owner's pre-manufactured precast concrete supplier (Huffcutt Concrete). The site work contractor shall have the site ready for delivery and installation of the owner's pre-

1 manufactured, precast privy building after receiving a written notice to proceed and shall take into
2 consideration the owner manufacturer's production schedule. Site shall be ready to receive new vault toilet
3 no earlier than one week prior to scheduled delivery date. These vault are used extensively by campers and
4 we hope to minimize down time.

5
6 It is the site work contractor's responsibility to coordinating the exact delivery date and time directly with
7 the owner's pre-manufactured vault privy supplier (Huffcutt Concrete) based on the pre-manufactured
8 building supplier's production schedule, any road limits in effect, and other factors which may affect timing
9 of unit delivery.

10
11 The site work contractor shall be responsible for preparing the site in order to accept the owner's pre-
12 manufactured, vault privy. This work will include: prepping the site including the route of access for delivery
13 trucks if required, excavation for building, and foundation preparation. The site work contractor shall provide
14 (72) hours advance written notice to the owner informing them when excavation of the building foundation
15 will take place and of the designated installation date and time.

16
17 If existing subsoil conditions are suspect or do not meet the assumed allowable bearing pressure, the site
18 work contractor shall stop excavation until the owner's Engineer and/or Structural Consultant determine
19 appropriate corrective measures.

20
21 The owner's Engineer shall also be present at the time the pre-manufactured building arrives at the site in
22 order to inspect the building. If the unit is rejected for any reason, the site work contractor shall terminate
23 work until deficiencies in the pre-manufactured unit are corrected. Delays created by non-acceptance of the
24 unit shall not result in additional site work costs to the owner.

25
26 The site work contractor shall be responsible for any and all damages to the pre-manufactured vault privy
27 once it is set at the site as the result of the site work contractor's activities.

28
29 The owner's pre-manufactured vault privy supplier shall be responsible for any/all permits or approvals
30 required to transport the vault privy unit from the production facility to the site.

31
32 The site work contractor shall be responsible for all aspects of the site work on this project including the
33 construction of an accessible route of travel meeting accessible design standards found in 2010 ADA
34 Standards for Accessible Design, DOJ 9-10.

35 36 **PART 2 – PRODUCTS**

37 38 **STRUCTURAL FILL**

39 Clean material meeting the requirements of "Structure Backfill" as defined in WisDOT Section 210.2.

40 41 **GRANULAR BACKFILL, CRUSHED STONE, OR SAND BASE AGGREGATE**

42 Clean material meeting the requirements of "Grade 1" or "Grade 2" granular backfill as defined in
43 WisDOT Section 209.2.

44 45 **PART 3 – EXECUTION**

46 47 **TOPSOIL REMOVAL**

48 Comply with erosion control requirements of Section 31 25 00 – Erosion Control relative to topsoil removal
49 and storage.

50
51 Complete clearing and grubbing work as required by the Contract Documents and as specified in Section 31
52 10 00 – Site Clearing.

53
54 Coordinate topsoil stockpile locations with Owner.

1 Remove all topsoil from proposed locations of buildings, structures, roads, path, walks and other paved areas.
2 Also, remove topsoil from proposed lawn or turf areas where the proposed elevation exceeds the existing
3 elevation by 1' or greater, or where fill will be placed.

4
5 Stockpile reusable topsoil for use in restoration. Salvaged topsoil shall not be removed from the site without
6 prior approval of the Construction Representative.

7
8 Do not excavate, grade or work topsoil in frozen or muddy conditions.

9
10 Minimize compaction of topsoil to the greatest extent possible.

11 **SITE PREPARATION**

12 The site work contractor on this project shall be responsible for all aspects of site work on this project
13 including: preparing the site for vault privy delivery and installation, preparing a route of travel/staging area
14 for vault privy delivery vehicles, removal of trees in order to accomplish vault privy delivery and installation,
15 excavation and placement of foundation base for the proposed building, backfilling, and finish work as
16 described on the project plans once the pre manufactured concrete vault privy supplier has set the building.

17
18 The site work contractor shall excavate the foundation for the proposed building. Excavate the site so the
19 finished floor height of the building will be located per the project drawings. Excavate a minimum of 1' wider
20 than the privy building on all sides at the proposed base elevation. Site preparation shall include placing or
21 installing granular backfill that is at least one foot larger than the length and width of the proposed building
22 on each side.

23
24 The site work contractor shall prepare the bedding foundation a minimum of 8" compacted thickness over
25 undisturbed sub grade. Place and compact the bedding base material only after verification of foundation soil
26 conditions by owner's Engineer. Screed the foundation bedding material level, to within 1/4" tolerance in all
27 directions. Base material shall be placed within a perimeter form with flat and level top edges to facilitate
28 screening of material. Thoroughly compact base material to avoid settling to 95% modified Proctor. Forms
29 shall remain until after the building is set.

30
31 Keep granular backfill, crushed stone, sand foundation bedding within the confines of the soil or perimeter
32 forms. Do not allow the bedding to become unconfined so that it washes, erodes, or otherwise becomes
33 undermined. The owners pre-manufactured building supplier will be responsible for setting the vault privy
34 building at the site prepared by the site work contractor as described above.

35
36 The site work contractor shall be responsible for backfilling around the structure after the building has been
37 placed. Backfill shall consist of structural backfill and shall be placed in uniform lifts not exceeding 6"
38 thickness before compaction. Backfill evenly on each side of the vault walls. Backfill shall be free of any
39 stones larger than 3" in diameter or other debris. Thoroughly compact all backfill to avoid settling to 95%
40 modified Proctor density.

41
42 The site work contractor shall create positive drainage away from building for all backfill, aprons, or slabs
43 as required, or as shown on the project plans.

44 **ACCESS**

45 Site work contractor shall coordinate with the owner's vault privy manufacturer to ensure that access includes
46 a level, unobstructed area large enough for the vault privy manufacturer's crane and tractor-trailer to park
47 adjacent to the proposed building site. The privy manufacturer's crane must be able to place its' outriggers
48 within 3'-0" of the edge of the building pad and their truck and crane must be able to get side-by-side under
49 their own power.

50
51 The site work contractor shall be responsible for making minor repairs to the lawn or turf areas as the result
52 of trucks/cranes entering and leaving the site to set the proposed building(s).

1 **FINISH GRADING**

2 The site work contractor shall spread excess excavated material from the vault privy excavation around the
3 installed structure. Maintain 6" clearance between finished grade and floor on all sides of the building not
4 having concrete aprons. Intended final grades are flush with the tops of any concrete sidewalks and building
5 aprons. Top dress all disturbed areas with 4-inch thickness of topsoil to reach finish grades as indicated on
6 the project plans. Finish grade all areas away from the proposed structure(s) at slopes of 3:1 to allow for
7 drainage away from the structure, or as indicated on the project plans.

8
9 All disturbed areas shall be hand raked to remove exposed rocks over one inch in maximum dimension,
10 sticks, roots, debris, etc. Debris removed from the surface shall be disposed of by the contractor off-site.

11
12 **CLEAN UP**

13 Clean up work site and all areas used for the storage of materials or the temporary deposit of excavated earth.
14 Remove all surplus material, tools and equipment.

15
16 The site work contractor shall be responsible for removing any excess excavation from the site and for its'
17 disposal off site at the Contractors expense.

18
19 **Site Work Contractor is responsible for delay claims from Vault Supplier if the site is not at an install**
20 **ready condition when the Vault Supplier arrives on-site with the vault unit.**

21
22 **END OF SECTION**

SECTION 31 10 00
SITE CLEARING
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 clear and grub the site of existing vegetation as required in these specifications and on the drawings. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Clearing Limits

PART 2 - MATERIALS

- Not Used

PART 3 - EXECUTION

- General
- Cutting
- Removal Methods
- Grubbing

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:

- Section 30 05 00 – Common Work Results For All Exterior Improvements
- Section 31 20 00 – Earthmoving
- Section 31 25 00 – Erosion Control

CLEARING LIMITS

Confine clearing and grubbing operations to the limits as indicated on the drawings. In the absence of such a designation on the drawings, confine work to the minimum area reasonably necessary to undertake the work as determined by the Owner's Project Representative. Clearing and grubbing operations shall not extend past the property line or easement line without prior approval of the DFD Project Representative.

PART 2 – MATERIALS (Not Used)

PART 3 - EXECUTION

GENERAL

Limits of clearing and grubbing shall be as shown on drawings. When selective pruning and removal is specified, limit work to only those plants or limbs shown on the drawings or detailed in the specifications.

Remove and dispose of trees, stumps, roots, brush, vegetation, debris, and other items that interfere with new construction as shown on the drawings.

To minimize erosion, limit heavy equipment travel only to areas that are necessary to complete clearing and grubbing operations.

Repair damaged erosion control features immediately.

CUTTING

Fell and prune trees in manner so as not to damage adjacent structures, site features or other plants not scheduled for removal.

1
2 If trees scheduled to remain are injured notify DFD Project Representative.
3

4 When pruning, limit removal only to those limbs shown on drawings or that which is necessary to complete
5 other site work.
6

7 When pruning, make cuts near trunk, but beyond branch collar. If no branch collar is present, make a
8 vertical cut near where the limb meets the trunk. Do not cut branch collar. Application of tree paint is not
9 necessary for pruning trees as designated on the drawings unless otherwise noted.
10

11 Prevent the spread of oak wilt by treating all cut surfaces and abrasions sustained between April 1 and
12 October 1 on healthy oak trees and saplings with a thorough application of tree paint immediately upon
13 discovering a wound. Between these dates, also paint the cut surfaces of the stumps of all healthy oak trees
14 and saplings immediately after cutting, whether remaining in place or grubbed.
15

16 Use sharp tools and make clean cuts.
17

18 **REMOVAL METHODS**

19 Unless the drawings specify otherwise, the Contractor owns all trees, brush and debris removed from the
20 site. All cleared material shall be disposed of offsite unless otherwise specified on the drawings or agreed
21 upon by the Owner and DFD Project Representative prior to any clearing and grubbing taking place.
22

23 Clearing and grubbing debris shall be disposed of at facilities designed to accept the material that is being
24 disposed. Follow all local, state and federal regulations.
25

26 **GRUBBING**

27 Grubbing operations may be completed by removal of stump section or by grinding.
28

29 Remove stumps, logs, roots, other organic matter located within proposed building excavations completely.
30

31 Remove stumps, logs, roots, other organic matter located within proposed pavements and structures to the
32 depth indicated:
33

34 Walks: 24 inches below subgrade

35 Roads and drives and parking areas: 36 inches below subgrade

36 Concrete slabs: 24 inches below subgrade

37 Lawn areas: 12 inches

38 Footings and foundations for signs, lights, etc.: 18 inches below footing base
39

40 Depressions resulting from grubbing operations shall be backfilled in accordance with Section 31 20 00 –
41 Earthmoving.
42

43 **END OF SECTION**

SECTION 31 20 00
EARTHMOVING
BASED ON DFD MASTER SPECIFICATION DATED 12/15/2025

PART 1 - GENERAL

SCOPE

The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to complete earthwork required in these specifications and on the drawings. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference Standards
- Quality Assurance
- Submittals
- Quantities

PART 2 - MATERIALS

- Earth Fill
- Granular Fill
- Structural Fill

PART 3 - EXECUTION

- General
- Topsoil Removal
- Excavation
- Placing and Compacting Material
- Grading
- Grading Around Trees
- Soil Stabilization
- Clean Up

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:

- Section 30 05 00 – Common Work Results for All Exterior Improvements
- Section 31 10 00 – Site Clearing
- Section 31 23 16.16 – Structure Excavation for Minor Structures
- Section 31 25 00 – Erosion Control
- Section 32 91 13 – Soil Preparation

REFERENCE STANDARDS

American Society for Testing and Materials (ASTM):

D4318	Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³)
D1140	Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
D1557	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³)

D3017	Standard Test Method for Water Content of Soil and Rock In-Place by Nuclear Methods (Shallow Depth)
D4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)
D6913	Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
E329	Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

QUALITY ASSURANCE

The Contractor shall conduct sampling, testing, and analysis as required by this section and elsewhere in the Contract Documents either by retaining the services of an independent construction materials testing consultant or with internal certified testers. The materials testing personnel shall meet the requirements of ASTM E329.

The Contractor's construction materials testing personnel shall complete material testing as outlined in Table 31 20 00 -1.

Table 31 20 00 -1

Material	Test Required	Test/Sample Frequency
<i>Structural Fill</i>	<i>D6913 Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis</i> <i>D7928 Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis</i>	<i>1 test/500 CY placed</i>

SUBMITTALS

Provide samples of each type of soil or aggregate proposed for use on the project. Samples shall consist of a minimum of 50 pounds of soil.

Provide copies of all material testing reports completed for the project within 48 hours of completing the individual tests. Along with each individual test result, provide a running spreadsheet of all individual test results.

QUANTITIES

Finished topsoil depth shall be as specified in Section 32 91 13 – Soil Preparation or as shown on the drawings.

Contractor shall be solely responsible for determining all earthwork quantities based on the existing and proposed elevations provided on the drawings. Any geotechnical investigations provided by the Owner apply only to those locations that the data was collected and may not be indicative of conditions elsewhere on the site. The Contractor is responsible for collecting any additional geotechnical or survey data he deems necessary to complete an accurate estimate of earthwork quantities.

1 If onsite grading, excavation and borrow operations do not provide enough suitable material for fill areas,
2 Contractor shall coordinate and pay for excavation, transport and placement of imported material meeting
3 the specifications of the contract documents. If excavation results in excess materials, Contractor shall
4 coordinate and pay for loading, transport and offsite disposal of excess materials.
5

6 Contractor shall notify the DFD Project Representative immediately if geotechnical information, existing
7 grades, or proposed grades shown on the drawings appears to be inaccurate.
8

9 **PART 2 - MATERIALS**

10 **EARTH FILL**

11 Use clean material consisting of inorganic soil or a mixture of inorganic soil and rock, stone or gravel. The
12 material shall be free of topsoil, sod, stumps, wood, asphalt, concrete, debris, and other deleterious
13 materials. The maximum dimension of any material shall not exceed 2' in any direction.
14
15

16 **GRANULAR FILL**

17 Clean material meeting the requirements of "Grade 1" or "Grade 2" granular backfill as defined in
18 WisDOT Section 209.2.1.
19

20 **STRUCTURAL FILL**

21 Clean material meeting the requirements of "Structure Backfill" as defined in WisDOT Section 210.2.1.
22

23 **PART 3 - EXECUTION**

24 **GENERAL**

25 Complete earthwork excavation for elevation changes, utility trenches, minor structures and building
26 foundations in accordance with this section and the following applicable sections:
27
28

- 29 • Section 31 23 16.16 - Structure Excavation for Minor Structures
30

31 **TOPSOIL REMOVAL**

32 Comply with erosion control requirements of Section 31 25 00 – Erosion Control and as shown on the plan
33 relative topsoil removal and storage.
34

35 Complete clearing and grubbing work as required by the Contract Documents and as specified in Section
36 31 10 00 – Site Clearing.
37

38 Coordinate topsoil stockpile locations with Owner and other contractors working onsite.
39

40 Remove all topsoil from proposed locations of buildings, structures, roads, walks and other paved areas.
41 Also, remove topsoil from proposed lawn or turf areas where the proposed elevation exceeds the existing
42 elevation by 1' or greater, or where fill will be placed.
43

44 Stockpile reusable topsoil for use in restoration. Salvaged topsoil shall not be removed from the site
45 without prior approval of the DFD Project Representative.
46

47 Do not excavate, grade or work topsoil in frozen or muddy condition.
48

49 Minimize compaction of topsoil to the extent possible.
50

51 **EXCAVATION**

52 Excavate to the elevations shown on the drawings. Allow for placement of fill, base course, pavements, and
53 topsoil as required by the drawings and other Contract Documents.
54

55 Transfer lines and grades as shown on the drawings.
56

Excavate areas to provide positive drainage. Contractor shall notify the DFD Project Representative immediately if the final proposed elevations shown on the drawings do not provide drainage away from buildings, structures, roads, walks and other paved areas.

Remove excess and spoil material from the site in a timely fashion.

Do not excavate below design grades without prior authorization by the DFD Project Representative.

PLACING AND COMPACTING MATERIAL

Place material in fill areas only after all topsoil has been removed.

Place fill to the elevations shown on drawings; allow for placement of base course, pavements and topsoil as required by the drawings and other Contract Documents.

Fill type shall be as indicated on Table 31 20 00 -2, or as shown on the drawings.

Do not place fill on areas consisting of organic soil, debris or soft and yielding material.

Do not place fill in frozen or muddy areas.

Moisture condition subgrade as necessary to provide a firm surface prior to placing fill.

Place fill in horizontal lifts having thickness as shown on Table 31 20 00 - 2.

Compact fill material as required by Table 31 20 00 - 2 for given use.

Moisture condition fill material as necessary to achieve density required for given use.

Place and compact backfill so as to minimize settlement and avoid damage to walls, utility lines and other work in place. Place backfill simultaneously on both sides of free-standing structures.

It is the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified compaction. Compaction of controlled backfill by travel of grading equipment will not be considered adequate for uniform compaction. Hand guided vibratory or tamping compactors will be required whenever controlled backfill may be placed adjacent to walls, footings, and columns or in confined areas.

Table 31 20 00 -2

Location	Required Material	Maximum Compacted Lift Thickness	Minimum Proctor Compaction
Areas Beneath Footings, Floor Slabs, or Structures	Structural Fill	8"	95% Modified
Footing, Foundation and Structure Backfill	Structural Fill	8"	95% Modified
Areas within 10' of Existing or Proposed Building or Structure Footing or Slab	Granular Fill	12"	95% Modified
Turf Areas	Earth Fill	12"	85 % Modified

GRADING

Grading shall include areas necessary to establish new grades as required, additional areas disturbed by construction activities, storage, equipment including all trenching, where excess fill is deposited and where cutting is required.

1 New grades are designed to produce desired configuration of site and do not represent a balance between
2 cut and fill.

3
4 Excavated materials shall be disposed of by contractor at a suitable off-site location. Contractor shall be
5 responsible for securing suitable disposal site(s) and for all off-site disposal costs.

6
7 Grades not indicated shall be uniform levels or slopes between point elevations as shown. Adjust all grades
8 as necessary to provide positive drainage away from structures.

9
10 Grades for earthwork shall not deviate from established elevations, as shown in excess of 1 inch unless
11 otherwise directed by DFD Project Representative.

12
13 Do all cutting, filling, compacting fill, rough grading required to bring entire project to within respective
14 base course elevations or 6 inches below finished topsoil elevations.

15 16 **GRADING AROUND TREES**

17 Limit excavation, filling and grading near trees or other vegetation to the extent possible. When tree roots
18 are encountered, cut roots cleanly and squarely.

19
20 For trees within the grading limits that are to remain, install tree protection fencing as noted in the
21 drawings.

22 23 **SOIL STABILIZATION**

24 Notify the DFD Project Representative if a solid subgrade cannot be established through drying and
25 grading.

26 27 **CLEAN UP**

28 Level off all waste disposal areas and clean up all areas used for the storage of materials or the temporary
29 deposit of excavated earth. Remove all surplus material, tools and equipment.

30
31 Thoroughly clean all drainage ways, roads, parking lots, sidewalks, and paved surfaces and remove and
32 dispose of all debris and mud.

33
34 **END OF SECTION**

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SECTION 31 23 16.16
STRUCTURAL EXCAVATION FOR MINOR STRUCTURES
BASED ON DFD MASTER SPECIFICATION DATED 12/15/2025

PART 1 - GENERAL

SCOPE

The work under this section shall consist of providing all work, materials, labor, equipment, and supervision necessary to complete trenching for utilities and other work, as required in these specifications, on the drawings and as otherwise deemed necessary to complete the work. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference Standards
- Quality Assurance

PART 2 - MATERIALS

- Granular Fill
- Structural Fill

PART 3 - EXECUTION

- Preparation
- Dewatering
- Excavation
- Bearing Surface Approval
- Construction of Foundations, Footings and Slabs
- Backfill and Compaction
- Restoration

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 25 00 – Erosion Control

REFERENCE STANDARDS

American Society for Testing and Materials (ASTM):

D4318	Standard Test Methods for Liquid Limit, Plastic Limit and Plasticity Index of Soils
D698	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft ³)
D1140	Standard Test Methods for Determining the Amount of Material Finer than 75-µm (No. 200) Sieve in Soils by Washing
D1557	Standard Test Method for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft ³)
D4253	Standard Test Methods for Maximum Index Density and Unit Weight of Soils Using a Vibratory Table
D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)

D6913	Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis
D7928	Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis
E329	Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

QUALITY ASSURANCE

The Contractor's construction materials testing personnel shall complete material testing as outlined in Table 31 23 16.16 -1.

Table 31 23 16.16 -1

Material	Test Required	Test/Sample Frequency
Granular or Structural Backfill ⁽¹⁾	<i>D6913 Standard Test Methods for Particle-Size Distribution (Gradation) of Soils Using Sieve Analysis</i> <i>D7928 Standard Test Method for Particle-Size Distribution (Gradation) of Fine-Grained Soils Using the Sedimentation (Hydrometer) Analysis</i>	<i>0 tests: 0-500 cy</i> <i>1 test: 500-3000 cy</i>
	<i>ASTM D1140 Standard Test Methods for Amount of Material in Soils Finer than No. 200 (75-μm) Sieve in Soils by Washing</i>	"
Granular or Structural Backfill	<i>ASTM D6938 Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate in Place by Nuclear Methods (Shallow Depth)</i>	<i>0 tests: 0-500 cy</i> <i>1 test: 500-3000 cy</i>

(1) Tests shall meet the requirements for gradation as listed in WisDOT Section 209.2 and 210.2.

PART 2 - MATERIALS

GRANULAR FILL

Clean material meeting the requirements of "Grade 1" or "Grade 2" granular backfill as defined in WisDOT Section 209.2.1.

STRUCTURAL FILL

Clean material meeting the requirements of "Structure Backfill" as defined in WisDOT Section 210.2.1.

PART 3 - EXECUTION

PREPARATION

Review drawings and prepare work plan and schedule. Coordinate any necessary interruptions in utility service with DFD Project Representative, in accordance with other specification sections.

Contact Diggers Hotline. Locate and protect utilities, structures, pavement, trees, landscaping, benchmarks and other features in the work area.

Layout work according to drawings. Establish and transfer lines and grades as necessary to complete the work.

Remove topsoil from work area in accordance with Section 31 20 00 – Earthwork. Sawcut and remove pavement from work area in accordance with Section 02 41 13 – Demolition.

Support existing buildings, utilities and structures as necessary prior to beginning building excavation.

Grade area surrounding excavation to drain water away from excavation.

DEWATERING

Dewatering shall be completed in accordance with Section 31 23 19 – Dewatering.

EXCAVATION

Excavate to elevations and dimensions necessary to complete construction. Excavations shall be sufficiently deep to provide for foundations, footings, slabs, and any required base material.

Do not excavate material from under the 45-degree bearing splay beneath existing foundations or footings.

Notify DFD Project Representative if correction of unauthorized excavation or over-excavation is necessary. Said excavations will be corrected based on recommendations of DFD Project Representative or DFD's geotechnical consultant. Contractor will be responsible for all costs associated with correcting these excavations, including fees charged by DFD's geotechnical consultant.

Segregate the various materials excavated. Reserve material meeting the requirements of backfill for the project location. Excavated material that does not meet the requirements of backfill, and excess excavated material, shall be removed from the site and disposed by the contractor unless directed otherwise by other specification sections or the DFD Project Representative.

Locate bedding, backfill and spoil piles in accordance with OSHA requirements, and so that it does not interfere with public travel, adjacent landowners or other construction activities.

BEARING SURFACE REVIEW

Prior to over-excavating below the proposed bearing surface grade, or modifying bearing surface soil, contact DFD Project Representative to schedule inspection. Provide minimum of 24 hours confirmed notice.

Provide smooth soil surface at bearing surface grade, unless otherwise required by site-specific geotechnical reports. Hand trim excavation, remove loose material, lumped subsoil, rock and boulders from the bearing surface.

Once the bearing surface grade is established, protect the soil from becoming saturated, frozen, or adversely altered. Do not allow soil from the sidewall of the excavation to spall and fall onto the bearing surface.

CONSTRUCTION OF FOUNDATIONS, FOOTINGS AND SLABS

Construct foundations, footings and slabs in accordance with the drawings and pertinent specification sections.

Do not allow excavation sidewall soils to spall into excavation.

Do not allow water to collect in excavation.

Protect base of excavation from freezing.

Install waterproofing and foundation drainage system in accordance with drawings.

BACKFILL AND COMPACTION

Remove all forms, bracing, staking and other construction materials from the excavation prior to initiating backfilling.

Excavation shall be reasonably free of water prior to beginning backfilling. Do not place material on frozen surfaces or use frozen material.

Backfill excavation using the material specified on Table 31 23 16.16 - 2, or as shown on the drawings.

Compact fill material as required by Table 31 23 16.16 - 2 for the given use.

Moisture condition backfill material as necessary to achieve density required for given use.

Place and compact material to minimize settlement and avoid damage to structures, pipes, utility lines and other features. Hand-place and compact material as necessary.

Place backfill simultaneously on both sides of structures.

Backfill trenches to elevations shown on the drawings; allow for placement of base course, pavements, and topsoil as required by the drawings and other Contract Documents. Where final restoration will be delayed, backfill excavation to existing grade to provide a safe, free-draining surface.

It the responsibility of the Contractor to provide all necessary compaction equipment and other grading equipment that may be required to obtain the specified density. Vibratory plates or tamping type walk behind compactors will be required whenever backfill is placed adjacent to structures, pipes, utility lines and other features.

Flooding or jetting of backfill material for compaction purposes is not allowed.

Table 31 23 16.16 -2

Location	Required Material	Maximum Compacted Lift Thickness	Minimum Proctor Compaction
Areas Beneath Footings, Floor Slabs, or Structures	Structural Fill	6"	95% Modified
Footing, Foundation and Structure Backfill	Structural Fill	6"	95% Modified
Areas within 10' of an Existing or Proposed Building or Structure Footing or Slab	Granular Fill	8"	95% Modified
Areas Beneath Existing or Proposed Pavement (Roads, Drives, Walks)	Granular Fill	8"	90% Modified
Turf Areas	Earth Fill	12"	85 % Modified

RESTORATION

Restore structure excavation to proposed grades and surfaces as soon as practicable after backfilling.

Remove excess backfill and spoil material from the site as soon as possible after backfilling is complete, but no later than 2 calendar days after backfilling is complete.

Thoroughly clean all drainage ways, roads, parking lots sidewalks and paved surfaces and remove and dispose of all debris and mud.

END OF SECTION

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
- Erosion Control Plan

PART 2 - MATERIALS

- General
- Geotextile Fabric
- Temporary Ditch Barriers
- Silt Fence
- Erosion Mat
- Staples
- Soil Stabilizers
- Soil Tackifiers

PART 3 - EXECUTION

- General
- Grading and Earthwork
- Drainage
- 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 23 16.16 – Structural Excavation for Minor Structures
- Section 32 92 19 – 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.

EROSION CONTROL PLAN

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, soil stabilizers, and tackifiers 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.

TEMPORARY DITCH BARRIERS

Rectangular bales of hay or straw, tightly bound with twine, not wire. Anchor stakes shall be “T” or “U” steel posts, or hardwood, 2-inches by 2-inches nominal. Rebar shall not be used for anchor bales.

Temporary ditch checks meeting the requirements of the PAL and installed per the manufacturer’s instructions may be used in lieu of bales. Temporary ditch checks may also be classified as silt logs, silt logs, or wattles. Temporary ditch checks shall be American Excelsior, Erosion Tech, Western Excelsior, or approved equal.

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.

STAPLES

Use staples conforming to Standard Specifications for Highway and Structure Construction 628.2.3 to anchor erosion mat. Staples shall be U-shaped of No. 11 gauge or heavier steel wire, or other approved materials, with a width of one to two inches, and a length of not less than 6 inches for firm soils and not less than 12 inches for loose soils.

Use biodegradable staples in accordance with manufacturer’s recommendations for anchoring urban erosion mats. Acceptable anchoring devices are listed in the PAL. Wood and metal staples are not allowed for use with urban erosion mats.

1 **SOIL STABILIZERS**

2 Soil stabilizers shall be non-asphalt-based products of the type specified, and meeting the requirements of
3 the PAL.

4
5 **SOIL TACKIFIERS**

6 Soil tackifiers shall be non-asphalt-based products of the type specified, and meeting the requirements of
7 the PAL.

8
9 **PART 3 - EXECUTION**

10
11 **GENERAL**

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

16
17 Contractor shall provide all erosion control measures necessary to protect property and the environment.
18 Perform all work in accordance with manufacturer's instruction where these specifications do not specify a
19 higher requirement.

20
21 **GRADING AND EARTHWORK**

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

24
25 Clear only those areas designated for the placement of improvements or earthwork before placement of the
26 final cover. Perform stripping of vegetation, grading, excavation, or other land disturbing activities in a
27 logical sequence and manner which will minimize erosion. If possible, schedule construction for times of
28 the year when erosion hazards are minimal.

29
30 Do not clear the site of topsoil, trees, and other natural ground covers before the commencement of
31 construction. Retain natural vegetation and protect until the final ground cover is placed.

32
33 Do not stockpile soil within 25 feet of any roadway, parking lot, paved area, or drainage structure or
34 channel. Provide temporary stabilization and control measures (seeding, mulching, covering, erosion
35 matting, barrier fencing) for the protection of disturbed areas and soil piles which will remain unfinished
36 for a period of more than 14 consecutive calendar days.

37
38 Remove surplus excavation materials from the site immediately after rough grading. The disposal site for
39 the surplus excavation materials shall also be subject to these erosion control requirements.

40
41 **DRAINAGE**

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

44
45 Convey drainage to the nearest adequate public facility. Do not discharge water in a manner that will cause
46 erosion or sedimentation of the site or receiving facility.

47
48 Protect storm sewer inlets and catch basins in accordance with the erosion control plan, if provided. If not
49 specified, protect inlets with straw bale barriers, silt fencing, filter basket, gabion stone weepers, or other
50 equivalent methods approved by the A/E which provide the necessary erosion protection.

51
52 Divert roof drainage and runoff from all areas upslope of the site around areas to be disturbed or channel
53 them through the site in a manner that will not cause erosion.

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

4
5 **MAINTENANCE**

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

9
10 Maintain records of all inspections and any remedial actions taken.

11
12 Maintain stockpile stabilization measures as necessary after rainfall events and heavy winds. Replace
13 tarps, re-seed, and reapply mulch, tackifiers and stabilizers as necessary.

14
15 Remove sediment from stormwater and erosion control structures, basins and vessels as necessary.

16
17 Repair or replace damaged inlet protection.

18
19 Replace or supplement stone tracking pads with additional stone when they become ineffective.

20
21 Remove any sediment reaching a public or private roadway, parking lot, sidewalk, or other paved. Do not
22 remove tracked sediments by flushing. Completely remove any accumulations not requiring immediate
23 attention at least once daily at the end of the workday.

24
25 Frequently dispose of all waste and unused construction materials in licensed solid waste or wastewater
26 facilities. Do not bury, dump, or discharge, any garbage, debris, cleaning wastes, toxic materials, or
27 hazardous materials on the site, on the land surface or in detention basins, or otherwise allow materials to
28 be carried off the site by runoff onto adjacent lands or into receiving waters or storm sewer systems.

29
30 **END OF SECTION**

SECTION 32 11 23.33
DENSE GRADED BASE
BASED ON DFD MASTER SPECIFICATION DATED 12/30/2022

PART 1 - GENERAL

SCOPE

The work under this section consists of constructing a dense graded base using crushed stone or crushed gravel. The Contractor may also use crushed concrete, reclaimed asphaltic pavement, reprocessed material, or blended material. The work under this section shall provide a surface ready for constructing and supporting the Concrete or Asphalt Pavement.

PART 1 - GENERAL

- Scope
- Related Work
- Reference Standards
- Quality Assurance
- Submittals

PART 2 - MATERIALS

- Dense Graded Base

PART 3 - EXECUTION

- Construction
- Compaction
- Cleanup

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.

Related work specified elsewhere:

- Section 03 30 10 – Cast in Place Concrete for Site Work
- Section 30 05 00 – Common Work Results for Exterior Work
- DOT Section 305 – Dense Graded Base

REFERENCE STANDARDS

American Society for Testing and Materials (ASTM):

D1557	Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
D6938	Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods
E329	Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection

QUALITY ASSURANCE

The Contractor shall conduct sampling, testing, and analysis as required by this section and elsewhere in the Contract Documents either by retaining the services of an independent construction materials testing consultant or with internal certified testers. The materials testing personnel shall meet the requirements of ASTM E329.

The Contractor's construction materials testing personnel shall complete material testing as outlined in Table 32 11 23.33-1.

Table 32 11 23.33 -1

Material	Test Required	Test/Sample Frequency
<i>i.e. 3/4-inch Base Aggregate Dense</i>	<i>ASTM D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort</i>	<i>1 test/500 CY placed</i>
<i>i.e. 3/4-inch Base Aggregate Dense</i>	<i>ASTM D6938 Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods</i>	<i>1 test/500 CY placed</i>

SUBMITTALS

Provide copies of all material testing reports completed for the project within 48 hours of completing the individual tests. Along with each individual test result, provide a running spreadsheet of all individual test results.

PART 2 - MATERIALS

DENSE GRADED BASE

Use dense graded base **3/4 -inch**. Provide aggregate conforming to WisDOT Section 301.2 of the SSHSC for crushed stone, crushed gravel, crushed concrete, reclaimed asphaltic pavement, reprocessed material or blended material. Material gradations shall conform to WisDOT Section 305.2.2 of the SSHSC unless specified elsewhere in the contract documents.

Refer to Wisconsin DOT Section 305 "Dense Graded Base" following this specification section.

PART 3 - EXECUTION

CONSTRUCTION

Placing Dense Graded Base Aggregate

Construct Dense Graded Base as specified in WisDOT Section 305.3 of the SSHSC. Compact each base layer, including shoulder foreslopes, with equipment specified in WisDOT Section 301.3.1 of the SSHSC.

Use standard compaction conforming to WisDOT Section 301.3.4.2 of the SSHSC, unless otherwise specified herein. Final shaping of shoulder foreslopes does not require compaction.

Construct the base to the width and section the drawings show. Shape, and compact the base surface to within 0.04 feet of the drawing elevation.

Ensure there is adequate moisture in the aggregate during placing, shaping, and compacting to prevent segregation and achieve adequate compaction. Moisture condition dense graded base as necessary to achieve required density as determined by ASTM D1557.

Excavation shall be reasonably free of water prior to placement of dense graded base. Do not place dense graded base on frozen surfaces or use frozen material.

Maintain the base until paving over it, or until the DFD Project Representative accepts the work, if paving is not part of the contract.

COMPACTION

Compacting Dense Graded Base Aggregate

If using a pneumatic roller, do not exceed a compacted thickness of 6 inches per layer. For the first layer placed over a loose sandy subgrade, the Contractor may, with A/E approval, increase the compacted layer thickness to 8 inches. If using a vibratory roller, do not exceed a compacted thickness of 8 inches per layer.

The material shall be compacted to meet the following:

Test Method to determine maximum density and moisture	ASTM D1557
Relative compaction relative to the optimum	95%

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SECTION 32 91 13
SOIL PREPARATION
Based On DFD Master Specification Dated 09/09/2025

PART 1 - GENERAL

SCOPE

The work under this section shall consist of providing all work, materials, labor, equipment and supervision necessary to provide and prepare soil for seeding, sodding, and planting. Included are the following topics:

PART 1 - GENERAL

- Scope
- Related Work
- Reference Standards
- Submittals
- Soil Testing

PART 2 - PRODUCTS

- Topsoil
- Sand
- Lime
- Organic Compost
- Fertilizer
- Planting Mixture

PART 3 - EXECUTION

- Site Preparation
- Soil Preparation
- Placing Topsoil
- Placing Planting Mixture
- Soil Amendments and pH Adjustment
- Fertilizer Amendments

RELATED WORK

Applicable provisions of Division 1 govern work under this Section.
Section 32 92 18 – Seeding

REFERENCE STANDARDS

WisDNR S100 Compost Specification

SUBMITTALS

Provide copies of all quality assurance testing reports:

- Soil-testing: For native topsoil, stockpiled/stored topsoil, and imported topsoil

Topsoil Description: Contractor to provide a written description and quantity of topsoil required; as native or imported, or a breakdown of each, prior to performing landscape work on the site.

Provide product data, including applicable analytical data, for required topsoil amendments including:

- Organic Compost
- Fertilizer

SOIL TESTING

The Contractor shall retain the services of an independent soil-testing laboratory to conduct testing and analysis of existing, salvaged, and imported topsoil. The selection of the soil-testing laboratory shall be subject to approval by the Architect/Engineer.

- Soil-testing laboratory qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated, and that specializes in types of tests to be performed.

- The soil-testing laboratory shall oversee soil sampling; with depth, location, and number of samples to be approved by the Architect/Engineer. A minimum of three representative samples shall be taken,

per-acre. Samples shall be taken from varied locations to test topsoil for all landscape planting types proposed in the Contract Documents.

The Contractor shall be responsible for scheduling soil tests and shall take into account the time period needed by the soil testing laboratory to conduct tests, to process the samples, and to publish the results and recommendations, and the time needed by the Architect/Engineer to approve submittals and amendments recommended. This is typically at least a two-month process. Contractor is responsible for coordinating all testing and reporting tasks without adversely affecting the project schedule.

Contractor is responsible for paying for all costs related to testing of soil samples.

Soil Analysis: For each un-amended topsoil sample, submit for approval by the Architect/Engineer a soil analysis and a written report by a qualified soil-testing laboratory, stating existing percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; harmful material; pH; and mineral and plant-nutrient content of the soil.

Topsoil testing methods shall comply with ASTM D5268, Standard Specification for Topsoil Used for Landscaping Purposes.

Report suitability of tested soil to support turf and plant growth.

Based on the test results, provide written recommendations for soil treatments and amendments to be incorporated to support turf and plant growth. 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 topsoil.

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 recommendations for corrective action.

The Architect/Engineer reserves the right to reject improperly amended native topsoil or imported topsoil that does not meet the quality assurance specifications. If rejected, Contractor is responsible for costs of replacement, and/or amendment, and re-testing of topsoil to provide topsoil that will support turf and plant growth.

PART 2 - PRODUCTS

TOPSOIL

Naturally fertile, agricultural soil, classified as sandy loam to silty loam, capable of supporting turf and plant growth; of uniform composition throughout, without admixtures of subsoil, free of clay lumps, stones larger than 1" diameter, roots, trash and debris of any kind.

Soil-testing results shall indicate that topsoil falls within the following acceptable ranges, or can be amended to conform to the following requirements:

- pH between 5.5 -7.0
- USDA classification loam, sandy loam, clay loam
- Phosphorous (P) between 6-10 ppm
- Potassium (K) between 51-100 ppm
- Organic Matter between 5-8%
- C:N Ratio between 12:1 to 15:1
- Soluble Salts in the range of 0-2 dS/m
- Moisture Capacity of greater than 15%

SAND

Particles of natural or manufactured rock that will pass through a No. 4 sieve, and be retained on a No. 200 sieve - clean, washed, and free of toxic materials.

LIME

Agricultural limestone material containing a minimum 80 percent calcium carbonate equivalent, with a minimum 99 percent passing through No. 8 sieve, and a minimum 75 percent passing through No. 60 sieve.

ORGANIC COMPOST

Well-composted, stable, and weed-free organic matter meeting the requirements of WisDNR S100 Compost Specification.

1
2 **FERTILIZER**

3 Fertilizer: Granular, non-burning product composed of not less than fifty (50) percent slow-acting,
4 guaranteed analysis fertilizer. All fertilizers shall be delivered fully labeled according to applicable
5 regulations, bearing name, trade name or trademark of producer, along with producer's warranty.

6
7 **PLANTING MIXTURE**

8 A ratio of uniformly mixed organic compost to approved topsoil by volume: 1:4 for annual, perennial &
9 shrub plantings areas. All mixing shall be done by mechanical means subject to the approval of the
10 Architect/Engineer.

11
12 **PART 3 – EXECUTION**

13
14 **SITE PREPARATION**

15 During construction, protect all structures, utilities, sidewalks, pavements, and other facilities and existing
16 and newly installed vegetated areas from damage at all times.

17
18 Delay grading and spreading topsoil if unfavorable weather conditions may result in washouts or loss of
19 material.

20
21 **SOIL PREPARATION**

22 The following applies to all planted, seeded or sodded areas.

23
24 Newly graded subgrades: Loosen subgrade to a minimum depth of 4 inches. Remove stones larger than 1
25 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them
26 off Owner's property.

27
28 Existing vegetated areas: If planting, seeding or sodding occurs in areas unaltered or undisturbed by
29 excavating, grading, or surface soil stripping operations, prepare surface soil as follows:

30
31 Remove existing vegetation. Do not mix vegetation into surface soil. Loosen existing topsoil to a
32 minimum depth of 4 inches. Remove stones larger than 1 inch in any dimension and sticks, roots,
33 rubbish, and other extraneous matter and legally dispose of them off Owner's property.

34
35 Rough grade areas to within 1 inch of subgrade elevations. Areas shall be graded to a smooth uniform
36 surface plane with loose, uniformly fine texture. Areas shall be restored if eroded or otherwise disturbed
37 after rough grading is complete.

38
39 **PLACING TOPSOIL**

40 Areas to be seeded or sodded shall have a minimum of 4 to 6 inches of topsoil of existing, amended or
41 imported topsoil, but not less than required to meet finish grades after light rolling and natural settlement.
42 Do not spread topsoil if subgrade is frozen, muddy, or excessively wet.

43
44 If required topsoil depth is greater than 6 inches, topsoil shall be installed in lifts. Moisten the topsoil
45 surface between lifts. Allow water to thoroughly percolate through and settle and dry before rolling and
46 placing the next lift.

47
48 Limit fine grading to areas that can be seeded or sodded in the immediate future. After finish grading,
49 restore any eroded or otherwise disturbed areas before seeding or sodding.

50
51 Do not place topsoil on top of saturated or frozen subgrade soil.

52
53 **PLACING PLANTING MIXTURE**

54 The following applies to all perennial, annual and bulb planting areas.

55
56 Remove existing soil as needed to accommodate proposed planting mixture.

57
58 Provide 8 to 10 inches of planting mixture in perennial, annual and bulb planting areas.

59
60 Do not place planting mixture on top of saturated or frozen subgrade soil.

61
62 **SOIL AMENDMENTS AND pH ADJUSTMENT**

63 Provide lime, sand, or other soil amendments as recommended by soil-testing analysis. If topsoil has been
64 determined acceptable by a soil test, no amendments are needed.

1
2 Uniformly apply recommended soil amendments and incorporate into the top 4 to 6 inches of soil by tilling
3 or disking.
4

5 **FERTILIZER AMENDMENTS**

6 Provide fertilizer amendments as recommended by soil-testing analysis. If topsoil has been determined
7 acceptable by soil-testing, no fertilizer amendments are needed except in the case of lawn seeding where
8 starter fertilizer is required.
9

10 If fertilizer amendments are required for annual, perennial and shrub planting areas, uniformly add
11 amendments, and incorporate into the top 4 to 6 inches of planting mixture by tilling or disking.
12

13 **END OF SECTION**

1 **SECTION 32 92 19**

2 **SEEDING**

3 **Based On DFD Master Specification Dated 09/09/2025**

4 **PART 1 - GENERAL**

5 **SCOPE**

6 The work under this section shall consist of providing all work, materials, labor, equipment, and
7 supervision necessary to complete lawn seeding, mulching, and lawn maintenance operations. Included are
8 the following topics:

9 **PART 1 - GENERAL**

10 Scope
11 Related Work
12 Reference Standards
13 Submittals
14 Quality Assurance
15 Delivery, Storage, and Handling
16 Installation Schedule
17 Job Conditions
18 Warranty

19 **PART 2 - PRODUCTS**

20 Lawn Seed
21 Water
22 Topsoil
23 Sand
24 Fertilizer
25 Mulch
26 Erosion Control Measures
27 Amended Topsoil

28 **PART 3 - EXECUTION**

29 Site Preparation
30 Seeding
31 Mulching
32 Cleaning and Repair
33 Maintenance
34 Seeding Acceptance

35 **RELATED WORK**

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

37 Section 31 25 00 - Erosion Control

38 Section 32 91 19 – Soil Preparation

39 **REFERENCE STANDARDS**

40 Association of Official Seed Analysts (AOSA)

41 **SUBMITTALS**

42 Provide copies of all quality assurance testing reports:

43 Soil-testing: For native topsoil, stockpiled/stored topsoil, and imported topsoil

44 Topsoil Description: Contractor to provide a written description and quantity of topsoil required; as native
45 or imported, or a breakdown of each, prior to performing landscape work on the site.

46 Provide product data, including applicable analytical data, for required topsoil amendments including:

47 Organic Compost

48 Fertilizer

49 Proposed Fertilizer to be submitted prior to purchase

50 Fertilizer Label: Contractor to provide tag from product packaging

51 Proposed Seed Mix to be submitted prior to purchase

52 Seed Mix Label: Contractor to provide seed analysis tag from product packaging

Request for Inspection
Seeding Maintenance Log

DELIVERY, STORAGE, AND HANDLING

Seed shall be delivered to the site in its original, unopened container, labeled as to weight, analysis and manufacturer. Store any seed delivered in a manner safe from damage from heat, moisture, rodents, or other causes. Any seed damaged after acceptance shall be replaced by the Contractor at his / her expense.

INSTALLATION SCHEDULE

Seed during one of the following periods:

Spring Installation: May 1 to Mid-July

Fall Installation: September 1 to Mid-October

Dormant Seeding: only permitted upon written approval by DFD Construction Representative and Architect/Engineer

Coordinate installation periods with on-going maintenance requirements throughout sodding operations.

Weather Limitations: Proceed with seed installation only when existing and forecasted weather conditions permit. No seeding shall occur on frozen ground or at air temperatures lower than 32° F. Do not broadcast or drop seed when wind velocity exceeds 5 mph.

JOB CONDITIONS

During construction, protect all structures, utilities, sidewalks, pavements, and other facilities and existing and newly installed vegetated areas from damage at all times. All vegetation damaged during construction shall be treated, repaired or replaced with new material as necessary, to restore to the original condition.

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.

WARRANTY

Contractor shall warranty the establishment of a satisfactory seeded lawn for a minimum of one growing season after date of Seeding Acceptance. This assumes the Owner performs required maintenance (i.e. regular watering) after the Contractor's maintenance period is completed. Contractor shall inform Owner when required maintenance has concluded.

Satisfactory seeded lawn: At end of the warranty period, a healthy, uniform, and dense stand of grass has been established per Lawn Seeding Acceptance below.

Contractor shall re-seed and maintain lawn areas that do not comply with requirements until lawns are satisfactory at the Contractor's expense.

Contractor shall provide an additional period of lawn maintenance following any actions needed to re-seed per the warranty requirements at the Contractor's expense.

Damage to vegetated and lawn areas incurred as a result of warranty replacement operations shall be repaired by Contractor at no cost to Owner.

During the Warranty Period, damage to lawn areas not caused by Contractor shall be excluded from Warranty. Such damage shall include ruts caused by driving vehicles over lawns, excavation and backfill work in lawn areas, damage from animals, or acts of vandalism or extreme weather conditions. Where evidence of such damage exists, advise Owner in writing, stating location, cause and extent of damage. Owner, upon receipt of such notice may order Contractor to correct damage at Owner's expense to exclude damaged area from Warranty provisions and correct damage by any arrangement deemed by Owner in his/her best interest.

PART 2 - PRODUCTS

LAWN SEED

Fresh, clean, dry, new seed that meets or exceeds the minimum requirements of purity and germination stated on an independent certificate of seed analysis document according to the Association of Official Seed Analysts (AOSA) rules.

Do not use wet seed or seed that is moldy or otherwise damaged. All seed packaging shall include a seed tag that contains: the name of the seller, the lot number, seed varieties with purity and germination percentages, as well as percentage of other crop seed, weed seed, noxious weeds and inert material. Variety Not Stated (VNS) seed is not permitted.

Seed shall have been test within the last 9 months and contain the following properties:

Purity	>90%
Germination	>85%
Other Crop	<0.5%
Weed Seed	<0.5%
Noxious Weeds	None
Inert Matter	<8%

Annual ryegrass shall not be permitted in lawn seed mixtures, except as a temporary cover for erosion control.

Select a high-quality lawn seed mixture that is adapted to the local site conditions and intended use of the turf, that is contains seed types fitting within one of the following percentages:

For Sunny areas (higher levels of maintenance), proportioned by weight as follows:

Kentucky Bluegrass / Fine Fescue / Perennial Ryegrass Blend

- 60 percent Kentucky bluegrass (at least three varieties)
- 20 percent fine fescue including Chewings fescue, creeping red fescue, or hard fescue
- 20 percent perennial ryegrass

For Sun and Partial Shade areas, proportioned by weight as follows:

Kentucky Bluegrass / Fine Fescue / Perennial Ryegrass Blend

- 40 percent Kentucky bluegrass (at least two varieties)
- 40 percent fine fescue including Chewings fescue, creeping red fescue, or hard fescue
- No more than 20 percent perennial ryegrass

For Shaded areas (best for dry shade), proportioned by weight as follows:

Fine Fescue / Kentucky Blue Grass Blend

- 25 percent Creeping red fescue
- 25 percent Hard fescue
- 25 percent Chewings fescue
- 25 percent Kentucky bluegrass

WATER

Water to be free of wastewater effluent or other hazardous chemicals.

TOPSOIL

Naturally fertile, agricultural soil, classified as sandy loam to silty loam, capable of supporting turf and plant growth; of uniform composition throughout, without admixtures of subsoil, free of clay lumps, stones larger than 1" diameter, roots, trash and debris of any kind.

Soil-testing results shall indicate that topsoil falls within the following acceptable ranges, or can be amended to conform to the following requirements:

- pH between 5.5 -7.0
- USDA classification loam, sandy loam, clay loam
- Phosphorous (P) between 6-10 ppm
- Potassium (K) between 51-100 ppm
- Organic Matter between 5-8%
- C:N Ratio between 12:1 to 15:1
- Soluble Salts in the range of 0-2 dS/m
- Moisture Capacity of greater than 15%

SAND

Particles of natural or manufactured rock that will pass through a No. 4 sieve, and be retained on a No. 200 sieve; clean, washed, and free of toxic materials.

1 **FERTILIZER**

2 Fertilizer: Granular product composed of not less than fifty (50) percent slow-acting, guaranteed analysis
3 fertilizer. All fertilizers shall be delivered fully labeled according to applicable regulations, bearing name
4 and trade name or trademark of producer.

5
6 Starter Fertilizer: shall be composed of nitrogen, phosphorus and potassium with higher phosphorus ratio
7 than found in maintenance fertilizers.

8
9 Maintenance Fertilizer: shall have nutrient ratios of nitrogen, phosphorus, and potassium to support any
10 deficiencies indicated by soil-testing analysis.

11
12 All fertilizers shall be delivered fully labeled according to applicable regulations, bearing name, trade name
13 or trademark of producer, along with producer's warranty.

14 **MULCH**

15
16 Straw Mulch: Provide air-dry, clean, mildew and seed-free, salt hay or threshed straw of wheat, rye, oats, or
17 barley.

18
19 Hydro Mulch: wood fiber mulch with or without tackifier.

20
21 **EROSION CONTROL BLANKET**

22 100% biodegradable weed free wood excelsior, straw, or coconut-fiber mat enclosed in a biodegradable
23 netting stitched with biodegradable thread/yarn, (biodegradable within 12 months of installation) or net
24 free. Include manufacturer's recommended steel wire staples, 6" long or biodegradable anchoring staples,
25 T shaped with barbed head and shoulders, 6 inches. Wisconsin DOT approved Class 1 Type B Urban
26 erosion mat or similar are acceptable. Biodegradable materials are intended to avoid entrapment of animals.
27 Erosion mat shall be American Excelsior-Curlex Net-Free, Erosion Control Blanket-S32BD, Western
28 Excelsior-Excel SS-2 All Natural, Ero-Guard EG-25 (NN), Erosion Tech ETRS2BN or approved equal.

29
30 **EROSION CONTROL FIBER MESH**

31 100% biodegradable twisted jute mesh. Include manufacturer's recommended steel wire staples, 6 inches
32 long or biodegradable anchoring staples, T shaped with barbed head and shoulders, 6 inches.

33
34 **AMENDED TOPSOIL**

35 Topsoil amended in accordance with recommendations from the soil testing analysis.

36
37 **PART 3 - EXECUTION**

38
39 **SITE PREPARATION**

40 During construction, protect all structures, utilities, sidewalks, pavements, and other facilities and existing
41 and newly installed vegetated areas from damage at all times.

42
43 Delay grading and spreading topsoil if unfavorable weather conditions may result in washouts or loss of
44 material.

45
46 **SEEDING**

47 Methods of seed installation may vary at the discretion of the Contractor in order to establish and guarantee
48 a smooth, uniform quality lawn. Evenly distribute seed by sowing equal quantities in two directions at right
49 angles to each other.

50
51 Install seed mixes at manufacturer's recommended rates.

52
53 Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

54
55 Alternative methods of seeding or hydroseeding may be proposed in writing by Contractor and must be
56 approved by the A/E.

57
58 Dormant seeding may be proposed in writing by Contractor and must be approved by the A/E.

1 **MULCHING**

2 Protect seeded areas by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form
3 a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other
4 suitable equipment.

5
6 Provide seed stabilization measures erosion blanket, jute mat, tackifier, etc. to prevent erosion or
7 displacement of soils and seed on steep slopes. The use of plastic netting is prohibited.

8
9 Alternative methods of mulching or hydromulching may be proposed in writing by Contractor and must be
10 approved by the A/E.

11
12 **CLEANING AND REPAIR**

13 Waste and excess material from the seeding operation shall be promptly removed. Adjacent paved areas
14 are to be cleaned, and any damage to existing adjacent landscape areas shall be repaired.

15
16 **MAINTENANCE**

17 Contractor to provide regular watering, weeding, pest management, and trash removal services for all
18 newly seeded areas for a period of 60 (sixty) days after the date of seeding acceptance, at which time
19 maintenance duties will be taken over by the Owner.

20
21 Mowing: The first mowing shall not be performed until the lawn has grown to a height of approximately 3
22 to 4 inches. Lawn shall be mown as often as necessary to maintain a height of 2-1/2 to 4 inches. No more
23 than one third of the height of grass leaf shall be removed during any single mowing operation. The
24 mowing operation is to include trimming around obstacles and the removal of excess grass clippings.

25
26 Line trimmers shall not be used around tree trunks.

27
28 Seeding Maintenance Log: Contractor shall submit a written record to the DFD Construction
29 Representative that documents regular maintenance visits and actions performed. Failure of Contractor to
30 provide documentation of regular required landscape maintenance duties, and resultant unsuccessful lawn
31 establishment, will result in lawn re-seeding at full cost to Contractor per the seeding Warranty.

32
33 Contractor shall inform Owner when required maintenance period has concluded.

34
35 **SEEDING ACCEPTANCE**

36 The DFD Construction Representative and the Architect/Engineer shall perform inspections with the
37 Contractor at the conclusion of the installation operations to verify that seeded lawn areas have been
38 satisfactorily established.

39
40 A satisfactory installation shall meet the following requirements:

- 41 An established root system (leaf blades break before seedlings can be pulled from the soil by hand).
- 42 Uniform coverage throughout all turf areas with no bare spots larger than 5 inches by 5 inches.
- 43 No bare areas comprising more than 1% of any given 1,000 square foot area.
- 44 No deformation of the turf areas caused by mowing or other Contractor equipment.
- 45 Shall be free of weeds, disease and harmful pests.

46
47 Request for Inspection: Contractor shall submit a request for inspection to the DFD Construction
48 Representative and Architect/Engineer. The request shall be received at least 7 (seven) days before the
49 anticipated date of inspection.

50
51 Contractor shall re-seed lawn areas that do not comply with requirements and continue required
52 maintenance until lawns are satisfactory.

53
54 Any defects or imperfections appearing in whole or any part of the work caused by or due to any fault or
55 negligence on the part of the Contractor shall be corrected before the work is accepted.

56
57 Seeding work may be accepted in stages when the Contractor and Owner deem that practice to be in their
58 mutual interest. Approval must be given in writing by Owner to the Contractor verifying that work may be
59 completed in stages.

60
61 Acceptance of seeding work shall not waive any provisions of the Warranty.

62
63 **END OF SECTION**

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