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STSP'S Revised July 8, 2021 SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 5667-00-75, C of Fennimore – T Castle Rock, (USH 61 to CTH G), CTH Q, Grant County, Wisconsin as the plans show and execute the work as specified in the State of Wisconsin, Department of Transportation, Standard Specifications for Highway and Structure Construction, 2022 Edition, as published by the department, and these special provisions.

If all or a portion of the plans and special provisions are developed in the SI metric system and the schedule of prices is developed in the US standard measure system, the department will pay for the work as bid in the US standard system.

100-005 (20210708)

2. Scope of Work.

The work under this contract shall consist of excavation common, excavation rock, grading, new Structure B-22-0296, removing Structure B-22-0040, base aggregate dense, HMA pavement, culvert pipes, storm sewer, concrete curb and gutter, beam guard, permanent signing, pavement marking, and all incidental items necessary to complete the work as shown on the plans and included in the proposal and contract.

104-005 (20090901)

3. **Prosecution and Progress.**

A General

Begin work within ten calendar days after the engineer issues a written notice to do so.

Provide the start date to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the approved start date.

To revise the start date, submit a written request to the engineer at least two weeks before the intended start date. The engineer will approve or deny that request based on the conditions cited in the request and its effect on the department's scheduled resources.

The Notice to Proceed will be provided to start construction no later than April 15, 2022, unless otherwise approved by the engineer.

B Schedule of Operations

The schedule of operations shall conform to the construction staging as shown in the plans, unless the engineer approves modifications to the schedule in writing. Staged construction is needed to construct the project. The brief outline below of the construction staging schedule is not intended to dictate contractor means and methods, but is intended to be a guide for completion of the work using the staging and traffic control shown in the plans. Notify the engineer, in writing, of any proposed modification to the proposed schedule.

Balance the earthwork on a project level. Use waste material from previous stages in subsequent fill areas.

Stage 1 (activities may extend to Stage 2)

- Construct off-alignment CTH Q roadway (Station 102+00 to Station 113+00). Pave lower layer of HMA pavement.
- Construct off-alignment Homer Road roadway and intersection (Station 3+00H to Station 9+10H). Pave lower layer of HMA pavement.
- Construct new structure B-22-296.
- Complete rock excavation, including blasting if required, from Station 123+00 to Station 132+36.

Stage 2A

• Construct CTH Q roadway from Station 113+00 to Church Road. Pave lower layer of HMA pavement.

Stage 2B

• Construct CTH Q roadway connection at beginning project and from Church Road to the end of the project. Pave lower layer of HMA pavement.

Stage 3

- Remove existing structure B-22-0040.
- Construct Homer Road connection at beginning of construction and through existing CTH Q.
- Construct Church Road intersection.
- Pave upper layer of HMA pavement for entire project limits.
- Obliterate old CTH Q and Homer Road roadways.

C Fish Spawning

There shall be no instream disturbance of Castle Rock Creek/Fennimore Creek as a result of construction activity under or for this contract, from September 15 to May 15 both dates inclusive, in order to avoid adverse impacts upon the spawning of trout. Work on the new bridge abutments and abutment slopes above elevation 825.09' may proceed prior to May 15 after erosion control is installed.

Any change to this limitation will require submitting a written request by the contractor to the engineer, subsequent review and concurrence by the Department of Natural Resources in the request, and final approval by the engineer. The approval will include all conditions to the request as mutually agreed upon by WisDOT and DNR.

D Migratory Birds

Swallow or other migratory bird nests have been observed on or under the existing structure(s). All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act. The nesting season for swallows and other birds is from April 15 to August 31.

Either prevent active nests from becoming established or prevent birds from nesting by installing and/or maintaining a suitable deterrent device on the remaining structure prior to nesting activity under the bid item Installing and Maintaining Bird Deterrent System. As a last resort, apply for a depredation permit from the US Fish and Wildlife Service for work that may disturb or destroy active nests. The need for a permit may be avoided by removing the existing bridge structure prior to nest occupation by birds or clearing nests from all structures before the nests become active in early spring.

E Northern Long-eared Bat (Myotis septentrionalis)

Northern Long-eared Bats (NLEB) have the potential to inhabit the project limits because they roost in trees. Roosts may not have been observed on this project, but conditions to support the species exist. The species and all active roosts are protected by the Federal Endangered Species Act. If an individual bat or active roost is encountered during construction operations, stop work and notify the engineer and the WisDOT Regional Environmental Coordinator (REC).

In accordance to the final 4(d) rule issued for the NLEB, the department has determined that the proposed activity may affect, but will not result in prohibited take of the NLEB. The activity involves tree removal, but will not occur within 0.25 miles of a known hibernacula, nor will the activity remove a known maternity roost tree or any other tree within 150 feet of a known maternity roost tree.

If additional trees need to be removed, no Clearing shall occur without prior approval from the engineer, following coordination with the WisDOT REC. Additional tree removal beyond the area originally specified will require consultation with the United States Fish and Wildlife Service (USFWS) and may require a bat presence/absence survey. Notify the engineer if additional Clearing cannot be avoided to begin coordination with the WisDOT REC. The WisDOT REC will initiate consultation with the USFWS and determine if a survey is necessary.

Submit a schedule and description of Clearing operations with the ECIP 14 days prior to any Clearing operations. The department will determine, based on schedule and scope of work, what additional erosion control measures shall be implemented prior to the start of Clearing operations, and list those additional measures in the ECIP.

A documented NLEB hibernaculum is located in the hillside northeast of CTH Q approximately 0.4 miles from the end of the project limits. Blasting for rock excavation from Station 116+00 to Station 132+00 is prohibited prior to May 15 and after August 15.

4. Traffic.

A General

Close CTH Q, Homer Road, and Church Road for portions of the construction. Detour signing and marking is not a part of the project. Alternate closures of Homer Road and Church Road to allow for local detours.

Employ such flag persons, signs, barricades, and drums as may be necessary to safeguard or protect hazards in the work zone, such as exposed structures or drop-offs for vehicles, and direct traffic at locations where construction operations may interfere or restrict the smooth flow of traffic.

B Access

Maintain access to residential properties on CTH Q, Homer Road, and Church Road at all times. Coordinate with landowners and maintain access to field entrances as needed by landowners. Do not restrict or close access to a property without notifying the property owner, resident, or business a minimum of 48 hours in advance.

Vehicular access to a property driveway may be closed for a maximum of 24 hours in total for the installation of culverts that extend across the width of the driveway.

Vehicular access to a property driveway may be closed for a maximum of 24 hours in total for excavation to roadway subgrade.

Allow access for garbage trucks and postal services to be maintained to the greatest extent practicable during construction.

Maintain emergency vehicle access to all properties at all times.

A DNR Streambank Easement exists along Fennimore/Castle Rock Creek for public recreational use. Maintain access to the Streambank Easement as much as possible during construction. Temporary access restrictions are allowable during construction of the new bridge and removal of the existing bridge. Restore full access following the completion of the project.

C Advance Notice

Notify law enforcement and emergency personnel a minimum of 72 hours in advance of switching traffic patterns for staged construction, shoulder and lane closures, road closures, or otherwise restricting traffic flow. Include notification to the following agencies:

- Grant County: Emergency Services, Highway Commissioner
- Garbage Collection
- Fennimore School District
- Fennimore Post Office

D Traffic Operations

Maintain traffic as shown on the plans and as briefly described below.

Stage 1

- Maintain traffic on existing CTH Q and west leg of Homer Road.
- Utilize single lane closure and flagging operations on CTH Q to complete rock excavation, including blasting if required, along the west side of the road from Station 122+50 to Station 132+36.

Stage 2A

- Maintain traffic on existing CTH Q to and from the west leg of Homer Road.
- Close CTH Q from Homer Road to Church Road. Maintain access to private entrance at Station 113+00 from the west. Maintain access to CTH Q east from Church Road.

Stage 2B

- Close CTH Q west of Homer Road and east of Church Road to construct connections to the new roadway. CTH Q to remain open between Homer Road and Church Road, utilizing the existing roadway.
- Maintain traffic on existing west leg of Homer Road.

Stage 3

- Shift traffic to new CTH Q roadway. Close CTH Q for up to one week to complete Church Road intersection.
- Close Homer Road and Church Road for up to one week each to complete connections; alternate closures to allow for local detours.
- Utilize single lane closure and flagging operations on CTH Q, Homer Road, and Church Road to complete final layer of HMA pavement.

5. Holiday and Special Event Work Restrictions.

Outside the project limits, do not haul materials of any kind along or across any portion of the highway carrying CTH Q traffic, and entirely clear the traveled way and shoulders of such portions of the highway of equipment, barricades, signs, lights, and any other material that might impede the free flow of traffic during the following holiday and special event periods:

- From noon Friday, May 27, 2022 to 6:00 AM Tuesday, May 31 Memorial Day;
- From noon Friday, July 1, 2022 to 6:00 AM Tuesday, July 5, 2022 Independence Day;
- From noon Friday, September 2, 2022 to 6:00 AM Tuesday, September 6, 2022 Labor Day.

stp-107-005 (20210113)

6. Utilities.

This contract does not come under the provision of Administrative Rule Trans 220.

stp-107-066 (20080501)

Within the limits of this project there are underground and aerial facilities. Coordinate construction activities with a call to Diggers Hotline, and/or a direct call to the utilities for the underground facilities in the area as required per statutes. Use caution to ensure the integrity of underground facilities, and maintain OSHA code clearances from overhead facilities at all times.

Northern Natural Gas (Gas)

Northern Natural Gas (NNG) has a 6-inch high pressure gas line crossing CTH Q near Station 115+60. Direct conflicts with the pipeline are not anticipated. An NNG representative shall always be present when excavation work is performed within 25 feet of the pipeline. Provide NNG a Wisconsin utility one-call ticket with 48-hour notice prior to excavating in the area. Mechanical excavation is allowed up to 24 inches from the NNG pipeline. Hand excavation or hydrovac excavation is required when excavating 24 inches or closer to NNG's pipeline.

All vehicle crossings over the NNG pipeline have the following load restrictions per 1/2 axle without additional protection:

- > 24 inch cover 13,000 lbs
- \geq 36 inch cover 20,000 lbs

For all construction equipment exceeding 80,000 lbs gross vehicle weight, or exceeding the specified load restrictions, provide NNG with vehicle specifications a minimum of two days prior to anticipated activities. NNG will recommend appropriate crossing protection methods, if required.

Project contact:

Sergio Gonzalez (402) 530-2026 sergio.gonzalez@nngco.com

Project ID 5667-00-75

Scenic Rivers Energy Cooperative (Electric)

Scenic Rivers Energy Cooperative has overhead electric lines along the east side of CTH Q, crossing approximately 150' south of Homer Road and continuing along the west side of Homer Road. A second crossing of Homer Road is located approximately 350' south of Homer Road. Overhead electric lines are also located on the west side of CTH Q, starting approximately 200' south of Church Road, crossing CTH Q approximately 180' north of Church Road, and continuing easterly away from the CTH Q roadway.

Scenic Rivers Energy Cooperative plans to remove the poles at Station 100+79, RT, Station 102+17, LT, and Station 103+05, RT. New poles will be installed at approximately Station 100+57, 47' LT and Station 103+15, 100' LT to relocate the overhead lines to the west side of CTH Q at the beginning of the project, crossing CTH Q approximately 100' prior to the beginning of the project. Relocation will occur prior to construction.

Project contact:

Phil Schneider (608) 723-2121 ext. 505 pschneider@srec.net

TDS Telecom (Communication)

TDS Telecom has a buried copper cable along the west side of CTH Q at the beginning of the project, continuing along the west side of Homer Road to the beginning of construction. Buried copper is also located along the west side of CTH Q starting near Station 113+00 and continuing to the end of the project with crossings of CTH Q near Station 122+00 (where the line continues along the north side of Church Road), Station 124+40, and Station 132+00.

TDS Telecom will relocate buried copper facilities from the west side of CTH Q to the east side of CTH Q, starting near Station 114+00 through the end of the project. New facilities will be installed prior to construction.

TDS Telecom has buried fiber optic following the right of way along the west side of CTH Q from the beginning of the project to approximately Station 114+00 where the line crosses CTH Q and continues along the east right of way to the end of the project. This fiber optic line was installed fall 2020 and is approximated in the project plans. Conflicts with the buried fiber optic line are not anticipated.

Project contact:

Michael Ritchie (Mi-Tech Services, Inc.) (608) 347-7542 <u>mritchie@mi-tech.us</u>

7. Information to Bidders, U.S. Army Corps of Engineers Section 404 Permit.

The department has obtained a U.S. Army Corps of Engineers Section 404 permit. Comply with the requirements of the permit in addition to requirements of the special provisions. A copy of the permit is available from the regional office by contacting Brandan Burger at (608) 267-4019.

stp-107-054 (20210708)

8. Information to Bidders, WPDES General Construction Storm Water Discharge Permit.

The department has obtained coverage through the Wisconsin Department of Natural Resources to discharge storm water associated with land disturbing construction activities of this contract under the Wisconsin Pollutant Discharge Elimination System General Construction Storm Water Discharge Permit (WPDES Permit No. WI-S066796-1). A certificate of permit coverage is available from the regional office by contacting Brandan Burger at (608) 267-4019. Post the permit in a conspicuous place at the construction site.

stp-107-056 (20180628)

9. Environmental Protection, Dewatering.

Supplement standard spec 107.18 as follows:

If dewatering is required, the water must be treated to remove suspended solids before it is allowed to enter any waterway or wetland. Provide a settling basin, or other suitable means approved by the engineer, with sufficient capacity and size to provide an efficient means to filter the water from the dewatering operation before it is discharged back into the stream as provided in the Standard Specifications and these special provisions. Direct discharge into the stream will not be permitted. Saturated sediment shall be dewatered in an upland location within a dewatering device. Treatment practices may include the use of a polymer in conjunction with the dewatering mechanism, as approved by the engineer.

In addition, conform to dewatering guidelines of WisDNR Storm Water Management Technical Standards, Code # 1061, "Dewatering". This document can be found at the WisDNR website: http://dnr.wi.gov/topic/stormwater/documents/Dewatering_1061.pdf

All work and materials associated with water treatment and/or dewatering will be included in the Excavation for Structures bid item. This shall include furnishing all materials, excavation, maintenance, cleaning, disposal of surplus material, removal of the settling basins after completion of dewatering operations, and for furnishing all labor, tools, equipment and incidentals necessary to complete the work according to the contract.

10. Environmental Protection, Aquatic Exotic Species Control.

Exotic invasive organisms such as VHS, zebra mussels, purple loosestrife, and Eurasian water milfoil are becoming more prolific in Wisconsin and pose adverse effects to waters of the state. Wisconsin State Statutes 30.07, "Transportation of Aquatic Plants and Animals; Placement of Objects in Navigable Waters", details the state law that requires the removal of aquatic plants and zebra mussels each time equipment is put into state waters.

At construction sites that involve navigable water or wetlands, use the follow cleaning procedures to minimize the chance of exotic invasive species infestation. Use these procedures for all equipment that comes in contact with waters of the state and/or infested water or potentially infested water in other states.

Ensure that all equipment that has been in contact with waters of the state, or with infested or potentially infested waters, has been decontaminated for aquatic plant materials and zebra mussels before being used in other waters of the state. Before using equipment on this project, thoroughly disinfect all equipment that has come into contact with potentially infested waters. Guidelines from the Wisconsin Department of Natural Resources for disinfection are available at:

http://dnr.wi.gov/topic/invasives/disinfection.html

Use the following inspection and removal procedures:

- 1. Before leaving the contaminated site, wash machinery and ensure that the machinery is free of all soil and other substances that could possibly contain exotic invasive species;
- 2. Drain all water from boats, trailers, bilges, live wells, coolers, bait buckets, engine compartments, and any other area where water may be trapped;
- Inspect boat hulls, propellers, trailers and other surfaces. Scrape off any attached mussels, remove any aquatic plant materials (fragments, stems, leaves, seeds, or roots), and dispose of removed mussels and plant materials in a garbage can before leaving the area or invested waters; and
- 4. Disinfect your boat, equipment and gear by either:
 - 4.1. Washing with ~212 F water (steam clean), or
 - 4.2. Drying thoroughly for five days after cleaning with soap and water and/or high pressure water, or
 - 4.3. Disinfecting with either 200 ppm (0.5 oz per gallon or 1 Tablespoon per gallon) Chlorine for 10-minute contact time or 1:100 solution (38 grams per gallon) of Virkon Aquatic for 20- to 30-minute contact time. Note: Virkon is not registered to kill zebra mussel veligers nor invertebrates like spiny water flea. Therefore, this disinfect should be used in conjunction with a hot water (>104° F) application.

Complete the inspection and removal procedure before equipment is brought to the project site and before the equipment leaves the project site.

stp-107-055 (20130615)

11. Environmental Protection, Rusty Patched Bumble Bee.

The project is located within a high potential zone for the Rusty Patched Bumble Bee. This species is on Federally Endangered and State Special Concern lists. To the extent possible, clearing of grassy areas should be completed prior to May 1, before flowers begin to bloom.

12. Environmental Protection, Castle Rock Spring.

The Castle Rock Spring located near Station 127+00, right, is an environmentally sensitive resource, and part of a narrow cave system that crosses under CTH Q and possibly enters the hillside on the west side of CTH Q. Exercise caution when excavating in this area in order to minimize impacts to the spring and cave system.

The existing roadway shoulder near the Castle Rock Spring has a history of instability and bottom support rails were previously installed to help stabilize the area. When excavating in this area, minimize disturbance in order to preserve slope stabilization. Remove the existing guardrail and bottom support rails following SPV.0090.01 Saw and Remove Guardrail. Do not disturb existing fill slopes beyond the guardrail.

13. Erosion Control Structures.

Within three calendar days after completing the excavation for a substructure unit, place riprap or other permanent erosion control items required by the contract or deemed necessary by the engineer around the unit at a minimum to a height equivalent to the calculated water elevation resulting from a storm that occurs on the average of once every two years (Q2) as shown on the plan, or as the engineer directs.

In the event that construction activity does not disturb the existing ground below the Q2 elevation, the above timing requirements for permanent erosion control shall be waived.

stp-107-070 (20191121)

14. Notice to Contractor, Notification of Demolition and/or Renovation No Asbestos Found.

Paul M. Garvey, License Number All-117079, inspected Structure B-22-0040 for asbestos on March 27, 2019. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from: Brandan Burger, (608) 267-4019.

In accordance with NR447 and DHS159, ensure that DNR or DHS receives a completed Notification of Demolition and/or Renovation (DNR Form 4500-113 (R 4/11), or subsequent revision) via U.S. mail, hand-delivery, or using the online notification system at least 10 working days before beginning any construction or demolition. Pay all associated fees. Provide a copy of the completed 4500-113 form to Brandan Burger, (608) 267-4019 and DOT BTS-ESS attn: Hazardous Materials Specialist, PO Box 7965, Madison, WI 53707-7965. In addition, comply with all local or municipal asbestos requirements.

Use the following information to complete WisDNR form 4500-113:

- Site Name: Structure B-22-0040, CTH Q over Fennimore Creek
- Site Address: 3.8M W JCT CTH G
- Ownership Information: 1011 N. Adams St, PO Box 150, Lancaster, WI 53813
- Contact: Brandan Burger
- Phone: (608) 267-4019
- Age: 63 years old. This structure was constructed in 1958
- Area: 3113 SF of deck

Insert the following paragraph in Section 6.g.:

If asbestos not previously identified is found or previously non-friable asbestos becomes crumbled, pulverized, or reduced to a powder, stop work immediately, notify the engineer, and the engineer will notify the department's Bureau of Technical Services at (608) 266-1476 for an emergency response

as specified in standard spec 107.24. Keep material wet until it is abated or until it is determined to be non-asbestos containing material.

stp-107-125 (20120615)

15. Notice to Contractor, Removing Signs.

Grant County will remove the existing street name signs, Castle Rock Lutheran Church signs, and ATV route signs. Contact Jon Knautz, Grant County Highway Commissioner at (608) 723-2595 a minimum of 2 weeks prior to the start of construction to provide notice for sign removal.

16. Removing Structure Over Waterway Minimal Debris (B-22-0040), Item 203.0260.

Add the following to standard spec 203.3.6

In the areas of, and after, the removal of the existing bridge, restore the streambank to a condition similar to the existing adjacent topography, with grading to blend the streambank into the surrounding terrain.

17. Removing Guardrail, Item 204.0165.

Supplement the following to standard spec 204.3.2:

Do not disturb existing fill slopes beyond the finished grades shown in the plans for guardrail located from Station 126+70 to Station 129+80. If the existing fill slopes will be disturbed, saw embedded posts 6 inches below finished grade and allow the embedded portion to remain in place.

18. General Requirements for Blasting Rock.

Add the following to standard spec 205.3.7:

Perform all blasting in compliance with the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43.

Blasting Plan Submittal

Not less than two weeks before commencing blasting operations, or at any time when changes to the drilling and blasting methods are proposed, submit a Blasting Plan to the engineer for review. The blasting plan shall contain full details of the drilling and blasting patterns and controls proposed for both the controlled and production blasting. Include the following minimum information in the blasting plan:

- 1. Station limits of proposed shot.
- 2. Plan and section views of proposed drill pattern including free face, burden, blasthole spacing, blasthole diameters, blasthole angles, lift height, and subdrill depth.
- 3. Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming.
- 4. Initiation sequence of blastholes including delay times and delay system.
- 5. Manufacturer's data sheets for all explosives, primers, and initiators to be employed.

The blasting plan submittal is for quality control and record keeping purposes. Review of the blasting plan by the engineer does not relieve the contractor of responsibility for the accuracy and adequacy of the plan when implemented in the field.

Safety

Immediately notify the engineer of any incidents of fly rock, damage to any personal property, or existing roadway that is open to traffic, and any violations of the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Failure to do so shall be considered a safety violation under standard spec 107 and all work on the project may be stopped under standard spec 105.1(1).

Notify the engineer of the station, location, and 'size' of all blasts at least one hour before the blast.

Observe the entire blast area for a minimum of five minutes following a blast to guard against rock or debris fall before commencing work in the area.

The engineer has the authority to prohibit or halt the contractor's blasting operations if it is apparent that through the methods being employed, the required slopes are not being obtained in a stable condition, the safety and convenience of the traveling public is being jeopardized, or vibration levels above the allowable levels occur.

Condition Surveys

Conduct and document pre-blast and post-blast surveys of any nearby buildings or structures as required by the scaled-distance equation specified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Make right of entry arrangements with the property owners for these condition surveys. Before any blasting, make the pre-blast survey records available to the engineer for review. After completion of blasting operations, perform a post-blast survey and make these records available to the engineer for review. The contractor shall be responsible for any damage resulting from blasting.

These condition surveys shall consist of visually inspecting and recording all existing defects in the structures before and after blasting operations. Photographs and/or videotape may be used to assist in documentation. Submit a written report to the department detailing the visual and photographic investigation of potentially affected structures. This report will include copies of the pre-blast and postblast surveys and discuss any discrepancies and findings of these surveys.

If at any time during the progress of the work, the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face, within the tolerances specified, drill, blast, and excavate in short sections, not exceeding 100 feet in length, until a technique is arrived at that will produce the desired results. Extra cost resulting from this requirement shall be borne by the contractor.

Vibration Control and Monitoring

All vibration control and monitoring shall comply with Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43, Instrumentation and SPS 307.44, Control of Adverse Effects.

Whenever there is a potential for vibration damage to adjacent buildings, structures, or utilities, monitor each blast with an approved seismograph located, as approved, between the blast area and the closest structure subject to blast damage, and as close as practical to the subject structure. Peak particle velocity shall not be allowed to exceed the safe limits of the nearest structure subject to vibration damage.

A vibration specialist, approved by the engineer, shall perform vibration monitoring. The vibration specialist shall monitor vibration levels according to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 and interpret the seismograph records to ensure that the seismograph data shall be effectively utilized in the control of the blasting operations with respect to the existing structures and utilities.

According to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 consult with the owner of any structure or utility not listed in SPS 307.43 to establish maximum allowable limits on ground vibrations. In no case shall these vibration limits exceed the following criteria:

Structure Type	Maximum Peak Particle Velocity (inches/second)
Reinforced Concrete, Structures, Unoccupied	4.0
Steel Structures, Unoccupied	4.0
Buried Utilities	2.0
Wells and Aquifers	2.0
Green Concrete (Less than 7 days)	1.0

Furnish data recorded for each shot to the engineer before the next blast; the data shall include the following:

- 1. Identification of vibration monitoring instrument used.
- 2. Name of qualified observer and interpreter.
- 3. Distance and direction of recording station from blast area.
- 4. Type of ground at recording station and material on which the instrument is sitting.
- 5. Peak particle velocity and principal frequency in each component.
- 6. A dated and signed copy of records of seismograph readings.

7. A comparison of measured seismograph readings to maximum allowable readings identified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision.

If the recorded vibration data exceeds the allowable levels established in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision, immediately halt blasting operations. Submit a revised blasting plan to the engineer and do not resume blasting operations until the engineer approves the revised plan.

All costs associated with the work described herein shall be considered included in the bid item Excavation Rock.

stp-205-050 (20141107)

19. Excavation Rock, Item 205.0200.

Excavated material may be used as base aggregate dense and/or breaker run so long as the material meets the standard specifications for the base aggregate dense and breaker run bid items as included in the plans.

20. Obliterating Old Road, Item 214.0100.

Obliterating old road includes removing the existing pavement and base material to a profile depth as shown in the plans and restoring with topsoil, seed, and fertilizer.

21. Pipe Grates, Item 611.9800.S.

A Description

This special provision describes providing pipe grates on the ends of pipes.

B Materials

Furnish steel conforming to the requirements of standard spec 506.2.2.1. Furnish steel pipe conforming to the requirements of standard spec 506.2.3.6.

Furnish pipe grates galvanized according to ASTM A123.

Furnish angles and brackets galvanized according to ASTM A123.

Furnish required hardware galvanized according to ASTM A153.

C Construction

Repair pipes, rods, angles and brackets on which the galvanized coating has been damaged according to the requirements of AASHTO M36M.

D Measurement

The department will measure Pipe Grates in units of work, where one unit is one grate, completed and accepted.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
611.9800.S	Pipe Grates	EACH

Payment is full compensation for furnishing and installing all materials; and for drilling and connecting grates to pipes.

stp-611-010 (20030820)

22. Fence Safety, Item 616.0700.S.

A Description

This special provision describes providing plastic fence at locations the plans show.

B Materials

Furnish notched conventional metal "T" or "U" shaped fence posts.

Furnish fence fabric meeting the following requirements.

Color: International orange (UV stabilized)	
Roll Height:	4 feet
Mesh Opening:	1 inch min to 3 inch max
Resin/Construction:	High density polyethylene mesh
Tensile Yield:	Avg. 2000 lb per 4 ft. width (ASTM D638)
Ultimate Tensile Strength:	Avg. 3000 lb per 4 ft. width (ASTM D638)
Elongation at Break (%):	Greater than 100% (ASTM D638)
Chemical Resistance:	Inert to most chemicals and acids

C Construction

Drive posts into the ground 12 to 18 inches. Space posts at 7 feet.

Use a minimum of three wire ties to secure the fence at each post. Weave tension wire through the top row of strands to provide a top stringer that prevents sagging.

Overlap two rolls at a post and secure with wire ties.

D Measurement

The department will measure Fence Safety by the linear foot along the base of the fence, center-to-center of posts, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
616.0700.S	Fence Safety	LF

Payment is full compensation for furnishing and installing fence and posts; maintaining the fence and posts in satisfactory condition; and for removing and disposing of fence and posts at project completion. stp-616-030 (20160607)

23. Geotextile Fabric Type ES, Item 645.0115.

Provide type ES geotextile fabric conforming to standard spec 645 and conforming to the following physical properties:

Test	Method	Value ^[1]
Minimum Tensile Strength	ASTM D 4595	3,600 x 3,600lb/ft
Maximum Elongation at Required Strength	ASTM D 4595	10 x 5 %
CBR Puncture	ASTM D-6241	1,600 lbs
Trapezoidal Tear	ASTM D-4533	170 x 125 lbs
Maximum Apparent Opening Size	ASTM D 4751	No. 30 US Std sieve
Minimum Permittivity	ASTM D 4491	0.52 s ⁻¹

^[1] All numerical values represent minimum/maximum average roll values. Average test results from all rolls in a lot must conform to the tabulated values.

stp-645-040 (20171130)

24. Installing and Maintaining Bird Deterrent System 110+38, Item 999.2000.S.

A Description

This special provision describes inspecting, installing and/or maintaining approved deterrents that prevent migratory bird nesting on bridges and culverts. Swallows or other migratory birds' nests have been observed on or under the existing culvert or bridge at the station identified. All active nests (when eggs or young are present) of migratory birds are protected under the federal Migratory Bird Treaty Act.

B Materials

B.1 Hardware and Lumber

Pressure treated lumber shall conform to the requirements of standard spec 507.

Hardware and fastening devices shall be either galvanized or stainless steel. Fastening device and system must be approved by the engineer prior to installation on culverts and bridges that will remain in service after removal of deterrent systems. The method of fastening should not compromise the culvert or bridge concrete surfaces or steel protection systems. The attachment locations must be restored and repaired as needed by use of engineer approved fillers, sealers and paint systems.

B.2 Netting Materials

Exclusion netting is material either wrapped around or draped and fastened to bridge decks/abutments and culvert corners to prevent bird entry.

Furnish exclusionary netting to deter nesting in bridge decks and abutments and corners of box culverts, consisting of either:

- a. 1/2" x 1/2" or 3/4" x 3/4" knotless, flame resistant, U.V. stabilized polyethylene netting with minimum 40-pound breaking strength per strand, or engineer proved equal.
- b. Galvanized wire mesh (hardware cloth) with a wire diameter of .040 inches (19-gauge) and opening width of 1/2-inch.

Furnish 1" x 2" pressure treated lumber of equal length as the netting.

B.3 Plastic Strip Curtain

Plastic strip curtains are strips of plastic attached to vertical surfaces in areas suitable for nesting.

Furnish 3-foot wide lengths of 6 mil minimum plastic sheeting with the lower 2 feet cut into vertical strips 2 inches wide.

Furnish 1" x 2" treated wood and galvanized staples to attach plastic strips to wood to fabricate the strip curtain.

Furnish concrete screws to attach strip curtain to structure.

B.4 Corner Slope Materials

Corner slopes are pieces of curved plastic placed in corners suitable for nesting. They are particularly effective in preventing nesting in top corners of box culverts.

Furnish U.V. stabilized pre-fabricated PVC or polycarbonate corner slopes from commercial bird-deterrent manufacturers or an approved equal.

C Construction

C.1 General

If active nests are observed after construction starts, or if a trapped bird or an active nest is found, stop work that may affect birds or their nests, and notify the engineer to consult with the Wisconsin Department of Natural Resources transportation liaison at Andy Barta, at (608) 235-2955, or the department regional environmental coordinator Steve Vetsch, at (608) 785-9049.

Efforts should be made to release trapped birds, unharmed.

C.2 Nest Removal

Remove unoccupied nests prior to the beginning of the nesting season as designated in Prosecution and Progress. Nest removal involves the removal and disposal of unoccupied or partially constructed nests

without eggs or nestlings. Removing all evidence of nesting (e.g. cleaning droppings from structures) eliminates a visual cue for a potential breeding location, especially for first-time breeders. Nest removal is not a type of deterrent and does not prevent nest establishment but can delay the process. As such, it should only be used in conjunction with other methods. It cannot be used on its own to ensure compliance. However, nest removal is not required if deterrents are installed before the start of the avoidance window.

Remove nests on the structure by scraping or pressure washing prior to established avoidance windows to deter nesting. Remove only unoccupied or partially constructed nests without eggs or nestlings. Remove newly built nests every two days before eggs are laid. Nest removal is intended to be used prior to and in conjunction with other nesting deterrents.

C.3 Exclusion Netting

C.3.1 Installation

Using concrete screws, anchor lumber to bridge or culvert along perimeter of intended netting. Fasten netting to lumber until netting is held taut. Eliminate any loose pockets or wrinkles that could trap and entangle birds. Ensure the net is pulled taut in order to prevent flapping in the wind, which results in tangles or breakage at mounting points.

For culverts, attach netting at a 45-degree angle at the culvert corner so it extends at least 12" below the corner.

C.4 Plastic Curtains

C.4.1 Installation

Attach plastic curtains along the entire length of vertical surface or corner on which nest building is to be deterred. Affix plastic curtain strips to treated lumber with staples spaced a minimum of 1 foot O.C. Wrap plastic curtains around lumber prior to attaching it to the structure to reduce the likelihood of it tearing out at the staples. Screw lumber into the underside of the bridge deck or top of box culvert with concrete screws placed 24-inches O.C. minimum.

C.5 Corner Slopes

C.5.1 Installation

Attach corner slopes to the structure per the manufacturer's recommendations. Use urethane-based adhesives if manufacturer supplied hardware or adhesives are not available or no recommendations are provided. Install end caps or seal ends of corner slopes to prevent entry of birds or other animals.

C.6 Inspection and Maintenance

Inspect bird deterrent devices every 2 weeks both during and prior to construction when deterrents have been installed to exclude birds prior to nesting windows, and after large storm events or high winds. Ensure that netting is taut, that no gaps or holes have formed, and that the nets are functioning properly. Ensure that corner slopes are not cracked or otherwise damaged and are functioning properly. Ensure that curtains are undamaged, with no tears, holes, or creases. Repair any damaged or loose deterrent devices. Inspect, maintain, and repair nesting deterrents whether installed by the contractor or others. Repair, replace, supplement deterrents as necessary with materials meeting the requirements of this specification.

Remove any unoccupied or partially constructed nests without eggs or nestlings

Repair deterrents to prevent birds from attempting to nest again.

Record all inspection, removal, and maintenance activities. Provide inspection, removal and maintenance records to the engineer upon request.

C.7 Removal and Structure Repair

Maintain the deterrent until the engineer determines that the deterrent is deemed no longer necessary. Upon completion of the project, remove any remaining migratory bird deterrent from the project site. If the existing bridge or culvert is to remain after construction, restore and repair as needed by use of engineer approved fillers, sealers and paint systems.

D Measurement

The department will measure Installing and Maintaining Bird Deterrent System (Station) as a single unit at each structure, acceptably completed.

The department will measure Maintaining Bird Deterrent System (Station) as a single unit at each structure, acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
999.2000.S	Installing and Maintaining Bird Deterrent System 110+38	EACH

Payment for Installing and Maintaining Bird Deterrent System is full compensation for providing and installing deterrents that prevent migratory bird nesting; removing and disposing of unoccupied or partially constructed nests without eggs or nestlings; maintaining, repairing, replacing, supplementing, existing deterrent materials; repairing damage to structures resulting from installation of deterrents; removal and disposal of materials.

Payment for Maintaining Bird Deterrent System is full compensation for inspecting structures for the presence of migratory birds, inspecting deterrents installed by others; maintaining, repairing, replacing, and supplementing existing deterrent materials; repairing damage to structures resulting from installation of deterrents; removal and disposal of materials.

stp-999-200 (20210708)

25. Excavation Rock Special, Item SPV.0035.01.

A Description

This special provision describes excavating rock from Station 125+00 to Station 129+00, in the area of the environmentally sensitive Castle Rock Spring. To minimize impacts to the spring and cave system, limit excavation to the slopes and depths indicated in the plans to the extent possible. Perform work under this item in accordance with standard spec 205, and as hereinafter provided.

B (Vacant)

C Construction

Add the following to standard spec 205.3.7:

205.3.7.3 Blasting

- (1) If it is determined that blasting is needed in order to excavate to the appropriate depth as provided in the plans, the following requirements must be followed and are considered incidental to Excavation Rock Special. Perform blasting and monitoring work in accordance with Code of Federal Regulations (CFR), Title 29, Chapter XVII – Occupational Safety and Health Administration (OSHA), Department of Labor - Part 1926 Regulations, Current Edition and the Wisconsin Department of Safety and Professional Services (SPS), Chapters 305 and 307 as described hereinafter.
- (2) Not less than two weeks before commencing blasting operations, or at any time when changes to the drilling and blasting methods are proposed, submit a Blasting Plan to the engineer for review. The blasting plan shall contain full details of the drilling and blasting patterns and controls proposed for both the controlled and production blasting. Include the following minimum information in the blasting plan:
 - 1. Name, license number, experience of blaster(s), and classification in accordance with SPS Chapter 305.20 and 307. A minimum of a Class 6 blaster is required for blasting from Station 125+00 to Station 129+00.
 - 2. Station limits of proposed shot.
 - 3. Plan and section views of proposed drill pattern including free face, burden, blasthole spacing, blasthole diameters, blasthole angles, lift height, and subdrill depth.
 - 4. Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming.
 - 5. Initiation sequence of blastholes including delay times and delay system.
 - 6. Manufacturer's data sheets for all explosives, primers, and initiators to be employed.
 - 7. Flyrock control plan.
 - 8. Proposed "Shot Log" for individual blasts.

The blasting plan submittal is for quality control and record keeping purposes. Review of the blasting plan by the engineer does not relieve the contractor of responsibility for the accuracy and adequacy of the plan when implemented in the field.

- (3) Blasting will be limited to a period between 8:00 am and 5:00 pm, or as otherwise approved by the engineer.
- (4) Immediately notify the engineer of any incidents of fly rock, damage to any personal property, or existing roadway that is open to traffic, and any violations of the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Failure to do so shall be considered a safety violation under standard spec 107 and all work on the project may be stopped under standard spec 105.1(1).
- (5) Notify the engineer of the station, location, and 'size' of all blasts at least one hour before the blast.
- (6) Observe the entire blast area for a minimum of five minutes following a blast to guard against rock or debris fall before commencing work in the area.
- (7) The engineer has the authority to prohibit or halt the contractor's blasting operations if it is apparent that through the methods being employed, the required slopes are not being obtained in a stable condition, the safety and convenience of the traveling public is being jeopardized, or vibration levels above the allowable levels occur.
- (8) Conduct and document pre-blast and post-blast surveys of any nearby buildings or structures as required by the scaled-distance equation specified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43. Make right of entry arrangements with the property owners for these condition surveys. Before any blasting, make the pre-blast survey records available to the engineer for review. After completion of blasting operations, perform a post-blast survey and make these records available to the engineer for review. The contractor shall be responsible for any damage resulting from blasting. These condition surveys shall consist of visually inspecting and recording all existing defects in the structures before and after blasting operations. Photographs and/or videotape may be used to assist in documentation. Submit a written report to the department detailing the visual and photographic investigation of potentially affected structures. This report will include copies of the pre-blast and post-blast surveys and discuss any discrepancies and findings of these surveys.
- (9) Conduct and document pre-blast and post-blast surveys of the adjacent Castle Rock Spring at the opening of the spring. After completion of blasting operations, perform a post-blast survey and make these records available to the engineer for review. These condition surveys shall consist of visually inspecting and recording all existing characteristics of the Castle Rock Spring before and after blasting operations. Note indicators of a possible cave-in or blockage, such as changes in stream flow at the opening of the spring or the presence of rock debris. Photographs and/or videotape may be used to assist in documentation. Submit a written report to the department detailing the visual and photographic investigation of the Castle Rock Spring. This report will include copies of the pre-blast and post-blast surveys and discuss any discrepancies and findings of these surveys. If at any time during the progress of the work, a cave is exposed, or monitoring indicates impacts to the spring or cave system, immediately stop work in the area and notify the construction engineer, Grant County, and Wisconsin DNR to determine next course of action.
- (10) If at any time during the progress of the work, the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face, within the tolerances specified, drill, blast, and excavate in short sections, not exceeding 100 feet in length, until a technique is arrived at that will produce the desired results. Extra cost resulting from this requirement shall be borne by the contractor.
- (11) All vibration control and monitoring shall comply with Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43, Instrumentation and SPS 307.44, Control of Adverse Effects.
- (12) The amplitude/frequency vibration monitor shall be an Instantel Blastmate DS677 or equivalent, available from Sobie & Associates, 1200 Pratt Avenue, Elk Grove Village, Illinois 60003, phone (708) 473-7333. This instrument shall be capable of measuring, recording, and producing a hard copy of the frequency and peak particle velocity in three mutually perpendicular axes ("vector sum" instrumentation is not allowed). The instrument shall be capable of measuring Linear Scale air blast pressure (other weighting systems, such as A- or C-scale are not allowed). The instrument must also be capable of plotting the measured vibration level against the OSM criteria or be capable of reporting

the frequency and displacement of each vibration event. The Contractor shall submit documentation of the last calibration of the instrument. Calibration should be in accordance with SPS Section 307.43.

- (13) Whenever there is a potential for vibration damage to adjacent buildings, structures, utilities, or the Castle Rock Spring, monitor each blast with an approved seismograph located, as approved, between the blast area and the closest structure or environmental resource subject to blast damage, and as close as practical to the subject structure or environmental resource. Peak particle velocity shall not be allowed to exceed the safe limits of the nearest structure or environmental resource subject to vibration damage.
- (14) A vibration specialist, approved by the engineer, shall perform vibration monitoring. The vibration specialist shall monitor vibration levels according to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 and interpret the seismograph records to ensure that the seismograph data shall be effectively utilized in the control of the blasting operations with respect to the existing structures and utilities.
- (15) According to the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 consult with the owner of any structure or utility not listed in SPS 307.43 to establish maximum allowable limits on ground vibrations. In no case shall these vibration limits exceed the following criteria:

Structure Type	Maximum Peak Particle Velocity (inches/second)
Reinforced Concrete, Structures, Unoccupied	4.0
Steel Structures, Unoccupied	4.0
Buried Utilities	2.0
Wells and Aquifers	2.0
Green Concrete (Less than 7 days)	1.0

- (16) Furnish data recorded (shot log) for each shot to the engineer before the next blast. No blasting will be allowed until the shot log from the previous blast has been submitted to the engineer. The shot log shall include the following data:
 - 1. Location of the shot by station and offset.
 - 2. Plan view of the drill pattern including free face, burden, hole spacing, diameters and angles.
 - 3. Section view showing type and amount of explosives, primers, initiators, location and depth of stemming, lift height, and subdrill depth.
 - 4. Initiation sequence of holes including cumulative delay times and delay system.
 - 5. Total pounds of explosives used.
 - 6. Identification of vibration monitoring instrument used.
 - 7. Name of qualified observer and interpreter.
 - 8. Distance and direction of recording station from blast area.
 - 9. Type of ground at recording station and material on which the instrument is sitting.
 - 10. Peak particle velocity and principal frequency in each component.
 - 11. A dated and signed copy of records of seismograph readings.
 - 12. A comparison of measured seismograph readings to maximum allowable readings identified in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision.
- (17) If the recorded vibration data exceeds the allowable levels established in the Wisconsin Administrative Code Department of Safety and Professional Services SPS 307.43 or as specified in this special provision, immediately halt blasting operations. Submit a revised blasting plan to the engineer and do not resume blasting operations until the engineer approves the revised plan.

D Measurement

The department will measure Excavation Rock Special by the cubic yard acceptably completed according to standard spec 205.4.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER DESCRIPTION

Payment is full compensation for the work specified in the special provision and according to standard spec 205.5, including all required blasting materials and monitoring equipment.

26. Top Mount Grate 48-Inch, Item SPV.0060.01.

A Description

This special provision describes furnishing and installing a top mount grate with 48-inch diameter opening.

B Materials

Furnish a Haala CG48TM or a J.R. Hoe LDR-48 assembly galvanized steel top mount grate with a 48-inch diameter opening or an approved equal.

C Construction

Install grate on top of 48-inch opening manhole riser following standard spec 611.3 and in accordance with manufacturer specifications.

D Measurement

The department will measure Top Mount Grate 48-Inch by the each acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Top Mount Grate 48-Inch	EACH

Payment is full compensation for furnishing and installing each Top Mount Grate 48-Inch, including disposing of any surplus materials, fasteners, risers, and materials necessary to complete the work.

27. Select Crushed Material for Travel Corridor, Item SPV.0195.01.

A Description

This special provision describes furnishing and placing select crushed material to fill voids to create a wildlife travel corridor as shown in the plans at structure B-22-296 adjacent to Fennimore Creek.

B Materials

Furnish select crushed material according to the pertinent requirements of standard spec 312. Material shall be clean and substantially free from material passing the No. 4 (4.75mm) sieve.

C Construction

Place the material after the extra-heavy riprap has been completed and within the limits shown on the plans for Select Crushed Material for Travel Corridor. Place material such that voids in the finished surface are three inches or less in any dimension.

D Measurement

The department will measure Select Crushed Material for Travel Corridor by the ton acceptably completed.

E Payment

The department will pay for measured quantities at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0195.01	Select Crushed Material for Travel Corridor	TON

Payment for Select Crushed Material for Travel Corridor is full compensation for providing, placing, and shaping the material.