

Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 1060-53-70, Various Noise Wall Locations, Locations on STN per Annual Plan, Various Highways, Southeast Regionwide, 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 (20220107)

2. Scope of Work.

The work under this contract shall consist of spot painting, replace support brackets, installation of steel angles, concrete surface repair, post replacement, panel replacement, traffic control, erosion control, 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.

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

Provide the time frame for construction of the project within the 2023 construction season to the engineer in writing within a month after executing the contract but at least 14 calendar days before the preconstruction conference. Assure that the time frame is consistent with the contract completion time. Upon approval, the engineer will issue the notice to proceed within ten calendar days before the beginning of the approved time frame.

To revise the time frame, submit a written request to the engineer at least two weeks before the beginning of the intended time frame. 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 issued such that work shall start no later than June 5, 2023, unless otherwise approved by the engineer.

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.

Contractor Coordination

Hold weekly scheduling meetings to discuss the near-term schedule activities, address any long-term scheduling issues, and discuss any relevant technical issues. Develop a rolling three-week schedule identifying the previous week worked and a two week look ahead. Provide sufficient detail to include actual and planned activities and all the subcontractors for offsite and construction activities, addressing all activities including ramp and lane closure schedules to be performed and identifying issues requiring engineering action or input.

General

Existing street light poles, hydrants, signs, and other utility poles are to remain in place during construction unless otherwise noted in the plans. Conduct an on-site visit prior to bidding to determine any special measures required for proper clearance between trees, hydrants, poles and signs and the equipment to construct the noise wall. No additional compensation will be made.

Excavated material and cleared material shall be removed from the project immediately or be stockpiled on upland areas an adequate distance away from wetlands, storm sewer inlets, floodplains, and waterways, as determined by the engineer.

The contractor shall use only equipment that will not damage existing pavement. The contractor shall be responsible for damage to pavement adjacent to the project area and shall repair any damage for no additional compensation.

Do not park or store equipment, contractor's and personal vehicles or construction materials within the clear zone or on any roadway carrying traffic during working and non-working hours except at locations and periods of time approved by the engineer.

Freeway and Ramp Work Restrictions

Definitions

The following definitions apply to this contract for work restrictions:

System Ramps: Freeway to freeway ramps

Service Ramps: Freeway to/from local road ramps

Weekday Peak Hours

5:30 AM – 7:00 PM Monday, Tuesday, Wednesday, Thursday

5:30 AM – 11:00 PM Friday

Weekday Off-Peak Hours

7:00 PM – 9:30 PM Monday, Tuesday, Wednesday, Thursday

Weekend Peak Hours

8:00 AM – 11:00 PM Saturday

8:00 AM – 7:00 PM Sunday

Weekend Off-Peak Hours

7:00 PM – 9:30 PM Sunday

Nighttime Hours

9:30 PM – 5:30 AM (Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)

11:00 PM – 8:00 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

System Ramp Closure Hours

11:00 PM – 4:30 AM (Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)

11:00 PM – 6:00 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

Service Ramp Closure Hours

9:00 PM – 6:00 AM (Sunday PM to Monday AM, Monday PM to Tuesday AM, Tuesday PM to Wednesday AM, Wednesday PM to Thursday AM, Thursday PM to Friday AM)

10:30 PM – 8:30 AM (Friday PM to Saturday AM, Saturday PM to Sunday AM)

Freeway and Ramp Closure Restrictions

No full freeway closures are allowed.

Do not close freeway lanes (including auxiliary lanes, system ramps, service ramps and CD roadway system) and ensure the roadway is entirely clear for traffic during Weekday Peak Hours and Weekend Peak Hours.

Follow standard details and traffic control details for closures. If plan details are not provided in the traffic control plan, furnish plans for review by the engineer so that approval, or disapproval, is obtained at least three business days prior to any closure.

Local Road Work Restrictions

Definitions

The following definitions apply to this contract for local street closure restrictions:

Peak Hours

6:00 AM – 9:00 AM Monday, Tuesday, Wednesday, Thursday, Friday

3:00 PM – 7:00 PM Monday, Tuesday, Wednesday, Thursday, Friday

11:00 AM – 8:00 PM Saturday

1:00 PM – 5:00 PM Sunday

Off-Peak Hours

9:00 AM – 3:00 PM Monday, Tuesday, Wednesday, Thursday, Friday

7:00 PM – 6:00 AM Monday, Tuesday, Wednesday, Thursday

7:00 PM – 11:00 AM Friday PM to Saturday AM

8:00 PM – 1:00 PM Saturday PM to Sunday AM

5:00 PM – 6:00 AM Sunday PM to Monday AM

Local Road Closure Restrictions

No full local road closures are allowed.

Do not close local road traffic lanes and ensure that all local road traffic lanes are entirely clear for traffic during Peak Hours. Provide a minimum of one lane in each direction of the local road that is entirely clear for traffic during Off-Peak Hours.

Follow plan details and standard details for closures. Lane restrictions beyond that shown on the traffic control plans must be approved by the engineer. If plan details are not provided in the traffic control plan, furnish plans for review by the engineer so that approval, or disapproval, is obtained at least three business days prior to any closure.

4. Lane Rental Fee Assessment.

A General

The contract designates some lane closures to perform the work. The contractor will not incur a Lane Rental Fee Assessment for closing lanes during the allowable lane closure times. The contractor will incur a Lane Rental Fee Assessment for each lane closure outside of the allowable lane closure times. If a lane is obstructed at any time due to contractor operations, it is considered a closure. The purpose of lane rental is to enforce compliance of lane restrictions and discourage unnecessary closures.

The allowable lane closure times are shown in the Traffic article.

Submit the dates of the proposed lane, ramp, and roadway restrictions to the engineer as part of the progress schedule.

Coordinate lane, ramp, and roadway closures with any concurrent operations on adjacent roadways within 3 miles of the project. If other projects are in the vicinity of this project, coordinate lane closures to run concurrent with lane closures on adjacent projects when possible. When lane closures on adjacent projects extend into the limits of this project, Lane Rental Fee Assessments will only occur if the closure facilitates work under this contract.

B Lane Rental Fee Assessment

The Lane Rental Fee Assessment incurred for each lane closure and each ramp closure, per direction of travel, is as follows:

- Nighttime or Off-Peak freeway/expressway lane closure – \$X,XXX per lane, per direction of travel, per hour broken into 15 minute increments
- Nighttime or Off-Peak system ramp closure – \$X,XXX per individual ramp closure, per hour broken into 15 minute increments
- Nighttime or Off-Peak service ramp closure – \$X,XXX per individual ramp closure, per hour broken into 15 minute increments
- Off Peak local roadway lane closure - \$X,XXX per lane, per direction of travel, per hour broken into 15-minute increments

The Lane Rental Fee Assessment represents a portion of the cost of the interference and inconvenience to the road users for each closure. All lane, roadway, or ramp closure event increments 15 minutes and less will be assessed as a 15-minute increment.

The engineer, or designated representative, will be the sole authority in determining time period length for the Lane Rental Fee Assessment.

Lane Rental Fee Assessments will not be assessed for closures due to crashes, accidents or emergencies not initiated by the contractor.

The department will assess Lane Rental Fee Assessment by the dollar under the administrative item Failing to Open Road to Traffic. The total dollar amount of Lane Rental Fee Assessment will be computed by multiplying the Lane Rental Assessment Rate by the number of 15-minute increments of each lane closure event as described above.

Lane Rental Fee Assessment will be in effect from the time of the Notice to Proceed until the department issues final acceptance. If interim completion time or contract time expires before the completion of specified work in the contract, additional liquidated damages will be assessed as specified in standard spec 108.11 or as specified within this contract.

stp-108-070 (20161130)

5. Traffic.

Coordinate traffic requirements under this contract with other ongoing department and local community construction projects. Refer to the 'Other Contracts' article in these special provisions for a list of known projects. The contractor for this project is responsible for coordinating with other contractors for traffic control implementation.

Provide the Wisconsin State Patrol, Milwaukee County Sheriff's Department, the Waukesha County Sheriff's Department, and the engineer a current telephone number with which the contractor or his representative can be contacted during non-working hours in the event a safety hazard develops.

Follow plan details for closures. If plan details are not provided in the traffic control plan, or for any traffic control change requests, furnish plans for review by the engineer a minimum of two weeks prior to the implementation so that approval, or disapproval, is obtained at least three days prior to lane or ramp closures.

Obtain prior approval from the engineer for the locations of egress or ingress for construction vehicles to prosecute the work.

Do not disturb, remove, or obliterate any traffic control signs, advisory signs, sand barrel array, shoulder delineators or beam guard in place along the traveled roadways without the approval of the engineer.

Portable Changeable Message Signs (PCMS)

Obtain acceptance from the engineer regarding the wording of all messages on portable changeable message signs prior to placing the message. PCMS shall be in place with the appropriate message 5 business days in advance of system ramp closures and 3 business days in advance of service ramp closures.

Ramp Closures

Do not close consecutive entrance ramps or consecutive exit ramps unless it is shown in the traffic control plans or approved by the engineer.

Do not close any ramps that are being used for an active detour route.

Detours – PENDING

Provide signed detour routes, as shown in the plans, that are fully free of construction during all system ramp closures. Install required traffic control and detour signs as shown in the plans at least 14 calendar days prior to beginning stage construction; remove the detour after completion of the project. Cover advance-warning signs and detour signs until work begins

IH XX XX (X-X System Ramp) Closure Detour:

XX traffic on IH XB will be detoured to XXXXX, travel southwest on XXXXX Road, then travel south on XXXX Street, then enter IH XX XB at XXXXX Avenue.

Wisconsin Lane Closure System Advance Notification

Provide the following advance notification to the engineer for incorporation into the Wisconsin Lane Closure System (LCS).

TABLE 108-1 CLOSURE TYPE AND REQUIRED MINIMUM ADVANCE NOTIFICATION

Closure type with height, weight, or width restrictions (available width, all lanes in one direction < 16 feet)	MINIMUM NOTIFICATION
Lane and shoulder closures	7 calendar days
Full roadway closures	7 calendar days
Ramp closures	7 calendar days
Detours	7 calendar days
Closure type without height, weight, or width restrictions (available width, all lanes in one direction ≥ 16 feet)	MINIMUM NOTIFICATION
Lane and shoulder closures	3 business days
Ramp closures	3 business days
Modifying all closure types	3 business days

Discuss LCS completion dates and provide changes in the schedule to the engineer at weekly project meetings in order to manage closures nearing their completion date.

6. Holiday and Special Event Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying traffic for IH 41 and ramps, IH 94 and ramps, and IH 894 ramps, 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 26, 2023 to 6:00 AM Tuesday, May 30, 2023 for Memorial Day;
- From noon Friday, June 30, 2023 to 6:00 AM Wednesday, July 5, 2023 for Independence Day;
- From noon Friday, September 1, 2023 to 6:00 AM Tuesday, September 5, 2023 for Labor Day..

stp-107-005 (20210113)

7. Utilities.

This contract comes under the provision of Administrative Rule Trans 220.

stp-107-065 (20080501)

There are underground and overhead utility facilities located within the project limits. There are no utility conflicts anticipated for this project.

Coordinate construction activities with a call to Digger's Hotline or a direct call to the utilities that have facilities in the area as required per statutes. Use caution to ensure the integrity of underground and overhead facilities.

Bidders are advised to contact each utility company listed in the plans prior to preparing their bids, to obtain current information on the status of any utility within the project work limits.

Known utilities on the project are as follows:

AT&T Local Network – Communications has overhead and underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-40

- An underground crossing approximately 140 feet east of S. 6th Street

Noise Wall N-40-41

- An underground crossing approximately 140 feet east of S. 6th Street
- An overhead crossing approximately 145 feet north of W. Waterford Avenue

Noise Wall N-40-78

- An underground crossing along W. Schlinger Avenue

ATC Management – Electric has overhead facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-40

- An overhead crossing approximately 50 feet north of W. Waterford Avenue at north end of noise wall

Noise Wall N-40-41

- An overhead crossing approximately 150 feet east of railroad tracks at southwest end of noise wall
- An overhead crossing approximately 50 feet north of W. Waterford Avenue

Noise Wall N-40-42

- An overhead crossing at southwest end of noise wall

Noise Wall N-40-43

- An overhead crossing approximately 60 feet south of W. Van Norman Avenue at southwest end of noise wall

CenturyLink Communications – Communications has overhead and underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- Underground along the west side of the noise wall

Noise Wall N-40-40

- Underground along the east side of the noise wall

Noise Wall N-40-43

- Underground along the east side of the noise wall

Noise Wall N-40-46

- Underground along the west side of the noise wall

Noise Wall N-40-47

- An underground crossing at the north end of the noise wall

Noise Wall N-04-78

- An underground crossing along W. Schlinger Avenue

City of Milwaukee – Electric has overhead and underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-08

- Street lighting along S 5th Street on the west side of the noise wall

Noise Wall N-40-33

- Street lighting along S 3rd Street on the east side of the noise wall

Noise Wall N-40-43

- Underground conduit crossing along S 13th Street

Noise Wall N-40-47

- Street lighting along S 16th Street on the east side of the noise wall

City of Milwaukee – Sewer has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- Sanitary sewer crossing approximately 1175 feet south of W. College Avenue

Noise Wall N-40-34

- Sanitary and storm sewer crossings along W. Bobolink Avenue

Noise Wall N-40-41

- Sanitary and storm sewer crossings along S. 6th Street

Noise Wall N-40-42

- Sanitary sewer crossing along S. 15th Street

Noise Wall N-40-43

- Sanitary and storm sewer crossings along S. 13th Street
- Sanitary sewer crossing along S. 15th Street

Noise Wall N-40-46

- Sanitary and storm sewer crossings along W. Edgerton Avenue
- Sanitary sewer crossing approximately 1000 feet south of W. Layton Avenue

Noise Wall N-40-47

- Sanitary and storm sewer crossings along W. Edgerton Avenue
- Sanitary sewer crossing approximately 1000 feet south of W. Layton Avenue

City of Milwaukee – Water has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-08

- Water line crossing along W. Morgan Avenue
- Water line crossing along W. Warnimont Avenue

Noise Wall N-40-34

- Water line crossing along W. Bobolink Avenue

Noise Wall N-40-40

- Water line crossing along W. Norwich Street

Noise Wall N-40-41

- Water line crossing along W. Norwich Street
- Water line crossing along S. 6th Street

Noise Wall N-40-43

- Water line crossing along S. 13th Street

Noise Wall N-40-46

- Water line crossing along W. Edgerton Avenue

Noise Wall N-40-47

- Water line crossing along W. Edgerton Avenue

City of West Allis – Roadways has facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-17

- W. Oklahoma Avenue, a 4-lane divided urban roadway, passes below the noise wall

Noise Wall N-40-78

- W. Schlinger Avenue, a 2-lane urban roadway, passes below the noise wall

City of West Allis – Sewer has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-17

- Sanitary and storm sewer crossings at W. Dakota Street

Noise Wall N-40-78

- Sanitary and storm sewer along S. 100th Street on the west side of the noise wall

City of West Allis – Street Lighting has facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-17

- Street lighting along S. 101st Street on the west side of the noise wall

Noise Wall N-40-78

- Street lighting along S. 100th Street on the west side of the noise wall

City of West Allis – Water has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-17

- Water lines along S. 101st Street on the west side of the noise wall

Noise Wall N-40-78

- Water lines along S. 100th Street on the west side of the noise wall

Level 3 Communications – Communications has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- Underground along the west side of the noise wall

Noise Wall N-40-40

- Underground along the east side of the noise wall

Noise Wall N-40-43

- Underground along the east side of the noise wall

Noise Wall N-40-46

- Underground along the west side of the noise wall

Noise Wall N-40-47

- An underground crossing at the north end of the noise wall

Milwaukee Metro Sewerage District (MMSD) – Sewer has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-42

- An underground crossing along S. 13th Street

Noise Wall N-40-43

- An underground crossing along S. 13th Street

Spectrum – Communications has overhead and underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- Overhead along the west side of the noise wall

Noise Wall N-40-08

- Overhead along the west side of the noise wall

Noise Wall N-40-40

- Overhead along the east side of the noise wall

Noise Wall N-40-42

- Overhead crossing at approximately 170 feet west of S. 14th Street

Noise Wall N-40-43

- Overhead crossing at approximately 170 feet west of S. 14th Street

Noise Wall N-40-46

- Underground along the west side of the noise wall from W. Halsey Avenue to W. Holmes Court

- Overhead along the west side of the noise wall from W. Holmes Court to W. Edgerton Avenue
- Underground along the west side of the noise wall from W. Edgerton Avenue to the south end of the noise wall

Noise Wall N-40-47

- Underground along the east side of the noise wall along S. 15th Place

Noise Wall N-67-01

- Overhead along the southwest side of the noise wall

TDS Metrocom – Communications has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-40

- An underground crossing along S. 6th Street

Noise Wall N-40-41

- An underground crossing along S. 6th Street

Village of Menomonee Falls – Sewer has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-67-01

- Underground sanitary and storm sewers along Jefferson Avenue on the southwest side of the noise wall

Village of Menomonee Falls – Water has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-67-01

- Underground water line along Jefferson Avenue on the southwest side of the noise wall

WE Energies – Electric has overhead and underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- Overhead along the west side of the noise wall

Noise Wall N-40-08

- Overhead along the west side of the noise wall

Noise Wall N-40-34

- Overhead crossing along W. Bobolink Avenue

Noise Wall N-40-40

- An overhead crossing approximately 50 feet north of W. Waterford Avenue

Noise Wall N-40-41

- An overhead crossing approximately 50 feet north of W. Waterford Avenue

Noise Wall N-40-42

- An overhead crossing at approximately 170 feet west of S. 14th Street

Noise Wall N-40-43

- An overhead crossing at approximately 170 feet west of S. 14th Street

Noise Wall N-40-46

- Underground along the west side of the noise wall from W. Halsey Avenue to approximately 550 feet north of W. Edgerton Avenue
- Overhead along the west side of the noise wall from approximately 550 feet north of W. Edgerton Avenue to the south end of the noise wall

Noise Wall N-40-47

- Underground along the east side of the noise wall from W. Edgerton Avenue to W. Abbott Avenue
- Overhead along the east side of the noise wall from W. Abbott Avenue to the south end of the noise wall

Noise Wall N-67-01

- Overhead along the southwest side of the noise wall

WE Energies – Gas has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-08

- A crossing along W. Warnimont Avenue

Noise Wall N-40-41

- A crossing along W. Norwich Street
- A crossing along S. 6th Street

Noise Wall N-40-43

- A crossing along S. 13th Street

Noise Wall N-40-46

- A crossing along W. Edgerton Avenue

Noise Wall N-40-47

- A gas crossing along W. Edgerton venue

West Allis – West Milwaukee School District – Communications has underground facilities within the construction limits. The existing facilities are located as follows:

Noise wall N-40-17

- Underground crossing approximately 330' south of W Dakota Street

West Shore Pipe Line – Gas has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-06

- An underground crossing at the south end of the noise wall

WIN Technology – Communications has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-34

- Underground along the west side of the noise wall

Noise Wall N-67-01

- Underground along the southwest side of the noise wall

WisDOT ATR Pull Boxes – Electric has underground facilities within the construction limits. The existing facilities are located as follows:

Noise Wall N-40-17

- A pull box located at the north end of the noise wall

Noise Wall N-40-34

- A pull box located at the north end of the noise wall

Noise Wall N-40-78

- A pull box located at the south end of the noise wall

Wisconsin Department of Transportation – Communication has facilities within the construction limits. The existing utilities are located as follows:

Noise Wall N-40-06

- Digital message sign and power box approximately 810' south of W College Avenue

Noise wall N-40-47

- Digital message sign and power box at approximately 125' south of W Edgerton Avenue

Wisconsin Department of Transportation – Street Lighting has overhead and underground facilities within the construction limits. The existing utilities are located as follows:

Noise Wall N-40-06

- Freeway lighting along the noise wall

Noise Wall N-40-08

- Freeway lighting along the noise wall

Noise Wall N-40-17

- Freeway lighting along the noise wall

Noise Wall N-40-33

- Freeway lighting along the noise wall

Noise Wall N-40-34

- Freeway lighting along the noise wall

Noise Wall N-40-40

- Freeway lighting along the noise wall

Noise Wall N-40-41

- Freeway lighting along the noise wall

Noise Wall N-40-42

- Freeway lighting along the noise wall

Noise Wall N-40-43

- Freeway lighting along the noise wall

Noise Wall N-40-46

- Freeway lighting along the noise wall

Noise wall N-40-47

- Freeway lighting along the noise wall

Noise Wall N-67-01

- Freeway Lighting along the noise wall

8. Other Contracts

Coordinate work according to standard spec 105.5.

Modifications to the traffic control plan may be required by the engineer to be safe and consistent with adjacent work by others.

It is expected that routine maintenance by the city and county personnel may be required at certain times concurrently with the work being done under this contract.

The following projects may be under construction concurrently with the work under this contract.

Coordinate activities, detours, work zone traffic control, roadway and lane closures, and other work items as required with these other contracts.

- Project XXXX-XX-XX
IH XX
XXXXXXXX to XXXXXXXX
WisDOT contact is XXX XXXXXX, (XXX) XXX-XXXX, XXX.XXXXXX@dot.wi.gov

9. Notice to Contractor – Airport Operating Restrictions

Fill out the FAA Notice Criteria tool for all permanent structure (bridge, light pole, etc.) or equipment (crane, etc.) used during construction.

<https://oeaaa.faa.gov/oeaaa/external/portal.jsp>

If required by the Notice Criteria tool, and for all crane or construction equipment higher than 200 feet above the ground, submit completed form 7460-1 (Notice of Proposed Construction or Alteration) to the Federal Aviation Administration (FAA) at least 45 days before starting construction.

Contact Levi Eastlick, (608) 267-5018, WisBOA airspace/tall structure manager for assistance submitting forms.

sef-107-020 (20171004)

10. Structure Overcoating Cleaning and Priming N-40-06, Item 517.3001.S.01; Structure Overcoating Cleaning and Priming N-40-17, Item 517.3001.S.02; Structure Overcoating Cleaning and Priming N-40-33, Item 517.3001.S.03; Structure Overcoating Cleaning and Priming N-40-34, Item 517.3001.S.04; Structure Overcoating Cleaning and Priming N-40-40, Item 517.3001.S.05; Structure Overcoating Cleaning and Priming N-40-41, Item 517.3001.S.06; Structure Overcoating Cleaning and Priming N-40-42, Item 517.3001.S.07; Structure Overcoating Cleaning and Priming N-40-43, Item 517.3001.S.08; Structure Overcoating Cleaning and Priming N-40-46, Item 517.3001.S.09; Structure Overcoating Cleaning and Priming N-40-47, Item 517.3001.S.10; Structure Overcoating Cleaning and Priming N-67-01, Item 517.3001.S.11.

A Description

This special provision describes cleaning and painting with two or three coats of paint the metal surfaces.

A.1 Areas to be Cleaned and Painted

Structure N-40-06

1. Three Coat Area: 15 SF with SP 11 cleaning.

Structure N-40-17

1. Three Coat Area: 60 SF with SP 11 cleaning.

Structure N-40-33

1. Three Coat Area: 30 SF with SP 11 cleaning.

Structure N-40-34

1. Three Coat Area: 40 SF with SP 11 cleaning.

Structure N-40-40

1. Three Coat Area: 15 SF with SP 11 cleaning.

Structure N-40-41

1. Three Coat Area: 20 SF with SP 11 cleaning.

Structure N-40-42

1. Three Coat Area: 25 SF with SP 11 cleaning.

Structure N-40-43

1. Three Coat Area: 40 SF with SP 11 cleaning.

Structure N-40-46

1. Three Coat Area: 30 SF with SP 11 cleaning.

Structure N-40-47

1. Three Coat Area: 25 SF with SP 11 cleaning.

Structure N-67-01

1. Three Coat Area: 170 SF with SP 11 cleaning.

B Materials

Furnish an epoxy coating system from the department's APL for Paint- structure maintenance.

C Construction

C.1 Surface Preparation

Before overcoating or power tool cleaning, solvent clean all surfaces to be coated according to SSPC-SP1. A SSPC-SP 11 power Tool Cleaning according to Steel Structures Painting Council Specification 11 will be required on all metal surfaces to be painted with a three-coat system. Prime the same day, or re-clean before application, all metal surfaces receiving a No. 11 cleaning.

Remove all abrasive or paint residue from steel surfaces with a High Efficiency Particulate Abatement (HEPA-VAC) vacuum cleaner equipped with a brush-type cleaning tool, or by double blowing. If the double blowing method is used, vacuum the exposed top surfaces of all structural steel, including flanges, longitudinal stiffeners, splices, plates, and hangers, after the double blowing operations are completed. The air line used for blowing the steel clean shall have an inline water trap and the air shall be free of oil and water as it leaves the air line.

Take care to protect freshly coated surfaces from subsequent cleaning operations. Thoroughly wire brush damaged primed surfaces with a non-rusting tool. Clean and re-prime the brushed surfaces within the time recommended by the manufacturer.

C.2 Painting

Paint by applying two or three coats of an approved coating system as specified herein to the surfaces as described in A.1 from the department's approved products list.

C.3 Coating Application

Apply paint in a neat, workmanlike manner. The resultant paint film shall be smooth and uniform without skips or areas of excessive paint. Apply coating according to the manufacturer's recommendations.

Before applying the prime coat, coat with primer all edges, rivet and bolt heads, nuts and washers by using either a brush, roller, or spray application.

Dry Film Thickness per coat shall be a minimum of 3-mil. The dry film thickness shall be determined by use of a magnetic film thickness gage. The gage shall be calibrated for dry film thickness measurement according to SSPC-PA 2.

During surface preparation and coating application, the ambient and steel temperature shall be between 39 and 100 degrees F. The steel temperature shall be at least 5 degrees F above the dew point temperature, and the relative humidity shall not exceed 85%.

D Measurement

The department will measure Structure Overcoating Cleaning and Priming (Structure #) as a single unit for 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
517.3001.S.01	Structure Overcoating Cleaning and Priming N-40-06	EACH
517.3001.S.02	Structure Overcoating Cleaning and Priming N-40-17	EACH
517.3001.S.03	Structure Overcoating Cleaning and Priming N-40-33	EACH
517.3001.S.04	Structure Overcoating Cleaning and Priming N-40-34	EACH
517.3001.S.05	Structure Overcoating Cleaning and Priming N-40-40	EACH
517.3001.S.06	Structure Overcoating Cleaning and Priming N-40-41	EACH
517.3001.S.07	Structure Overcoating Cleaning and Priming N-40-42	EACH
517.3001.S.08	Structure Overcoating Cleaning and Priming N-40-43	EACH
517.3001.S.09	Structure Overcoating Cleaning and Priming N-40-46	EACH
517.3001.S.10	Structure Overcoating Cleaning and Priming N-40-47	EACH
517.3001.S.11	Structure Overcoating Cleaning and Priming N-67-01	EACH

Payment is full compensation for preparing and cleaning the designated surfaces; and for furnishing and applying the paint.

stp-517-036 (20210708)

- 11. Containment and Collection of Waste Materials N-40-06, Item 517.4001.S.01;
Containment and Collection of Waste Materials N-40-17, Item 517.4001.S.02;
Containment and Collection of Waste Materials N-40-33, Item 517.4001.S.03;
Containment and Collection of Waste Materials N-40-34, Item 517.4001.S.04;
Containment and Collection of Waste Materials N-40-40, Item 517.4001.S.05;
Containment and Collection of Waste Materials N-40-41, Item 517.4001.S.06;
Containment and Collection of Waste Materials N-40-42, Item 517.4001.S.07;
Containment and Collection of Waste Materials N-40-43, Item 517.4001.S.08;
Containment and Collection of Waste Materials N-40-46, Item 517.4001.S.09;
Containment and Collection of Waste Materials N-40-47, Item 517.4001.S.10;
Containment and Collection of Waste Materials N-67-01, Item 517.4001.S.11.**

A Description

This special provision describes furnishing and erecting tarpaulins to contain, collect and store the spent material from surface preparation of steel surfaces, collecting such spent material, and labeling and storing the spent material in waste containers.

B Materials

Provide 5-gallon lidded plastic containers for containing the spent material.

C Construction

Erect tarpaulins or other materials to collect all of the spent material from power tool cleaning. Consider and treat all spent material as hazardous waste because it contains lead.

Collect and store all waste material collected by this operation at the structure site for disposal. Collect and store all waste materials at the end of each workday or more often if needed. Store materials in 5-gallon lidded plastic containers.

Label each container with the date the first waste was placed in the container and the words "Hazardous Waste – EPA Waste Code D008." Lock and secure all containers at the end of each workday. Keep the containers covered at all times except to add or remove waste material. Store the containers in an accessible and secured area, not located in a storm water runoff course, floodplain or exposed to standing water.

Collect the spent debris by vacuuming, shoveling, sweeping, or by channeling it directly to disposal containers. The enclosure shall be thoroughly cleaned at the end of each workday.

D Measurement

The department will measure Containment and Collection of Waste Materials (Structure #) as a single unit for 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
517.4001.S.01	Containment and Collection of Waste Materials N-40-06	EACH
517.4001.S.02	Containment and Collection of Waste Materials N-40-17	EACH
517.4001.S.03	Containment and Collection of Waste Materials N-40-33	EACH
517.4001.S.04	Containment and Collection of Waste Materials N-40-34	EACH
517.4001.S.05	Containment and Collection of Waste Materials N-40-40	EACH
517.4001.S.06	Containment and Collection of Waste Materials N-40-41	EACH
517.4001.S.07	Containment and Collection of Waste Materials N-40-42	EACH
517.4001.S.08	Containment and Collection of Waste Materials N-40-43	EACH
517.4001.S.09	Containment and Collection of Waste Materials N-40-46	EACH
517.4001.S.10	Containment and Collection of Waste Materials N-40-47	EACH
517.4001.S.11	Containment and Collection of Waste Materials N-67-01	EACH

Payment is full compensation for designing, erecting, operating, maintaining and disassembling the containment devices; collecting, labeling and storing spent materials in appropriate containers.

stp-517-037 (20210708)

12. Noise Barriers Double-Sided Sound Absorptive N-40-06, Item 541.0300.S.01; Noise Barriers Double-Sided Sound Absorptive N-40-17, Item 541.0300.S.02; Noise Barriers Double-Sided Sound Absorptive N-40-43, Item 541.0300.S.03; Noise Barriers Double-Sided Sound Absorptive N-67-01, Item 541.0300.S.04.

A Description

This special provision describes designing, fabricating, transporting, and erecting composite concrete double-sided sound absorptive noise barriers as the plans show and conforming to department-approved installation specifications.

B Noise Wall System

B.1 System Pre-Qualification and Selection

The noise wall system supplied must be pre-qualified by the department. The department maintains a list of pre-qualified systems which can be viewed online at:

<https://wisconsin.gov/Pages/doing-business/eng-consultants/cns/it-rsrcs/tools/appr-prod/default.aspx>

Systems eligible for use on this project shall be pre-qualified before the award of this contract.

Provide the name of the selected system, and the intended fabricator to the engineer within 25 days after award of the contract. Schedule a pre-design meeting with the engineer subsequent to award of the contract and before beginning design of the noise barrier. A representative of the fabricator of the noise barrier components shall attend this meeting.

B.2 Design

B.2.1 Structural and Foundation Design

The structural and foundation design of the noise barrier system shall conform to the current edition of "AASHTO LRFD Bridge Design Specifications" published by the American Association of State Highway and Transportation Officials (AASHTO), 444 North Capitol Street, NW, Suite 225, Washington, DC 20001, with the following exceptions:

The minimum design wind pressure shall be 35 pounds per square foot (Strength III) for ground mounted noise barriers and 40 pounds per square foot (Strength III) for structure mounted noise barriers, unless specified otherwise on the plans. For ground and structure mounted noise barriers, the minimum Service I design wind pressure shall be 15 pounds per square foot. All wind loads shall be applied perpendicular to the barrier, alternately in each direction.

Design drilled shaft foundations using the Broms Method. Ignore the top 1 foot of supporting soil in the design of ground-mounted barrier foundations.

In addition to wind loads, design the bottom noise barrier panel to support the dead load (weight) of the panels directly above it and its own dead load. Assume this dead load to be distributed uniformly across the bottom panel acting as a simple beam supported at the posts.

Bottom noise barrier panels shall have a minimum amount of perimeter reinforcement of a #4 bar which shall be continuous around the corners. Reinforcing steel in the concrete core of noise barrier panels shall have a minimum clear cover of 1 inch. Clear cover does not include sound absorptive material. Design the reinforced concrete core to resist the loads without considering any composite action from other material in the panel.

Provide a neoprene bearing pad or equivalent material of 1/4 inch minimum thickness between the foundation and the bottom panels. The allowable bearing stress shall not exceed 900 psi. Precast concrete pedestals placed between the foundation and bottom panels shall be reinforced if over 1'-0" high. The bearing pads shall be preformed EPDM rubber conforming to ASTM D-2000, Grade 2, Type A, Class A with a minimum Durometer Hardness of 80.

B.2.2 Fire Hose Access Openings

Design fire hose access openings, at locations the plans show, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity. Detail drawings shall show the additional reinforcement and method for attaching the Fire Hydrant Location Signs to the barrier panel.

B.2.3 Barrier Profile

Unless the plans show or the engineer approves otherwise, design the top of the noise barrier to be horizontal and at or above the acoustic elevation line the plans show. The bottom elevation of the noise barrier shall be as the plans show. Changes in elevation shall be accomplished by stepping sections at posts. Steps shall not exceed 3-feet in height. All joints shall be horizontal or vertical and shall be aligned with the adjacent panels.

B.2.4 Panel Orientation

Design the panels to prevent entrapment and ponding of water. Avoid inadvertently providing areas for perching, nesting of birds or collecting of dirt and debris in the design of the noise barrier system.

B.2.5 Sound Transmission Loss (TL)

Design the noise barrier panel material to achieve a transmission loss equal to or greater than 20 decibels in all test frequency bands, as referenced in ASTM E90.

B.2.6 Noise Reduction Coefficient (NRC)

Design the noise barrier system so that the highway sides of the noise barrier panels have a minimum NRC of 0.80 and the residential sides have a minimum NRC of 0.70 as referenced in ASTM C423.

B.2.7 Design Coordination

Design the noise barrier post spacing so as not to interfere with the existing utility and drainage facilities.

Design the noise barrier post spacing so as not to interfere with proposed utility and drainage facilities the plans show. This includes proposed roadway lighting and ITS facilities.

For noise barriers mounted behind or near proposed retaining walls, coordinate and design the noise barrier post spacing so as to not interfere with embedded portion of the proposed retaining walls, including MSE wall soil reinforcement and tieback anchors on soldier pile and timber lagging retaining walls.

For noise barriers mounted on proposed bridges and retaining walls, coordinate and design the noise barrier post spacing to coincide with noise barrier post and embedded noise barrier anchor assembly spacing shown on the bridge and retaining wall plans. Coordinate any required changes to the noise barrier post spacing and embedded noise barrier anchor assembly locations shown on the bridge and retaining wall plans, if required for the design of the noise barrier.

B.2.8 Weep Hole Openings

Design panels such that weep hole openings in noise wall to allow water to drain can be field installed per C.3 at locations the plans show.

B.2.9 Maintenance Doors

Design maintenance doors and door portals in noise walls, at locations the plans show, with additional reinforcement and clear cover around the opening as necessary to maintain structural integrity per B.2.1.

B.3 Materials

Required material certifications and testing are the responsibility of the contractor. All certifications and test reports shall carry the name and address of the fabrication facility where the specific material was produced.

B.3.1 Concrete Masonry

Provide grade A concrete conforming to standard spec 501 as modified in standard spec 716 for concrete posts and the core component of composite concrete sound absorbing panels. Provide QMP for class II ancillary concrete as specified in standard spec 716.

B.3.2 Materials Testing General

All test reports shall carry the name and address of the laboratory where testing was performed, and the name of the person in responsible charge of the specific tests for which data is presented. Materials tested shall be representative of materials manufactured for this specific contract. Panels tested or from which samples will be taken will be selected and appropriately marked by the engineer either at the manufacturer's plant or from panels delivered to the project at the engineer's option.

Testing as detailed below is required for each lot of material not to exceed 100,000 SF of noise barrier produced. Conduct testing on panels within the first 30,000 SF of production of each lot not exceeding 100,000 SF. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage. The first set of tests conducted for projects that do not exceed 100,000 SF shall be within the first third of the total square footage of the project. Provide the shipping record of the samples to the laboratory within five days of sampling. Begin testing as soon as practicable after sampling.

Test all materials as fabricated, including any specified finishing.

B.3.2.1 Noise Reduction Coefficient (NRC)

Test noise barrier panels according to ASTM C423, and placed according to ASTM E795, mounting type A, to determine the noise reduction coefficient (NRC) of the material. Submit to the engineer an independent laboratory test report that shows that the noise barrier panels achieve an NRC as specified in B.2.6 for the highway side of the barrier.

B.3.2.2 Long-term Durability

Test all sound absorbing composite concrete and composite concrete components for long-term durability according to ASTM C672 and the following modifications and/or requirements:

B.3.2.2.1 Test Specimens

Three specimens of a full cross section of the composite panel at least 144 square inches in face area will be selected at random from the provided composite panel as defined in B.3. Sample specimens shall be representative of the manufacturer's continuous production operation, as selected and marked by the engineer. Specimens shall be 2D-symmetric and shaped according to the testing laboratory's accommodations.

Prepare the surfaces of the sample specimens for testing as follows. Brush the surfaces of the sample to remove any loose particles. Before testing, submerge the test specimens be submerged in water for a period of 24 hours before testing. Immediately following this, cover the specimens with the sodium chloride solution as stated below.

B.3.2.2.2 Test Procedure

Place samples in a 5 sided water tight container, fully submerged in a solution of sodium chloride (concentration 3% by mass). Maintain 1/4 inch of sodium chloride solution above the top surface of the fully submerged specimen within the container.

Subject the submerged specimens to continuous freeze-thaw cycles as follows:

After each five cycles, remove the salt solution and particles of deteriorated concrete from the slab and collect in a watertight container. The operation is best accomplished by tilting the slab in a funnel approximately 20 inches in diameter and washing the surface of the slab with a 3% sodium chloride solution. Continue this washing until all loose particles are removed from the sample. Strain the solution through a filter and dry the residue at 221 degrees Fahrenheit to a constant mass condition. Cumulatively

weigh the residue after each five cycles. The dry residue is defined as the loss of mass. Calculate the loss of mass to the nearest 0.01 pounds per square foot, not including the exposed surface of any core material on the cast or cut edges. Visually rate the surfaces according to 10.1.5 of ASTM C672 including any delamination of the sound absorbing material from the concrete core for composite concrete materials. After each washing of each sample, re-establish the initial submerged condition with a new solution of 3% sodium chloride before continuing with freeze-thaw cycling.

Continue the test until 30 freeze-thaw cycles have been completed.

During the test position and support each specimen to allow free circulation of the test solution under, around, and over test pieces. Support the bottom of the specimens on blocks in a manner to facilitate movement of moisture through and around the test specimens.

B.3.2.2.3 Test Report

Submit to the engineer an independent testing laboratory test report which shows that all solid and composite concrete products meet or exceed the following criteria:

1. After 30 freeze-thaw cycles the test specimens shall not exhibit excessive deterioration in the form of cracks, spalls, aggregate disintegration, delamination, or other objectionable features.
2. Compliance with the test requirements is based upon a loss of mass of not more than 0.2 pounds per square foot from the surface after 30 cycles of freezing and thawing.
3. The report shall include the following:
 - 3.1. Name of manufacturer.
 - 3.2. Location of production.
 - 3.3. Production description.
 - 3.4. Date product sample was cast.
 - 3.5. Date testing began.
 - 3.6. Specimen identification.
 - 3.7. 5x7-inch color photographs of the test specimens before and after the 30 cycles of freeze-thaw test showing both sound absorbing faces and at least one representative side view of a cut (not cast) face, and any defects.
 - 3.8. A graph of the cumulative mass loss of each specimen plotted against the number of freeze-thaw cycles for 5, 10, 15, 20, 25, and 30 freeze-thaw cycles.
 - 3.9. Visual rating according to ASTM C672 Section 10.1.5, including report of any delamination of the sound absorbing material from the concrete core for composite concrete components.

B.3.3 Materials Certification - General

Provide certification of compliance or sample fabrications as noted below. All material certifications shall reference the specific facility manufacturing the material and this contract. Certification is required for each lot of material not to exceed 100,000 SF of noise barrier produced and shall include dates of fabrication for the lot being certified. For projects that do not exceed 100,000 SF, a minimum of two lots of material will represent the project, each lot representing equivalent square footage.

B.3.3.1 Color and Surface Texture

Supply and deliver to the engineer a 3-foot x 5-foot minimum test panel for each panel type with the specified pattern and colors. Obtain the engineer's acceptance of the panel's pattern and color before production of the panels required for the contract. The accepted pattern and color test panels shall remain on the project site in a readily accessible location for the duration of the project. The accepted pattern and color sample panels will be the standard for all noise barriers on the project.

Manufacture noise barrier posts of the same materials throughout the project. Shop apply coating and coloring of the post and panels.

Unless otherwise shown and provided for in the plans, wall pattern shall contain textures with relief features of sufficient depth and quantity to be distinguishable at an observation distance of 500-feet. The colors and textures chosen will be within the following parameters; however, at the discretion of the engineer, a single color and/or a single texture may be selected for either side of the noise barrier.

	FREEWAY SIDE	RESIDENTIAL SIDE
Number of colors	2	2
In the proportion of	75:25 (+/- 5%)	75:25 (+/-5%)
Number of textures	2	2
In the proportion of	75:25 (+/- 5%)	75:25 (+/- 5%)

Insert Specifics as Applicable

The engineer will visually inspect panels for color consistency upon arrival at the project. The panels shall have no substantial variation in color from the accepted sample panel submitted for the project. All panels with substantial color variation will be rejected and shall be removed from the project.

B.3.3.2 Structural Steel

Submit to the engineer certification of compliance, including mill certifications and heat numbers, that structural steel conforms to the properties required on the plans and shop drawings, and is galvanized after fabrication by the hot-dip process according to ASTM A123. Galvanize all steel hardware and threaded fasteners, bolts, nuts, and washers according to ASTM A153.

Shop coat all steel galvanized surfaces exposed to view with a department-approved paint system. Clean galvanizing surfaces to be painted according to SSPC-SP1 to remove, chlorides, sulfates zinc salts, oil, dirt, organic matter and other contaminants. Brush Blast clean the surfaces according to SSPC-SP7 to create a slight angular surface profile (1.0 – 1.5 mils suggested) for adhesion. Do not fracture the galvanized finish or remove any dry film thickness during these processes.

After cleaning, provide a tie coat from an approved coating system that is specifically intended to be used on a galvanized surface. The tie coat shall etch the galvanized surface and prepare the surface for the top coat. Apply a top coat matching the finished color specified in B.3.2. Use a pre-approved top coat that is resistant to the effects of the sun, and is suitable for use in a marine environment. Exercise care so as not to damage the painted surfaces during shipment and erection of the noise barriers.

Use one of the qualified paint sources and products given below. An equivalent system may be used with the written approval of the engineer. Supply the engineer with the product data sheets before applying any coating. The product data sheets shall indicate the mixing and thinning directions, the recommended spray nozzles and pressures, the minimum drying time for shop applied coats, and the recommended procedures for coating galvanized bolts, nuts, and washers.

Producer	Coat	Products	Dry Film Minimum Thickness (mils)	Minimum Time Between Coats (hours)
Sherwin Williams Co. (847) 330-1250	Tie	Recoatable Epoxy Primer B67-5 Series/B67V5	2.0 to 4.0	6
	Top	Acrolon 218 HS Polyurethane, B65-650	2.0 to 4.0	NA
Carboline Co. (314) 644-1000	Tie	Rustbond Penetrating Sealer FC	1	36
	Top	Carboline 133 LH	4	NA
Wasser Corp. (253) 850-2967	Tie	MC-Ferrox B 100	3.0 to 5.0	8
	Top	MC-Luster 100	2.0 to 4.0	NA

B.3.3.3 Sound Transmission Loss (TL)

Submit to the engineer certification of compliance that the sound transmission loss of the panel material, when tested according to ASTM Standard E90, achieves a transmission loss as specified in B.2.5.

B.3.3.4 Accelerated Weathering

Submit to the engineer certification of compliance that all coatings on barrier components, with the exception of structural steel and wood components comply with the following requirements when tested according to ASTM Standard G155, G153, or G152 after 2400 hours of exposure on a cement based test specimens:

1. No checking when rated according to ASTM D660.
2. No cracking when rated according to ASTM D661.
3. No blistering when rated according to ASTM D714.

4. No difference in adhesion between the unexposed control sample and an exposed sample when tested according to ASTM D3359, Method A.
5. No chalking less than #7 rating when rated according to ASTM D4214.
6. No color change greater than 5 NBS units when measured according to ASTM D2244, using illuminant D65 and the 1964 10-degree standard observer.

B.3.3.5 Corrosion Resistance (Salt Fog Exposure)

Submit to the engineer certification of compliance that all coated steel components, with the exception of structural steel, has a coating system that has been tested for corrosion resistance according to ASTM B117 and comply with the following requirements:

1. No checking when rated according to ASTM D660.
2. No blistering when rated according to ASTM D714.
3. No loss of adhesion when tested according to ASTM D3359 with no evidence of corrosion along the edges of the samples or along the score lines, or both, or other defects.

B.4 Project Submittal Requirements

Furnish required submittals according to the following:

B.4.1 Pre-Construction Submittals

A minimum of 14 days before beginning any shop or field work, submit the following documents to the engineer conforming to standard spec 105.2 with electronic submittal to the fabrication library under standard spec 105.2.2.

1. Structural and foundation design calculations
Design calculations shall be on 8 1/2 x 11-inch sheets, neatly bound with a title sheet listing the complete project identification number and sound barrier designation. Structural and foundation calculations shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.
2. Detailed design/shop drawings
Design/shop drawings shall conform to the contract plans and the requirements of these special provisions. The design/shop drawings shall consist of plan and profile sheets, details, explanatory notes, erection diagrams, aesthetic treatments, and other working plans. All dimensions, sizes of material, material information and other information necessary for the complete fabrication and construction of the noise barrier shall be designated on the appropriate sheets. The design/shop drawings shall be drawn to an appropriate scale on reproducible sheets 11 x 17 inches including borders. Each sheet shall carry the complete project identification number and noise barrier designation. Design/shop drawings shall be signed, sealed and dated by a professional engineer licensed in the State of Wisconsin.
3. Specifications regarding installation requirements and sequence of construction, including a detailed bill of materials.
4. Detailed color plan of the aesthetic treatments and finishes for the entire noise barrier.
5. Shipping, handling, and storage plan identifying methods or practices to limit post production damage.

Department review does not relieve the contractor from responsibility for errors or omissions on shop drawings.

B.4.2 Pre-Installation Submittals

Supply and deliver to the engineer the sample panel required under Section B.3.3.1 at least 14 calendar days before beginning production and/or installation of job materials. Acceptance of the sample panel will be by: **INSERT CONTACT INFORMATION**. If the panel is not acceptable, a second panel shall be produced and submitted for acceptance. Sample panel to be representative of quality for precast panel work after acceptance. Deliver test panels to **INSERT LOCATION**, for comparison purposes during production of project panels.

B.4.3 Payment Submittals

Submit certifications and test data as required under B.3 for all materials, including trade name of the products along with the name and address of the manufacturers.

B.4.4 Submittal Review

The engineer's review and acceptance of the drawings, calculations, and related material, submitted by the contractor, is for compliance with design intent only, and does not relieve the contractor from responsibility in regard to errors or omissions on said submittals.

The final accepted design documents and/or shop drawings will become a part of the contract. Any substitution of materials or dimensions contemplated by the contractor's submitted documents, different from materials or dimensions shown on the contract plans, shall be made only when approved by the engineer, and in such case, additional costs resulting from such substitution shall be borne by the contractor.

Ordering materials before department acceptance of submittals is at the contractor's risk.

C Construction

C.1 General

Construct the noise barriers at the locations the plans show, according to the contract specifications and design drawings and/or as the engineer directs. Deliver all sound absorbing composite concrete components to the project site as a finished component. A sound absorbing composite concrete system, which has the sound absorbing material glue-laminated or alternately affixed by a secondary adhesion method on the project site, will not be allowed.

Provide a minimum ten day notice to the engineer of the date that the fabrication of the noise barrier material will begin.

Inspect all materials delivered to the construction site for proper dimensions, honeycombing, cracks, voids, surface defects, consistency in color and texture, and any other damage or imperfections, before installation.

If any part of the noise barrier material fails to comply with any requirements of the contract specification, the component shall either be corrected, permanently marked as unacceptable and be disposed of by the contractor or accepted at a reduced price. The decision will be made by the engineer and is dependent on the severity of the specification deviation.

Erect noise barriers to avoid conflict with any existing facilities or utilities to remain in place. Any damage caused by construction activities shall be repaired by the contractor at no cost to the department.

C.2 Fire Hydrant Location Signs

Attach fire hydrant location signs to the noise barrier at each location the plans show by a method the department's approved drawings show. The signs shall conform and be of the type specified in the department's sign plate book, plate D9-54 and/or D9-54A.

Compensation for furnishing and placing the fire hydrant location signs shall be included in the contract price for Noise Barriers Double-Sided Sound Absorptive and no additional compensation therefore will be allowed.

C.3 Weep Hole Openings

Provide weep hole openings for drainage at the locations and sized as noted on the plan. Install weep holes by drilling through the wall after erection of the noise barrier. Use 6" PVC Schedule 40 pipe sleeve conforming to ASTM D-1785. Epoxy 6" PVC Schedule 40 pipe sleeve into bored weep hole. PVC pipe sleeve shall fit snugly in cored hole through wall. Epoxy PVC pipe sleeve into bored weep hole in noise barrier. Locate and construct weep holes according to the plans and as the engineer directs. Place weep holes at locations the plans show unless the engineer approves adjusting locations to fit field conditions. The engineer will field verify the height and location of the weep hole for positive drainage.

C.4 Name Plates

Provide name plates conforming to the requirements of standard spec 506.2.4. Install one name plate on each noise barrier at the location the plans show. Rigidly attach each plate to the barrier by a means approved by the engineer.

Compensation for furnishing and placing of name plates shall be included in the contract price for Noise Barriers, Double-Sided Sound Absorptive Structure and no additional compensation therefore will be allowed.

C.5 Structure Mounted Noise Barriers

Do not erect noise barriers mounted to bridge or retaining wall structures until after the concrete for bridge decks and parapets or retaining wall moment slabs and parapets have attained their specified 28-day strength.

For noise barriers mounted to moment slabs and parapets on top of MSE retaining walls, erection of the noise barrier is limited to two-thirds the height of the noise barrier acoustical line the plans show before

placement of earth fill or pavement over the top of the moment slab as the plans show. Erection of the noise barrier in excess of two-thirds its height to the full height of the noise barrier acoustical line the plans show may not occur until after the earth fill or pavement structure over the top of the moment slab the plans show is complete.

C.6 Construction Tolerances

Install the posts and panels comprising the noise barrier plumb within 1/2 inch in 15-feet. Locate the posts to the line and grades as the plans show to within +/- 3/4 inch. Align horizontal joints of adjacent panels to a vertical tolerance of 1/4 inch. Where vertical adjustments are required for alignment, use a mortar base or steel shims. Galvanize and prime coat steel shims according to B.3.3.2.

D Measurement

The department will measure Noise Barriers Double-Sided Sound Absorptive (Structure #) by the square foot, acceptably completed, as the area the original plans show plus engineer-approved modifications to the plan quantity caused by plan corrections or revisions.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
541.0300.S.01	Noise Barriers Double-Sided Sound Absorptive N-40-06	SF
541.0300.S.02	Noise Barriers Double-Sided Sound Absorptive N-40-17	SF
541.0300.S.03	Noise Barriers Double-Sided Sound Absorptive N-40-43	SF
541.0300.S.04	Noise Barriers Double-Sided Sound Absorptive N-67-01	SF

Payment is full compensation for providing noise barrier including: coloring and aesthetic treatment on panels, preparing the design drawings and calculations, furnishing and delivering sample and test panels, materials testing, furnishing materials test reports and certifications, excavation, preparing the site, constructing foundations, erecting posts and panels, and disposing of waste materials.

stp-541-010 (20210708)

13. Nighttime Work Lighting-Stationary.

A Description

This special provision describes furnishing portable lighting as necessary to complete nighttime work. Nighttime operations consist of work specifically scheduled to occur after sunset and before sunrise.

B (Vacant)

C Construction

C.1 General

This provision shall apply when providing, maintaining, moving, and removing portable light towers and equipment-mounted lighting fixtures for nighttime stationary work operations, for the duration of nighttime work on the contract.

At least 14 days before the nighttime work, furnish a lighting plan to the engineer for review and acceptance. Address the following in the plan:

1. Layout, including location of portable lighting – lateral placement, height, and spacing. Clearly show on the layout the location of all lights necessary for every aspect of work to be done at night.
2. Specifications, brochures, and technical data of all lighting equipment to be used.
3. The details on how the luminaires will be attached.
4. Electrical power source information.
5. Details on the louvers, shields, or methods to be employed to reduce glare.
6. Lighting calculations. Provide illumination with average to minimum uniformity ratio of 5:1 or less throughout the work area.
7. Detail information on any other auxiliary equipment.

C.2 Portable Lighting

Provide portable lighting that is sturdy and free standing and does not require any guy wires, braces, or any other attachments. Furnish portable lighting capable of being moved as necessary to keep up with the construction project. Position the portable lighting and trailers to minimize the risk of being impacted by traffic on the roadway or by construction traffic or equipment. Provide lightning protection for the portable lighting. Portable lighting shall withstand up to 60 mph wind velocity.

If portable generators are used as a power source, furnish adequate power to operate all required lighting equipment without any interruption during the nighttime work. Provide wiring that is weatherproof and installed according to local, state, federal (NECA and OSHA) requirements. Equip all power sources with a ground-fault circuit interrupter to prevent electrical shock.

C.3 Light Level and Uniformity

Position (spacing and mounting height) the luminaires to provide illumination with an average to minimum uniformity ratio of 5:1 or less throughout the work area.

Illuminate the area as necessary to incorporate construction vehicles, equipment, and personnel activities.

C.4 Glare Control

Design, install, and operate all lighting supplied under these specifications to minimize or avoid glare that interferes with all traffic on the roadway or that causes annoyance or discomfort for properties adjoining the roadway. Locate, aim, and adjust the luminaires to provide the adequate level of illumination and the specified uniformity in the work area without the creation of objectionable glare.

Provide louvers, shields, or visors, as needed, to reduce any objectionable levels of glare. As a minimum, ensure the following requirements are met to avoid objectionable glare on the roadways open to traffic in either direction or for adjoining properties:

1. Aim tower-mounted luminaires, either parallel or perpendicular to the roadway, so as to minimize light aimed toward approaching traffic.
2. Aim all luminaires such that the center of beam axis is no greater than 60 degrees above vertical (straight down).

If lighting does not meet above-mentioned criteria, adjust the lighting within 24 hours.

C.5 Continuous Operation

Provide and have available sufficient fuel, spare lamps, generators, and qualified personnel to ensure that the lights will operate continuously during nighttime operation. In the event of any failure of the lighting system, discontinue the operation until the adequate level of illumination is restored. Move and remove lighting as necessary.

D (Vacant)

E Payment

Costs for furnishing a lighting plan, and for providing, maintaining, moving, and removing portable lighting, tower mounted lighting, and equipment-mounted lighting required under this special provision are incidental to the contract.

stp-643-010 (20100709)

14. Traffic Control Interim Lane Closure, Item 643.4100.S.

A Description

This special provision describes closing a freeway/expressway traffic lane.

B (Vacant)

C Construction

Install and reposition traffic control devices as required to close a traffic lane. Remove and return the devices to their previous configuration when the closure is no longer required.

D Measurement

The department will measure Traffic Control Interim Lane Closure as each individual reposition/return cycle, acceptably completed. The department will not measure additional moves or configuration changes as might be required solely to accommodate the contractor's operations.

The department will measure the closures by traffic lane and roadway. The department will not measure multiple closures in the same traffic lane on a project.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
643.4100.S	Traffic Control Interim Lane Closure	EACH

Payment is full compensation for closing and re-opening the affected traffic lane.

stp-643-030 (20170615)

15. Precast Sound Barrier Panel Support Repair, Item SPV.0060.01.

A Description

This special provision describes providing repair to the supports for sound wall panels as shown on the plans, as directed by the engineer, and in accordance with section 506 of the standard specifications.

B Materials

Furnish painted steel angles as shown on the plans conforming to ASTM A709 grade 36. Paint color to match the color of the existing posts.

C Construction

Locate sound panels that have settled past the existing support brackets.

Remove and salvage existing undamaged panels from the structural support posts by lifting them out. Cost to remove, store, and reinstall the sound panels is included in the bid item "Removing and Reinstalling Sound Panels". Any damage to the sound panels caused by the contractor during removal, storage or reinstalling the panels shall be repaired by the contractor at no additional cost to the department.

Install sound barrier panel support brackets as shown in details in the plan.

D Measurement

The department will measure Precast Sound Barrier Panel Support Repair by each unit 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	Precast Sound Barrier Panel Support Repair	Each

Payment is full compensation for supplying and installing the sound barrier support bracket, and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

16. Removing and Reinstalling Sound Panels, Item SPV.0060.02.

A Description

This special provision describes removing, salvaging, storing, and reinstalling sound wall panels at locations shown on the plans and as directed by the engineer.

B Materials

Use existing materials.

C Construction

If existing panels are designated for salvage and use in the new work, remove them from the existing location, clean, handle, store, and re-install at the same location without damaging the panel. Replace any material damaged by the contractor.

D Measurement

The department will measure Removing and Reinstalling Sound Panels by the each acceptably completed. Each panel will consist of an entire unit between posts.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Removing and Reinstalling Sound Panels	Each

Payment is full compensation for removing, salvaging, cleaning, storing, reinstalling sound wall panels; and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

17. Precast Noise Barrier Support Post Replacement, Item SPV.0060.03.

A Description

This special provision describes removing the existing noise barrier support, filling the hole with "Backfill Controlled Low Strength", drilling a new hole through the backfill, designing, preparing shop drawings, furnishing, and installing the new prestressed concrete post and footing, in the plans and conforming to department approved installation specifications.

B Materials

Materials shall be in accordance with Section B.3 of article 'Noise Barriers Double-Sided Sound Absorptive (Structure #)' previously described.

C Construction

Construct the noise barrier supports at the locations the plans show, according to the contract specifications and design drawings and/or as the engineer directs.

Provide a minimum ten-day notice to the engineer of the date that the fabrication of the noise barrier support will begin.

Inspect all materials delivered to the construction site for proper dimensions, honeycombing, cracks, voids, surface defects, consistency in color and texture, and any other damage or imperfections, before installation.

If any part of the noise barrier support material fails to comply with any requirements of the contract specification, the component shall either be corrected, permanently marked as unacceptable and be disposed of by the contractor or accepted at a reduced price. The decision will be made by the engineer and is dependent on the severity of the specification deviation.

Erect noise barrier supports to avoid conflict with any existing facilities or utilities to remain in place. Any damage caused by construction activities shall be repaired by the contractor at no cost to the department.

D Measurement

The department will measure Precast Noise Barrier Support Post Replacement by 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.0060.03	Precast Noise Barrier Support Post Replacement	Each

Payment is full compensation for removing existing noise barrier support, filling the hole with "Backfill Controlled Low Strength", drilling a new hole through the backfill, designing, preparing shop drawings, furnishing, and installing the new prestressed concrete post and footing; and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.

18. Traffic Control Close-Open Freeway Service Ramp, Item SPV.0060.04.

A Description

This special provision describes closing and re-opening service entrance or exit ramps and associated auxiliary lane and conforming to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a freeway service ramp. Remove or return traffic control devices to their previous configuration when the closure is no longer required. Post all service ramp closures three business days in advance of their closure with dates and time of closure. Drums, barricades and signs may remain along the roadways when the ramp is open to traffic pending engineer approval to verify adequate offsets from traffic are provided. Ensure that all inappropriate signs, dates or times are not visible to traffic when the ramp is open. A deduction of one each will be made from the project total for this item for each day any inappropriate sign is visible to traffic when the ramp is open.

D Measurement

The department will measure Traffic Control Close-Open Freeway Service Ramp by each individual closure, acceptably completed. The department will not measure the closure of a freeway service ramp not deemed necessary by the engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0060.04	Traffic Control Close-Open Freeway Service Ramp	EACH

Payment is full compensation for closing and later and re-opening a freeway service ramp. Traffic Control devices will be paid separately. Closure of adjacent auxiliary lanes shall be made as necessary at no additional cost to the department.

19. Traffic Control Close-Open Freeway to Freeway System Ramp, Item SPV.0060.05.

A Description

This special provision describes closing and re-opening a freeway to freeway system ramp and associated auxiliary lane and conforming to standard spec 643, the plans, and as directed by the engineer.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a freeway to freeway system ramp and adjacent auxiliary lane. Remove or return traffic control devices to their previous configuration when the closure is no longer required. Post all system ramp closures five business days in advance of their closure with dates and time of closure. Drums, barricades and signs may remain along the roadways when the ramp is open to traffic pending engineer approval to verify adequate offsets from traffic are provided. Ensure that all inappropriate signs, dates or times are not visible to traffic when the ramp is open. A deduction of one each will be made from the project total for this item for each day any inappropriate sign is visible to traffic when the ramp is open.

D Measurement

The department will measure Traffic Control Close-Open Freeway to Freeway System Ramp by each individual closure, acceptably completed. The department will not measure the closure of a freeway to freeway system ramp not deemed necessary by the engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0060.05	Traffic Control Close-Open Freeway to Freeway System Ramp	EACH

Payment is full compensation for closing and later and re-opening a freeway to freeway system ramp. Traffic Control devices will be paid separately. Closure of adjacent auxiliary lanes shall be made as necessary at no additional cost to the department.

20. Traffic Control Local Road Lane Closures, Item SPV.0060.06.

A Description

This special provision describes closing and reopening a local road lane or lanes, conforming to standard spec 643, the plans, and as directed by the engineer. Full closures of local roads will not be allowed.

B (Vacant)

C Construction

Install or reposition traffic control devices required for closing a local road lane or lanes. Remove or return traffic control devices to their previous configuration when the closure is no longer required. Drums, barricades, and signs may remain along the roadways when the lane or lanes are open to traffic pending engineer approval to verify adequate offsets from traffic are provided. Ensure that all inappropriate signs, dates or times are not visible to traffic when the lane or lanes are open. A deduction of one each will be made from the project total for this item for each day any inappropriate sign is visible to traffic when the lane or lanes are open.

D Measurement

The department will measure Traffic Control Local Road Lane Closures by each individual closure acceptably completed. The department will not measure the closure of a local road not deemed necessary by the engineer.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV. 0060.06	Traffic Control Local Road Lane Closures	EACH

Payment is full compensation for closing and later re-opening a local road lane or lanes. Traffic Control devices will be paid separately.