Special Provisions

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SPECIAL PROVISIONS

1. General.

Perform the work under this construction contract for Project 9650-17-61, Shawano – Neopit, Wolf River Bridge B-73-0004 and Project 9650-17-70, Shawano – Neopit, Duquaine Road to N Jct County VV, STH 47 in Menominee 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, 2020 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 (20190618)

2. Scope of Work.

The work under this contract shall consist of grading, base aggregate dense, HMA pavement, concrete sidewalk, concrete curb and gutter, storm sewer, water main, pavement marking, signing, lighting, landscaping, structure rehabilitation B-73-4, remove structure C-73-2, construct C-73-4, 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 2020 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 schedule of operations as required under standard spec 108.9.2 shall provide for Enter completed work

When, in the fall of 2020, after completion of the Box Culvert C-73-4 construction, and weather conditions or seasonal restrictions preclude the satisfactory performance of further work under this contract, the engineer will, in writing, suspend operations until the spring of 2021. Construction operations shall be resumed in the spring of 2021 within ten days after the date on which a written order to do so has been issued by the engineer.

0031 (20090901)

Fish Spawning

There shall be no instream disturbance of Wolf River as a result of construction activity under or for this contract, from March 1 to June 15 both dates inclusive, and from November 1 to November 30 both dates inclusive, in order to avoid adverse impacts upon the spawning of Lake Sturgeon.

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.

0036 (20090901)

Migratory Birds

Swallow and other migratory birds' nests have been observed on or under the existing bridge. 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 usually between May 1 and August 30. Either prevent active nests from becoming established, or 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. As a last resort, prevent birds from nesting by installing a suitable netting device on the remaining structure prior to nesting activity. Include the cost for preventing nesting in the cost of Removing Old Structure Over Waterway with Minimal Debris.

0074 (20090901)

Bald Eagles

Bald eagles are known to nest and live along the Wolf River corridor. All cranes or other objects which could potentially be utilized for nesting platforms must be lowered when construction activities are not occurring.

Wood Turtles

Wood Turtles have been documented in the area. Silt fence with small animal exclusionary turn-arounds shall be installed prior to May 1 to discourage turtles from entering the work area. All work shall stop if turtles are encountered during construction operations. Turtles shall be hand removed from the construction area and placed in a safe area outside the construction zone in the direction which the turtle was traveling.

Inspect fencing at least twice weekly on non-consecutive days and after any significant rain event.

Mussels

A Natural Heritage Inventory revealed records for two state threatened or endangered mussel species. This project has been approved with the assumption that all work will occur on the bridge deck and erosion control and stormwater best management practices will be installed to capture all debris. If the bridge deck must be removed, the project must be stopped until the WDNR, WisDOT REC, and MITW Environmental Services Department can conduct a habitat suitability analysis. If necessary, mussels shall be relocated to an appropriate area upstream prior to re-initiating construction activities.

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.

Oak Wilt

Cutting or pruning of oak trees shall be avoided between April 1 and September 30.

Archaeological Sites

Archaeologically significant sites exist in the project area.

Archaeologically significant sites are identified on the plans. An archaeologist will attend the pre-construction meeting and will be onsite to monitor the sensitive areas identified by the Menominee THPO

(Dave Grignon) during construction and keep construction equipment and laydown areas outside these areas.

Provide two weeks' notice to the Environmental Services Section (ESS) before doing any work in the areas of these sites. ESS will provide a qualified archaeologist to be on site at all times when work occurs near these areas.

The contact at ESS is Jim Becker, (608) 261-0137 or Lynn Cloud, (608) 266-0099.

If a potentially significant archaeological feature or material is discovered during construction operations, the qualified archeologist will promptly coordinate with the engineer and with ESS to determine an appropriate course of action.

4(f) and 6(f) Properties

The following properties have protection under 4(f) and/or 6(f): Menominee Indian High School, Keshena Primary School, Menominee Nation Early Childhood, and Menominee Indians Veterans Memorial Park. Restore all disturbed areas. Excavation and temporary easements along the Menominee Indians Veterans Memorial Park should not infringe on the tree driplines along STH 47.

4. Traffic.

Construct STH 47 on which this project is located, in five stages. Maintain STH 47 with 11-foot minimum lane width at all times except as noted hereinafter.

Place advanced warning signs, and have flag personnel with paddles on site prior to completing any work that restricts traffic to one lane, or requires equipment to work on or near live traffic lanes.

Short term lane closures for moving and delivery of construction equipment and materials and construction operations requiring lane closures will be allowed Monday through Friday from 8:30 AM to 1:30 PM, 6:00 PM to 5:30 AM; and on Saturday mornings, prior to 10:00 AM while flagging personnel are on duty.

Maintain access to local residences and business except when construction operations in the area require denial of access. If access will be denied, provide property owners three days notice prior to access restriction.

Maintain access for pedestrians and bicycles at all times during construction.

Stage 1:

Stage 1A:

Construct the temporary diversion pipes under the northbound lane near the STH 47 & CTH VV (south) intersection. This work will include removing existing pavement, installing temporary diversion pipes, placing temporary base course, and paving temporary asphalt to match existing surrounding pavement.

Traffic will be restricted to one 11 foot travel lane on southbound STH 47 in the area near the STH 47 & CTH VV (south) intersection. Signalization using trailer mounted traffic signals with video actuation will be used for both directions of STH 47 and CTH VV (south). CTH VV (south) traffic will be maintained on one 11 foot lane on the existing asphalt pavement.

Stage 1B:

Construct the temporary diversion pipes and new box culvert under the southbound lane near the STH 47 & CTH VV (south) intersection. This work will include removing existing pavement from 151+75 LT to 155+50 LT, installing temporary diversion pipes, removing existing box culvert, building south half of new C-37-4 structure, and installing storm sewer structures and pipe. After completion, build southbound STH 47 lane and curb & gutter in this area.

Traffic will be restricted to one 11 foot travel lane on northbound STH 47 in the area near the STH 47 & CTH VV (south) intersection. Signalization using trailer mounted traffic signals with video actuation will be used for both directions of STH 47 and CTH VV (south). CTH VV (south) traffic will be reduced to one 11 foot travel lane on the existing asphalt pavement.

Stage 1C:

Construct the new box culvert under the northbound lane near the STH 47 & CTH VV (south) intersection. This work will include removing existing pavement from 151+75 RT to 155+50 RT and on CTH VV (south), removing existing box culvert, building north half of new C-37-4, removing the temporary diversion pipes under northbound STH 47, abandoning in place the temporary diversion pipes under

southbound STH 47, and installing storm sewer structures and pipe. After completion, build northbound STH 47 lane and curb & gutter in this area and CTH VV (south) curb & gutter and pavement.

Traffic will be restricted to one 11 foot travel lane on southbound STH 47 in the area near the STH 47 & CTH VV (south) intersection. Signalization using trailer mounted traffic signals with video actuation will be used for both directions of STH 47. CTH VV (south) will be closed to traffic during this stage.

Stage 1D:

Construct beam guard for southbound STH 47 between STH 55 and CTH VV (north). This work includes concrete overlay and railing repair of bridge structure.

Traffic will be restricted to one 12 foot travel lane on northbound STH 47 between STH 55 and CTH VV (north). Signalization using trailer mounted traffic signals with video actuation will be used on STH 47.

Stage 1E:

Construct beam guard for northbound STH 47 between STH 55 and CTH VV (north). This work includes concrete overlay and railing repair of bridge structure.

Traffic will be restricted to one 12 foot travel lane on southbound STH 47 between STH 55 and CTH VV (north). Signalization using trailer mounted traffic signals with video actuation will be used on STH 47.

Stage 2:

All right-turns from the east side streets and all left-turns from the west side streets will be prohibited during all of Stage 2 construction.

Stage 2A:

Install cross pipe under northbound lane of STH 47 at STA 139+66 and temporary gravel widening along northbound STH 47. Once temporary widening and cross pipe are installed, traffic will be shifted to temporary widening so the cross pipe under southbound lane of STH 47 can be installed. Both northbound and southbound STH 47 lanes to be opened to traffic at end of each day with minimum driving surface of dense graded base.

Southbound traffic will remain on STH 47 and be shifted to temporary widening locations at cross pipe locations. Maintain southbound STH 47 traffic on gravel during the weekdays and asphalt during the weekend. Northbound local traffic will be detoured from Duquaine Rd to CTH VV (south). Northbound truck traffic will be detoured along STH 29 in Shawano to STH 47 near Elmhurst.

Stage 2B:

Construct the southbound lane of STH 47 from Dodge Road to station 151+75. This work includes constructing the intersections of Dodge Road, Morrin Road, Brooks Lane, Tribal Office Loop Road (south), and Tribal Office Loop Road (north). An HMA pavement safety edge will need to be placed along the centerline every night after work is done for safety through reconstruction area to reduce drop off along centerline.

Access will be maintained to Dodge Road, Tribal Office Loop Road (south), and Tribal Office Loop Road (north) at all times. Morrin Street and Brooks Lane will need to be closed, however, they will not be allowed to be closed at the same time. Construct main entrance to Menominee Indian High School at station 102+80 LT half at a time to allow access for bus/vehicle traffic.

Southbound traffic will remain on STH 47. Maintain southbound STH 47 traffic on gravel during the weekdays and asphalt during the weekend. Northbound local traffic will be detoured from Duquaine Rd to CTH VV (south). Northbound truck traffic will be detoured along STH 29 in Shawano to STH 47 near Elmhurst. Temporary lane closures needed to remove pavement markings and apply temporary pavement markings will be permitted when approved by the engineer. Flaggers will be utilized for southbound traffic during short term lane closures for moving and delivery of construction equipment and materials.

Stage 3:

Construct the northbound lane of STH 47 from Dodge Road to station 151+75. This work includes constructing the intersections of Warrington Road, Chief Little Wave Road, Chief Carron Street, and Our Children Road. An HMA pavement safety edge will need to be placed along the centerline every night after work is done for safety through reconstruction area to reduce drop off along centerline.

Closures of side streets will occur throughout stage 3. Close Warrington Road only when Chief Carron Street is open. Close Chief Little Wave Road only when Chief Carron Street is open and close Chief

Carron Street only when Chief Little Wave Road and Warrington Road are open. Close Our Children's Road only when Chief Carron Street is open. All right-turns from the east side streets and all left-turns from the west side streets will be prohibited during construction.

Southbound traffic will remain on STH 47. Northbound local traffic will continue to be detoured from Duquaine Rd to CTH VV (south). Northbound truck traffic will continue to be detoured along STH 29 in Shawano to STH 47 near Elmhurst. Temporary lane closures needed to remove pavement markings and apply temporary pavement markings will be permitted when approved by the engineer. Flaggers will be utilized for southbound traffic during short term lane closures for moving and delivery of construction equipment and materials. The STH 47 northbound detours will be removed after completion of stage 3.

Stage 4:

Stage 4A:

Install cross pipes under northbound lane of STH 47 at STA 175+75 and STA 189+65 and temporary gravel widening along northbound STH 47. Once temporary widening and cross pipes are installed, traffic will be shifted to temporary widening so the cross pipes under southbound lane of STH 47 can be installed. At culvert replacement area at STA 200+35, build temporary widening along southbound STH 47. Once southbound widening installed, shift traffic to temporary widening and install new culvert under northbound lane and install temporary widening along northbound lane. Shift traffic to temporary widening along northbound lane and install cross pipe under southbound lanes. Both northbound and southbound STH 47 lanes to be opened to traffic at end of each day with minimum driving surface of dense graded base.

All traffic will remain on STH 47. Maintain STH 47 traffic on gravel during the weekdays and asphalt during the weekend. During construction activities, traffic will be reduced to one lane along STH 47 and signalization using trailer mounted traffic signals with video actuation will be used to navigate traffic through the work zone . At times traffic will need to be shifted onto shoulder temporarily in order to complete construction activities.

Stage 4B:

Construct the northbound lane of STH 47 from 155+50 to CTH VV (north) and the intersections of Blacksmith Road, Rabbit Ridge Road, STH 55, and Oshkosh Road. Access will be maintained to CTH VV (south) and STH 55 at all times. Blacksmith Road, Rabbit Ridge Road, and Oshkosh Road will be closed during this stage.

All traffic will remain on STH 47. Maintain STH 47 traffic on gravel during the weekdays and asphalt during the weekend. An HMA pavement safety edge will need to be placed along the centerline every night after work is done for safety through reconstruction area to reduce drop off along centerline. During construction activities, traffic will be reduced to one lane along STH 47 and signalization using trailer mounted traffic signals with video actuation will be used to navigate traffic through the work zone. At times traffic will need to be shifted onto shoulder temporarily in order to complete construction activities.

Stage 5:

Construct the southbound lane of STH 47 from 155+50 to CTH VV (north) and the intersections of Fairgrounds Road, Lyons Road (south), Lyons Road (north), Wolf River Drive, and CTH VV (north).

Access will be maintained to CTH VV (north) at all times. Closures of side streets will occur throughout stage 5. Close Lyons Road (south) only when Lyons Road (north) is open and close Lyons Road (north) only when Lyons Road (south) is open. Close Courthouse Lane only when Wolf River Drive is open and close Wolf River Drive only when Courthouse Lane is open.

All traffic will remain on STH 47. Maintain STH 47 traffic on gravel during the weekdays and asphalt during the weekend. An HMA pavement safety edge will need to be placed along the centerline every night after work is done for safety through reconstruction area to reduce drop off along centerline. During construction activities, traffic will be reduced to one lane along STH 47 and flagging operations will be used to navigate traffic through the work zone.

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')	**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')	**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.

5. Municipality Acceptance of Sanitary Sewer and Water Main Construction.

Both the department and the Menominee Indian Tribe of Wisconsin personnel will inspect construction of sanitary sewer and water main under this contract. However, construction staking, testing, and acceptance of the sanitary sewer and water main construction will be by the Menominee Indian Tribe of Wisconsin.

stp-105-001 (20140630)

6. Holiday Work Restrictions.

Do not perform work on, nor haul materials of any kind along or across any portion of the highway carrying STH 47 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 periods:

- From noon Friday, May 15, 2020 to 6:00 AM Monday, May 18, 2020 for Veterans Pow-wow;
- From noon Friday, May 22, 2020 to 6:00 AM Tuesday, May 26, 2020 for Memorial Day;
- From noon Friday, July 3, 2020 to 6:00 AM Monday, July 6, 2020 for Independence Day;
- From noon Friday, July 31, 2020 to 6:00 AM Monday, August 3, 2020 for Menominee Nation Contest Pow-wow;
- From noon Friday, September 4, 2020 to 6:00 AM Tuesday, September 8, 2020 for Labor Day;
- From noon Friday, May 14, 2021 to 6:00 AM Monday, May 17, 2021 for Veterans Pow-wow;
- From noon Friday, May 28, 2021 to 6:00 AM Tuesday, June 1, 2021 for Memorial Day;
- From noon Friday, July 2, 2021 to 6:00 AM Tuesday, July 6, 2021 for Independence Day;
- From noon Friday, August 6, 2021 to 6:00 AM Monday, August 9, 2021 for Menominee Nation Contest Pow-wow;
- From noon Friday, September 5, 2021 to 6:00 AM Tuesday, September 7, 2021 for Labor Day;

stp-107-005 (20181119)

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 Dan Erva at (715) 365-5776.

stp-107-054 (20080901)

8. 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;
3. 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 (>104º 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)

9. Environmental Protection – Dewatering

General

Add the following to 107.18 of the standard specifications:

If dewatering is required, treat the water to remove suspended sediments by filtration, settlement or other appropriate best management practice prior to discharge. Submit the proposed means and methods of dewatering for each required location for approval as part of the Erosion Control Implementation Plan (ECIP). Include details of how the intake will be managed to not cause an increase in the background level turbidity prior to treatment and any additional measures necessary to prevent sediments from reaching the project limits or wetlands and waterways.

Guidance on Dewatering can be found on the Wisconsin Department of Natural Resources website located in the Storm Water Construction Technical Standards, Dewatering Code #1061, “Dewatering”. This document can be found at the WisDNR website: http://dnr.wi.gov/topic/stormwater/standards/const_standards.html

Work includes furnishing all materials, excavation, maintenance, cleaning, disposal of surplus material and removal of the dewatering system and is incidental to contract work.
(NCR 107.13-04012016)

Contaminated Groundwater

The Menominee Tribal Utility Department, under legislation adopted by the Tribal Government of the Menominee Indian Tribe of Wisconsin, prohibits the discharge of any groundwater, storm water, surface water, surface drainage, and hazardous materials (i.e., gasoline, benzene, naphtha, fuel oil, or other flammable or explosive liquid, solid or gas) into any sanitary sewer.

The department and others have completed testing for groundwater contamination at locations within and adjacent to this project where excavation is required. Based on the depth to groundwater and planned excavation depths, dewatering of petroleum hydrocarbon contaminated groundwater exceeding the DNR's Chapter NR 140 Enforcement Standards (ESs) and/or Preventive Action Limits (PALs) may be necessary during storm sewer and utilities installation at sites listed in Hazardous Materials Contamination and as shown on the plans.

If contaminated groundwater, strong petroleum odors or free-phase petroleum product, such as, gasoline floating on the water table, are encountered elsewhere within the project limits, then terminate dewatering activities in the area and notify the engineer.

Implement means and methods as necessary to accomplish dewatering and meet requirements for management of petroleum contaminated water. Dewatering means and methods implemented by the contractor, including location and depth of dewatering operations, pumping rates, length of dewatering area, and dewatering methods, such as, wells, well points, and/or sump pumps, will likely affect quantity and quality of recovered water. Employ dewatering methods and techniques in a manner that does not cause a discharge or migration of contaminants into uncontaminated areas.

Water generated from dewatering activities within the contaminated groundwater areas includes groundwater and water that may enter an excavation at ground surface, such as, rain water or storm water. Employ construction methods and techniques in a manner that will minimize the need for dewatering, and if dewatering is required, minimize the volume of water generated.

Coordinate dewatering activities within the contaminated groundwater areas under this contract with the department's engineer and environmental consultant. Do not treat, discharge or transport contaminated water off-site without prior approval from the engineer or environmental consultant.

Provide a schedule of operations in the contaminated groundwater areas to the engineer and environmental consultant at the pre-construction conference.

Provide the engineer and environmental consultant with a dewatering plan at least 45 calendar days prior to the scheduled date of beginning dewatering activities in the contaminated groundwater areas. Describe the proposed means and methods to accomplish dewatering and include scheduled start and end dates, estimated pumping rates and times, anticipated daily volumes, containerization, treatment methods and/or disposal location, and any other information pertinent to contaminated groundwater management.

Provide the engineer and environmental consultant with documentation of contaminated groundwater management and disposal within 90 calendar days after completion of construction dewatering activities.

All costs associated with dewatering activities within the contaminated groundwater areas shall be considered incidental to construction.

10. Utilities.

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

stp-107-065 (20080501)

There are known underground and overhead utility facilities located near or within the project limits. The contractor shall coordinate his construction activities with a call to Diggers Hotline or a direct call to utilities, which have facilities in the area, as required per statutes. The contractor shall use caution to ensure the entirety of underground facilities and shall maintain code clearance from overhead facilities at all times.

The utilities on this project are Alliant Energies, Frontier Communications, Charter Communications, and the Menominee Indian Tribe of Wisconsin.

Alliant Energy has overhead and underground facilities within the project limits. Facilities run from station 83+60 to station 203+20 approximately 30 to 70 feet from the reference line.

Alliant has overhead and underground crossings throughout the project corridor. New poles will be installed at the following locations: 83+60 RT, 83+60 LT, 84+60 LT, 86+41 RT, 87+67 LT, 87+91 RT, 90+13 RT, 90+58 RT, 91+60 LT, 93+03 RT, 95+37 RT, 96+11 RT, 96+13 LT, 98+26 LT, 100+38 RT, 102+48 RT, 103+95 LT/RT, 106+03 RT, 107+28 RT, 109+24 LT/RT, 111+12 RT, 111+47 RT, 111+80 RT, 117+67 RT, 118+91 RT, 120+42 LT/RT, 121+85 RT, 122+66 LT, 123+40 RT, 123+86 RT, 125+69 RT, 125+79 LT, 126+84 RT, 128+41 RT, 129+64 RT, 131+22 RT, 132+65 RT, 134+00 RT, 135+39 RT, 142+28 LT, 144+87 LT, 152+87 RT, 154+03 RT (to be installed after box culvert is completed), 155+83 RT, 156+79 RT, 158+60 RT, 159+53 RT, 161+80 RT, 165+48 RT, 166+00 RT, 170+48 RT, 173+39 RT, 174+81 LT/RT, 177+31 RT, 179+67 RT, 181+50 RT, 183+94 RT, 186+29 RT, 187+78 RT, 189+26 RT, 191+16 RT, 192+07 RT, 193+98 RT, 195+90 RT, 197+65 LT, 198+38 RT, and 200+64 RT.

Frontier Communications has overhead and underground communications along the project corridor. In general, Frontier will be placing their new lines approximately 3 feet inside of the right-of-way. Frontier will be abandoning most of their old cable to install new fiber and telephone throughout the project. They will be placing new facilities joint with Alliant Energy.

Charter Communications also has communication cable along the project corridor. Charter Communications' designer stated that the project is out for fielding and will be completed by Friday, October 4, 2019.

Menominee Indian Tribe of Wisconsin has water distribution facilities within the project limits. At all locations where the proposed storm sewer pipe will be crossing the water main, 2-inch Insulation Board Polystyrene will be installed. Water main valve and hydrant adjustments will be done throughout the project to accommodate the grade changes.

The hydrant at station 103+25, RT will be salvaged and reinstalled to avoid the proposed sidewalk. Bends will be installed to avoid conflict with the proposed storm sewer.

The hydrant at station 109+61, RT will be extended to the west approximately 5 feet.

Bends will be installed at storm sewer crossing locations 103+22 and 185+25 to avoid conflict.

Menominee Indian Tribe of Wisconsin has sanitary sewer facilities within the project limits. Manhole covers will be adjusted throughout the project to accommodate for the change in grade.

11. Erosion Control Structures.

Within seven calendar days after beginning work on the bridge superstructure, place all permanent erosion control devices, including riprap, erosion mat, ditch checks, seed, fertilizer, mulch, soil stabilizer, or any other item required by the contract or deemed necessary by the engineer. These devices shall be in place in the area under the bridge and on both sides of the roadway, from the waterway to a point 100-feet behind the backwall of the abutment. Within said limits, place these devices 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. Before initial construction operations, place turbidity barriers, silt screens, and other temporary erosion control measures as the plans show, and remove them after the permanent erosion control devices are in place unless directed otherwise by the engineer.

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 (20030820)

12. Hazardous Materials Contamination

The following sites are known or suspected to have hazardous materials contamination:

Site Name and Location	Description
Wolf River Express/ Former Trading Post N845 Hwy. 47/55 Keshena, WI DNR BRRTS No. 03-40-001523	Petroleum contaminated soil and groundwater exceeding NR 720 and NR 140 standards, respectively, are present beneath STH 47 easement.

	Petroleum Contaminated Soil within Construction Limits: Station 152+75 to Station 153+40, from reference line to project limit LT of reference line, at a depth of approximately 2 to 10 feet below existing grade. Petroleum hydrocarbons were detected in soil, including ethylbenzene (45,300 micrograms per kilogram (µg/kg)), naphthalene (65,700 µg/kg), toluene (2,690 µg/kg), total trimethylbenzenes (367,900 µg/kg), total xylenes (245,300 µg/kg), and total lead (136 milligrams per kilogram (mg/kg)). Petroleum Contaminated Groundwater within Construction Limits: Station 152+75 to Station 153+40, from reference line to project limit LT of reference line; depth to groundwater approximately 6 feet below existing grade. Petroleum hydrocarbons were detected in groundwater within project limits, including ethylbenzene (72.2 micrograms per liter (µg/L)), naphthalene (70.5 µg/L), toluene (4.8 µg/L), total trimethylbenzenes (429.4 µg/L), and total xylenes (330.1 µg/L).
Legendz Bait & Tackle N848 Hwy. 47/55 Keshena, WI	Petroleum contaminated soil exceeding NR 720 standards and petroleum contaminated groundwater below NR 140 standards are present beneath STH 47 easement. Petroleum Contaminated Soil within Construction Limits: Station 153+55 to Station 153+95, from reference line to project limit RT of reference line, at a depth of approximately 2 to 7 feet below existing grade. Petroleum hydrocarbons were detected in soil, including naphthalene (874 µg/kg) and total lead (34.9 mg/kg). Petroleum Contaminated Groundwater within Construction Limits: Station 153+55 to Station 153+95, from reference line to project limit RT of reference line; depth to groundwater approximately 6 feet below existing grade. Naphthalene (5.9 µg/L) was detected in groundwater within project limits.

For further information regarding approval of the soil and groundwater management methods or to obtain a copy of the various hazardous materials investigation reports for this project, contact one of the following persons:

Greer Lundquist
Wisconsin Department of Transportation
501 Hanson Lake Road
Rhinelander, WI 54501
Telephone: (715) 365-5758
Email: Greerl.Lundquist@dot.wi.gov.

Kyle Wagoner
AECOM Technical Services
200 Indiana Avenue
Stevens Point, WI 54481
Telephone: (715) 342-3038

Email: kyle.wagoner@aecom.com

13. Health and Safety Requirements for Workers Remediating Petroleum Contamination.

Add the following to standard spec 107.1(2):

Soil contamination with gasoline, diesel fuel, fuel oil, or other petroleum related products may be encountered during excavation activities. Prepare a site specific Health and Safety Plan complying with the Occupational Safety and Health Administration (OSHA) standard for Hazardous Waste Operation and Emergency Response (HAZWOPER), 29 CFR 1910.120.

All site workers taking part in remediation activities or who will have the reasonable probability of exposure of safety or health hazards associated with the hazardous material shall have completed Health and Safety training that meets OSHA requirements. Before the start of remediation work, submit to the engineer a site specific Health and Safety Plan, and written verification that workers will have completed up-to-date OSHA training.

Develop, delineate, and enforce the health and safety exclusions zones for each contaminated site location pursuant to 29 CFR 1910.120.

stp-107-115 (20150630)

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

John Roelke, License Number AII-119523, inspected Structure B-73-4 for asbestos on January 23, 2018. No regulated Asbestos Containing Material (RACM) was found on this structure. A copy of the inspection report is available from: Dan Erva, (715) 365-5776.

A visual inspection of structure C-73-4 was completed and no possible ACM was found. WisDOT agreed a formal asbestos inspection was not necessary do to the lack of possible ACM material.

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 Dan Erva, (715) 365-5776 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-73-4, STH 47 over Wolf River
- Site Address: 0.3M N jct STH 55 to N and 0.6M S jct CTH C
- Ownership Information: WisDOT Transportation Northcentral Region, 510 N. Hanson Lake Rd., Rhinelander, Wisconsin 54501
- Contact: Dan Erva
- Phone: (715) 365-5776
- Age: 32 years old. This structure was constructed in 1986
- Area: 13334 SF of deck

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

- Site Name: Structure C-73-2, STH 47 over Keshena Lake Outlet
- Site Address: Intersection of CTH VV/STH 47, Village of Keshena, Menominee County
- Ownership Information: WisDOT Transportation Northcentral Region, 510 N. Hanson Lake Rd., Rhinelander, Wisconsin 54501
- Contact: Dan Erva
- Phone: (715) 365-5776
- Age: 88 years old. This structure was constructed in 1930
- Area: 2,500 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.

15. Native American Hiring.

Pre-Bid

Before bid submittal, contact the Menominee Indian Tribe of Wisconsin to provide information on hiring procedures and future employment opportunities, and gather information on the tribal work force.

Menominee Indian Tribe of Wisconsin tribal labor office contact information:

Contact: Ann Marie Johnson

Address: N559 Library Road, P.O. Box 910, Keshena, WI 54135

Office: (715) 799-5171

Email: ajohnson@mitw.org

Maintain documentation of all efforts made to communicate with the Menominee Indian Tribe of Wisconsin (MITW). Pre-bid, submit documentation in conjunction with the Proposal Request Form to the Bureau of Project Development at:

DOTDTSDHighwayConstructionContractors@dot.wi.gov

The Eligible Bidders list will not be updated until this documentation is received. Include the following information in documentation:

- Proposal number/route number/termini/county
- Persons contacted
- Method of communication (phone, email, written, in person)
- Information exchanged (hiring procedures, available positions, referrals received, employee performance, etc.)

After Execution

At a minimum of three days before the tribal coordination meeting, contact the MITW to provide the following information regarding available employment opportunities for prime and subcontractors:

- Job classification/trade
- Job qualifications and required skills
- Employment period
- Wage
- Copy of job application

After receiving employment opportunities, the MITW will within two business days provide employment referrals or provide other recruitment sources to obtain qualified referrals.

Document all efforts made to communicate job opportunities and the results of hiring activities throughout the life of the contract. At any time during the life of the contract, provide MITW communication documentation within five business days of request by the department.

Tribal Coordination Meeting

Between execution of contract and the project preconstruction conference, setup and coordinate a meeting with the Tribal officials and leaders at MITW and notify and invite WisDOT Statewide Tribal Liaison, 4822 Madison Yards Way, 4th Floor South, P.O. Box 7965, Madison, WI 53707-7965, ryan.greendeer@dot.wi.gov, (608) 267-3615. The prime contractor and all subcontractors shall attend this meeting. Discuss available employment opportunities and other tribal areas of interest such as scope of work, Tribal regulations, borrow sites, waste sites, and available aggregate.

Project Completion

As a part of the document submittals required under standard spec 109.7, submit documentation summarizing communications regarding job opportunities throughout the life of the contract. Provide final report to the tribe and Statewide Tribal Affairs compiling the results of hiring activities for the prime contractor as well as for subcontractors at all tiers.

stp-107-200 (20190618)

16. MITW Permits.

Storm water and surface water permits through MITW have been obtained. Submit a Stormwater Pollution Prevention Plan (SWPPP) to MITW Environmental Services and review it with WisDOT Stormwater and Erosion Control Engineer for consistency with TRANS 401. Submit the Notice of Termination to MITW upon completion of the project.

Obtain the required MITW Construction Permit. Satisfy all requirements of the MITW Construction Permit including payment of the applicable tax.

17. Coordination with Businesses and Residents.

The contractor shall arrange and conduct a meeting between the contractor, the department, affected residents, local officials and business people to discuss the project schedule of operations including vehicular and pedestrian access during construction operations. Hold the first meeting at least one week before the start of work under this contract and weekly after that. The contractor shall arrange for a suitable location for meetings that provides reasonable accommodation for public involvement. The department will prepare and coordinate publication of the meeting notices and mailings for meetings. The contractor shall schedule meetings with at least 2 weeks prior notice to the engineer to allow for these notifications.

18. Removing Old Structure Over Waterway With Minimal Debris Station 154+20, Item 203.0600.S.

Conform to standard spec 203 as modified in this special provision.

Add the following to standard spec 203:

203.3.6 Removals Over Waterways and Wetlands

203.3.6.2 Removing Old Structure Over Waterway with Minimal Debris

(1) Remove the existing structure C-73-2 over the Keshena Lake Outlet in large sections and conforming to the contractor's approved structure removal and clean-up plan. During superstructure removal, prevent all large pieces and minimize the number of small pieces from entering the waterway or wetland. Remove all reinforcing steel, all concrete, and all other debris that falls into the waterway or wetland. The contractor may leave limited amounts of small concrete pieces scattered over the waterway floor or wetland only if the engineer allows.

(2) Submit a structure removal and clean-up plan as part of the erosion control implementation plan required under standard spec 107.20. Do not start work under the structure removal and clean-up plan without the department's written approval of the plan. Include the following information in the structure removal and clean-up plan:

- Methods and schedule to remove the structure.
- Methods to control potentially harmful environmental impacts.
- Methods for superstructure removal that prevent all large pieces and minimize the number of small pieces from entering the waterway or wetlands.
- Methods to control dust and contain slurry.
- Methods for removing piers and abutments. If blasting in water, include restrictions that regulatory agencies and the contract require.
- Methods for cleaning the waterway or wetlands.

(3) If stockpiling spoil material, place it on an upland site an adequate distance from the waterway, wetland, or any open water created by excavation. Install silt fence between the spoil pile and the waterway, wetland, or excavation site.

Add the following Removing Old Structure bid item to standard spec 203.5.1:

ITEM NUMBER	DESCRIPTION	UNIT
203.0600.S	Removing Old Structure Over Waterway With Minimal Debris Station 154+20	LS

stp-203-020 (20190618)

19. Excavation, Hauling, and Disposal of Petroleum Contaminated Soil, Item 205.0501.S.

A Description

A.1 General

This special provision describes excavating, loading, hauling, and disposing of petroleum contaminated soil at a DNR approved bioremediation facility. The closest DNR approved bioremediation facility is:

Marathon County Solid Waste Department Landfill
R18500 East Wisconsin Highway 29
Ringle, WI 54471
Contact: Meleesa Johnson, Director
Telephone: (715) 446-3101, ext. 104
Email: meleesa.johnson@co.marathon.wi.us

Perform this work conforming to standard spec 205 and Chapters NR 700-754 of the Wisconsin Administrative Code, as supplemented herein. Per NR 718.07, a solid waste collection and transportation service-operating license is required under NR 502.06 for each vehicle used to transport contaminated soil.

A.2 Notice to the Contractor – Contaminated Soil Locations

The department completed testing for soil and groundwater contamination for locations within this project where excavation is required. Testing indicated that petroleum-contaminated soil is present at the following locations the plans show:

1. Station 152+75 to 153+40 LT.
2. Station 153+55 to 153+95 RT.

If contaminated soils are encountered elsewhere on the project, terminate excavation activities in the area and notify the engineer.

For further information regarding previous investigation and remediation activities at these sites contact:

Name: Greer Lundquist
Address: 501 Hanson Lake Road, Rhinelander, WI 54501
Phone: (715) 365-5758
e-mail: GreerI.Lundquist@dot.wi.gov

A.3 Coordination

Coordinate work under this contract with the environment consultant:

Consultant: AECOM Technical Services
Address: 200 Indiana Avenue, Stevens Point, WI 54481
Contact: Kyle Wagoner
Phone: (715) 342-3038
e-mail: kyle.wagoner@aecom.com

The role of the environmental consultant will be limited to:

1. Determining the location and limits of contaminated soil to be excavated based on soil analytical results from previous investigations, visual observations, and field screening of soil that is excavated;
2. Identifying contaminated soils to be hauled to the bioremediation facility;
3. Documenting that activities associated with management of contaminated soil are in conformance with the contaminated soil management methods for this project as specified herein; and
4. Obtaining the necessary approvals for disposal of contaminated soil from the bioremediation facility.

Provide at least a 14-calendar day notice of the preconstruction conference date to the environmental consultant. At the preconstruction conference, provide a schedule for all excavation activities in the areas of contamination to the environmental consultant. Also notify the environmental consultant at least three calendar days before beginning excavation activities in each of the contaminated areas.

Coordinate with the environmental consultant to ensure that the environmental consultant is present during excavation activities in the contaminated areas. Perform excavation work in each of the contaminated areas on a continuous basis until excavation work is completed.

Identify the DNR approved bioremediation facility that will be used for disposal of contaminated soils, and provide this information to the environmental consultant no later than 30 calendar days before beginning excavation activities in the contaminated areas or at the preconstruction conference, whichever comes first. The environmental consultant will be responsible for obtaining the necessary approvals for disposal of contaminated soils from the bioremediation facility. Do not transport contaminated soil offsite without prior approval from the environmental consultant.

A.4 Health and Safety Requirements

Add the following to standard spec 107.1:

During excavation activities, expect to encounter soil contaminated with gasoline, diesel fuel, fuel oil, or other petroleum related products. Site workers taking part in activities that will result in the reasonable probability of exposure to safety and health hazards associated with hazardous materials shall have completed health and safety training that meets the Occupational Safety and Health Administration (OSHA) requirements for Hazardous Waste Operations and Emergency Response (HAZWOPER), as provided in 29 CFR 1910.120.

Prepare a site-specific Health and Safety Plan, and develop, delineate and enforce the health and safety exclusion zones for each contaminated site location as required by 29 CFR 1910.120. Submit the site-specific health and safety plan and written documentation of up-to-date OSHA training to the engineer before the start of work.

B (Vacant)

C Construction

Add the following to standard spec 205.3:

Control operations in the contaminated areas to minimize the quantity of contaminated soil excavated.

The environmental consultant will periodically evaluate soil excavated from the contaminated areas to determine if the soil will require offsite bioremediation. The environmental consultant will evaluate excavated soil based on field screening results, visual observations, and soil analytical results from previous environmental investigations. Assist the environmental consultant in collecting soil samples for evaluation using excavation equipment. The sampling frequency shall be a maximum of one sample for every 15 cubic yards excavated.

Directly load and haul soils designated by the environmental consultant for offsite bioremediation to the DNR approved bioremediation facility. Use loading and hauling practices that are appropriate to prevent any spills or releases of petroleum-contaminated soils or residues. Before transport, sufficiently dewater soils designated for off-site bioremediation so as not to contain free liquids.

D Measurement

The department will measure Excavation, Hauling, and Disposal of Petroleum Contaminated Soil in tons of contaminated soil, accepted by the bioremediation facility as documented by weight tickets generated by the bioremediation facility.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
205.0501.S	Excavation, Hauling, and Disposal of Petroleum Contaminated Soil	Ton

Payment is full compensation for excavating, segregating, loading, hauling, and treatment via bioremediation of contaminated soil; obtaining solid waste collection and transportation service operating licenses; assisting in the collection soil samples for field evaluation; and dewatering of soils before transport, if necessary.

stp-205-003 (20150630)

20. Precast Concrete Wingwalls C-73-4, Item 504.1000.S.

A Description

This special provision describes furnishing, transporting, and placing precast wingwalls and cutoff walls.

B (Vacant)

C Construction

Alternate details for the precast wingwall units of equal strength and hydraulic capacity may be submitted to the engineer for approval. The contractor may build department-approved cast-in-place wingwalls as an alternative to precast apron endwalls. Build these endwalls conforming to standard spec 504.2 and standard spec 504.3.

D Measurement

The department will measure Precast Concrete Wingwalls C-73-4, completed according to the contract and accepted, as a single complete unit of work. Each unit shall consist of the two precast wingwalls required for the box culvert.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
504.1000.S.	Precast Concrete Wingwalls C-73-4	LS

Payment is full compensation for furnishing, transporting and placing the precast wingwalls and precast cutoff walls.

21. Precast Concrete Box Culvert, 6 FT x 3 FT, Item 504.2000.S.

A Description

This special provision describes furnishing and installing precast concrete box culverts of the size and length the plans show.

B Materials

Provide materials and fabricate Precast Concrete Box Culvert according to ASTM C1577, except that the concrete mixture shall contain not less than 565 pounds of Portland cement, blended cement or Portland cement plus pozzolanic admixture per cubic yard. Slab thickness, areas of reinforcement, and other details shall be as the plans show.

C (Vacant)

D Measurement

The department will measure Precast Concrete Box Culvert, 6 FT x 3 FT, completed according to the contract and accepted, in length by the linear foot in place. The box culvert will be measured on the centerline of the box along the flow line.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
504.2000.S.	Precast Concrete Box Culvert, 6 FT x 3 FT	LF

Payment is full compensation for furnishing, hauling and placing the box, including joint ties, and mastic.

stp-504-015 (20160607)

22. Cleaning Parapets, Item 509.9050.S.

A Description

This special provision describes cleaning the inside faces and top surface of the concrete parapet as the plans show and as the engineer directs.

B (Vacant)

C Construction

C.1 Blast Cleaning Operation

Blast clean the inside face and top surface of the concrete parapet according to SSPC SP-13 and ASTM D4259 for an abrasive blast cleaning to a surface roughness and finish as the engineer directs. Before abrasive blast cleaning operations are to begin for the entire bridge parapet, prepare a representative trial area on the parapet concrete surface, and have the method of blast cleaning approved by the engineer.

C.2 Water Cleaning Operation

After abrasive blast cleaning operations are completed, clean the prepared parapet surface with water according to ASTM D4258. Remove with this water cleaning all dust and loose material from the parapet inside face and top that is to be coated with pigmented surface sealer. Provide an adequate drying time of the parapet inside face and top surface of at least 24 hours before coating with the pigmented surface sealer. Remove all loose concrete, dirt, dust, or blast material that remains on the bridge deck, as the engineer directs.

D Measurement

The department will measure Cleaning Parapets in length by the linear foot of parapet, acceptably cleaned.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
509.9050.S	Cleaning Parapets	LF

Payment is full compensation for abrasive blast cleaning; for water cleaning; and for all additional clean up of the concrete surface and surrounding bridge deck area.

stp-509-050 (20151210)

23. Sheet Membrane Waterproofing for Top Slab C-73-4, Item 516.0610.S.

A Description

This special provision describes providing a primer, waterproofing membrane, hot rubberized sealer or mastic, or both, on the concrete top slab as the plans show.

B Materials

B.1 Waterproofing System

Provide a material in the waterproofing system that is specifically designed for use with an asphaltic concrete overlay. The membrane shall consist of a cold-applied, self-adhering membrane incorporating a heat resistant woven or non-woven fabric or fiberglass reinforcing laminated in between layers of polymer modified bitumen or SBS modified rubberized asphalt. The membrane shall have a release film, polyester or polyethylene on the down side and may have a thin spun bonded open weave polyester fabric on the up side that will bond with the asphaltic concrete overlay; yet will permit driving rubber-tired trucks, pavers and other construction vehicles on the membrane covered slab.

Provide a composite sheet membrane with the following properties:

Property	Test Method	Specific Value
Width		36 inch min.
Tensile Strength	ASTM D412	50 lb/inch or 700 psi min.
Thickness		60 mils to 80 mils
Puncture Resistance	ASTM E154	40 lb min.
Permeance	ASTM E96, Method B	0.05 US Perms max.
Low Temperature Pliability	ASTM D146, 1-inch Mandrel @ -25º F	No cracks or splits at 180º bend
Water Absorption	ASTM D570, 72 hours	0.25% max.
Peel Adhesion	ASTM D903	5 lb/in width min.
Compound Softening Point	ASTM D36	210º F ±20º F

Provide rubberized asphalt compound containing not more than 15% inorganic residue or filler material.

Provide primer, mastic and/or hot rubberized asphalt sealer conforming to the specified properties required by the manufacturer of the waterproofing membrane.

B.2 Materials Certification

Before membrane approval for initial submittals and/or upon reformulation of membrane material compounds, submit to the engineer a notarized certification by an independent test laboratory stating that the materials conform to the requirements of these specifications.

The certification shall include or have attached specific results of tests performed on the material supplied. The engineer may at his option require samples of any material for testing. Previously approved

membranes will be provisionally accepted by manufacturer's certification on their company letterhead, but may be subject to control or approval, or both by subsequent testing.

C Construction

C.1 Application Methods

Apply materials in strict accordance to the manufacturer's instructions. In order to install the waterproofing membrane, the slab temperature shall be a minimum of 45º F and rising. Before applying the system, become acquainted with the materials specified and their handling characteristics and become thoroughly familiar with the construction procedures recommended by the manufacturer. Furnish a copy of the recommended procedures to the engineer. To establish procedures for maintaining optimum working conditions and to coordinate work related to adjacent construction, hold a pre-installation conference with a manufacturer's representative, the engineer, and other affected contractors before starting construction. To provide quality assurance that the membrane has been properly installed, a manufacturer's representative familiar with membrane installation procedures shall be present during placement of the membrane.

Finish all concrete surfaces that will be in contact with the membrane with a magnesium float finish. Provide a minimum concrete cure time of seven days before placing the primer.

The slab shall be clean, dry, and free from mud, dirt, sand, oil, or grease, and any other contaminants before application of the primer. No vehicles or equipment will be permitted on the concrete slab after surface preparation except those necessary for the installation of the waterproofing membrane. The engineer will inspect the concrete slab before the application of the primer. Do not begin application of either the primer or membrane until after the engineer grants approval.

To coat all surfaces that will be covered with the membrane, apply primer uniformly as recommended by the manufacturer. Use roller, brush, or spray to apply primer to the surfaces. If spraying is used, an approved method of protecting the environment is required.

Allow the primer to dry until tack free, approximately 45 minutes, before applying the membrane. Apply primer only to an area that will be covered with the membrane within the same calendar day. If the surface of the concrete slab becomes contaminated, clean and re-prime the area.

Apply primer to the inside face of any header to the top of the header. Take care to ensure that all inside corners are coated with primer.

After the primer has dried to a tack free condition, apply one layer of membrane to the slab starting on the low side edge.

To form a bond with the primed slab, remove the release film from the membrane on the tacky side while the membrane is rolled face down. Apply the membrane using hand methods or by using mechanical applicators. Overlap a minimum of 2.5 inches at the edges of each strip and overlap the membrane in such a manner to provide a shingling effect toward the low side of the slab cross section. Overlap a minimum of 5 inches at the ends of each strip of membrane and overlap the membrane in such a manner to provide a shingling effect toward the lower side of the slab profile. Roll the entire membrane surface with a rubber tire roller to ensure firm and uniform contact with the primed surface. Use special care to ensure that the membrane is uniformly adhered to the concrete and that the entire membrane is free of wrinkles, air bubbles, and other placement defects. In the event bubbles or blisters do form under the membrane, puncture the bubbles or blisters with a sharp pointed instrument such as an awl and press the membrane firmly into contact with the slab. Repair any membrane punctures, tears, holes, and misaligned or inadequate seams with a patch of waterproofing membrane sized as required to ensure that the membrane is watertight.

Cover the inside corners of any concrete header and all other perimeter edges with narrow strips (flashing strips of approximately 12 inches), hot rubberized sealer, or mastic according to the manufacturer's guidelines. As an additional method of ensuring a watertight bond, all terminating edges, transverse overlaps and longitudinal overlaps may be heated with a propane torch to soften the top mat and fuse the surfaces together.

The applicator foreman or leadworker shall be certified by the manufacturer of the waterproofing membrane as approved applicators, and shall be present during all applications.

C.2 Where Overlaying the Membrane Directly with Asphaltic Concrete

Construct the asphaltic concrete overlay according to scheduling requirements elsewhere in the contract. Cover all of the exposed membrane with the specified asphaltic concrete mix within five days after installation. Only rubber-tired construction vehicles shall be permitted on the membrane. Use caution not

to turn the tires when a vehicle is stationary. To prevent tearing the membrane, avoid sudden starts, stops, accelerations, or decelerations. Chemical solvents, gasoline, diesel fuel, mineral spirits, etc. or other deleterious substances shall not be spilled or leaked onto the membrane. Before covering the membrane with asphaltic concrete overlay, clean the membrane of mud, dirt, sand, oil, grease, or any other contaminants, and dry the membrane. Patch contaminated areas as required by the engineer. When required to accommodate traffic control staging, the construction of the asphaltic concrete overlay shall stay at least 6 inches away from the terminating edge of the membrane to provide for overlap.

The placement temperature of the asphaltic concrete shall be between 300º F and 350º F. Do not place asphaltic concrete on the membrane outside of this temperature range. The temperature of the uncompacted mat of asphaltic concrete shall not fall below 280º F before rolling. The thickness of the asphaltic concrete layers shall be as the plans show; the initial layer shall have a minimum compacted thickness of 1 1/2 inches. The membrane applicator contractor shall have a minimum of one employee present during all asphaltic concrete paving operations to ensure that all necessary membrane repairs are accomplished.

C.3 Where Not Overlaying the Membrane Directly with Asphaltic Concrete

Place a 6-inch-thick layer of clean granular fill material (sand), free of any aggregate, stones or other angular materials that may puncture the membrane, over the membrane covered slab. Cover all exposed membrane with the clean granular fill within five days after installation. Only rubber-tired construction vehicles shall be permitted on the membrane. Use caution not to turn the tires when a vehicle is stationary. To prevent tearing the membrane, avoid sudden starts, stops, accelerations, or decelerations. Chemical solvents, gasoline, diesel fuel, mineral spirits, or other deleterious substances shall not be spilled or leaked onto the membrane. When required to accommodate traffic control staging, the placement of fill material shall stay at least 12 inches away from the terminating edge of the membrane to provide for overlap. The membrane applicator contractor shall have a minimum of one employee present during the placement of the clean granular fill material to ensure that all necessary membrane repairs are accomplished.

D Measurement

The department will measure Sheet Membrane Waterproofing for Top Slab (Structure), installed according to the contract and accepted, in area by the square yard. Measurement shall be based on the horizontal distance between the faces of any concrete headers and the horizontal length of membrane installed. Any material specified to be applied up vertical faces of any header or vertically down at the ends of the slab shall be included in the measured quantity.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
516.0610.S	Sheet Membrane Waterproofing for Top Slab C-73-4	SY

Payment is full compensation for furnishing and placing the primer, membrane, mastic, and hot rubberized asphalt sealer; and preparing the surface. Clean granular fill material (sand), where required, will be paid for using the bid item Backfill Structure.

stp-516-061 (20190618)

24. Adjusting Manhole Covers.

This special provision describes adjusting manhole covers conforming to standard spec 611 as modified in this special provision.

Adjust manhole covers located in pavement areas in two separate operations. Initially, remove designated manhole covers along with sufficient pavement to permit installation of temporary cover plate over the opening. Fill the excavated area with asphaltic pavement mixture, which shall remain in place until contract milling and paving operations permit setting the manhole frames to grade. During the second phase, remove the asphaltic pavement mixture surrounding the manhole plus the temporary cover plate, and set the manhole cover to final grade. The department will measure and pay for the items of asphaltic pavement mixture, temporary cover plate, milling, and paving separately.

Revise standard spec 611.3.7 by deleting the last paragraph.

Set the manhole frames so that they comply with the surface requirements of standard spec 450.3.2.9. At the completion of the paving, a 6-foot straightedge shall be placed over the centerline of each manhole

frame parallel to the direction of traffic. A measurement shall be made at each side of the frame. The two measurements shall be averaged. If this average is greater than 5/8 inches, reset the manhole frame to the correct plane and elevation. If this average is 5/8 inches or less but greater than 3/8 inches, the manhole frame shall be allowed to remain in place but shall be paid for at 50 percent of the contract unit price.

If the manhole frame is higher than the adjacent pavement, the two measurements shall be made at each end of the straightedge. These two measurements shall be averaged. The same criteria for acceptance and payment as above, shall apply.

stp-611-005 (20030820)

25. Cover Plates Temporary, Item 611.8120.S.

A Description

This special provision describes providing and removing steel plates to cover and support asphaltic pavement and traffic loading at manholes, inlets and similar structures during milling and paving operations.

B Materials

Provide a 0.25 inch minimum thickness steel plate that extends to the outside edge of the existing masonry.

C (Vacant)

D Measurement

The department will measure Cover Plates Temporary as each individual 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
611.8120.S	Cover Plates Temporary	EACH

Payment is full compensation for furnishing, installing, and removing the cover plates.

The steel plates shall become the property of the contractor when no longer needed in the contract work.

stp-611-006 (20151210)

26. Insulation Board Polystyrene, 2-Inch, Item 612.0902.S.01.

A Description

This special provision describes furnishing and placing polystyrene insulation board as the plans show.

B Materials

Provide polystyrene insulation board that conforms to the requirements for Extruded Insulation Board, AASHTO Designation M230 as modified in this special provision.

Delete flammability requirement.

B.1 Certification

Before installation, obtain from the manufacturer a certification indicating compliance and furnish it to the project engineer.

C (Vacant)

D Measurement

The department will measure Insulation Board Polystyrene (size) by area in square yards of work 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
612.0902.S.01	Insulation Board Polystyrene 2-Inch	SY

Payment is full compensation for all excavation; and for furnishing and placing the insulation board.

stp-612-005 (20030820)

27. Fence Chain Link Salvage 5-ft.

Conform to section 616 of the standard specifications as modified in this special provision.

Elements of the existing fence system that are failing or deteriorating, as determined by the engineer, shall be replaced with new fence components.

Fence system shall be removed only as necessary to complete deck repairs and to replace failing and deteriorated fence components.

In locations where fence posts are removed, fill sleeve and bevel away from post with non-shrink grout after setting post. Leave no voids. Grout shall be paid for under the “Non-Shrink Grout Bid Item”.

28. Sod Water, Item 631.0300.

Replace standard spec 631.3.5(1) with the following:

Under the Sod Water bid item, furnish and apply water to sodded or seeded areas.

Moisten sodded or seeded areas thoroughly after staking and cleanup.

Keep all sodded or seeded areas thoroughly moist by applying a minimum of 1 inch of water per week, minus applicable rainfall, for a minimum of 30 consecutive days. Do not leave un-watered for more than 3 days unless rainfall is sufficient and the engineer determines it does not require watering. Apply water in a manner to preclude washing or erosion.

ncr-631-005 (20151215)

29. Temporary Portable Rumble Strips, Item 643.0310.S.

A Description

This special provision describes providing, relocating, maintaining, and removing temporary portable rumble strips.

B Materials

Furnish RoadQuake2 or Roadquake2F temporary portable rumble strips, by Plastic Safety Systems. Do not use alternate products or methods without preapproval by the Bureau of Traffic Operations.

C Construction

C.1 Placement

Provide rumble strips where the plans show or the engineer directs as follows:

1. Before placing rumble strips, clean the roadway of sand and other materials that may cause slippage.
2. Place one end of the rumble strips 6 inches from the roadway centerline. Extend the strips perpendicular to the direction of travel. Ensure strips lay flat on the roadway surface.
3. Only one series of rumble strips, placed before the first work zone, is required per direction of travel for multiple work zones spaced 1 mile or less apart. Work zones spaced greater than 1 mile apart require a separate series of rumble strips.

C.2 Maintenance

Maintain rumble strips as follows:

1. If rumble strips slide, become out of alignment, or are no longer in the wheel path of approaching vehicles during the work period, thoroughly clean both sides of the rumble strips and reset on a clean roadway.
2. Repair or replace damaged rumble strips immediately.

D Measurement

The department will measure temporary portable rumble strips as a single lump sum unit of work 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
643.0310.S	Temporary Portable Rumble Strips	LS

Payment is full compensation for providing, relocating, maintaining or replacing, and removing temporary portable rumble strips.

stp-643-020 (20161130)

30. Locating No-Passing Zones, Item 648.0100.

For this project, the spotting sight distance in areas with a 55 mph posted speed limit is ***Select from drop-down.***.

stp-648-005 (20060512)

31. Electrical Service Meter Breaker Pedestal STH 47 & Warrington Rd, Item 656.0200.01; Electrical Service Meter Breaker Pedestal STH 47 & Tribal Office Loop, Item 656.0200.01; Electrical Service Meter Breaker Pedestal STH 47 & Lyons Rd, Item 656.0200.01; Electrical Service Meter Breaker Pedestal STH 47 & STH 55, Item 656.0200.01

Replace standard spec 656.2.3, Meter Breaker Pedestal Service, paragraph (1) with the following:

Furnish an approved service having a meter breaker pedestal, 22,000-AIC circuit breakers unless the local utility requires otherwise, grounding electrodes and connections, conduit and fittings, and all necessary conductors and equipment required by the WSEC and the utility for a service connection. Furnish a pedestal with a 100 A 2-pole main breaker and a 30 A spare breaker. When the meter breaker pedestal is energized, install an approved meter seal at all access points on the meter trough. Meter shall be time of use type.

32. Pedestrian Push Buttons, Item 658.0500.

Replace Subsection 658.2(5) with the following:

Band a R10-25 series sign directly above each push button as the plans show.

33. Luminaires Utility LED-B, Item 659.1120.

Replace Subsection 659.2 with the following:

(2) Furnish Leotek Green Cobra LED Model #GCM2-40H-MV-NW-3R-GY-950-PCR7-WL-WISDOT-B-SC light fixtures from the WisDOT approved products list.

34. Non-Shrink Grout, Item SPV.0025.01.

A Description

This special provision describes furnishing and placing non-shrink grout.

B Material

Furnish a quick-setting, rapid strength gain, and high-bond strength non-shrink grout. Grout shall not contain calcium chloride or admixture containing calcium chloride or other ingredient in sufficient quantity to cause corrosion to steel reinforcement. Mix grout just prior to use according to the manufacturer's instructions. Follow manufacturer's recommendation for dosage of corrosion inhibitor admixture.

Use structural non-shrink grout that meets a minimum compressive strength of 4,000 psi within 24 hours when tested as specified in AASHTO T 106. Meet all the requirements of AASHTO T 160 with the exception that the contractor-supplied cube molds will remain intact with a top firmly attached throughout the curing period. Use structural non-shrink grout with no expansion after seven days. Refer to Table 1 for structural non-shrink grout requirements.

Table 1

Structural Non-Shrink Grout

*Properties	Requirements	ASTM	AASHTO
Accelerated Weathering	As Specified in ASTM or AASHTO	C 666	T 260
Compressive Strength	>5,000 psi @ 28 days		T 106
Accepted Bond Strengths	>1,000 psi @ 24 Hours	C 882	
Test Medium	<3% White Utah Road Salt		T 161
Accepted Weight Loss	<15% @ 300 Cycles		T 161
Length Change	No expansion after 7 days		T 160

*Certified test results from a private AASHTO accredited testing laboratory will suffice for acceptance.

C Construction

Place Non-Shrink Grout conforming to standard spec 501 and standard spec 502, and as shown in the plans.

D Measurement

The department will measure Non-Shrink Grout by the Cubic Foot 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.0025.01	Non-Shrink Grout	CF

Payment for Non-Shrink Grout is full compensation for providing all materials; placing, finishing, protecting and curing the Non-Shrink Grout.

35. Salvage Existing Light Pole Assembly, Item SPV.0060.01.

A Description

This special provision describes removing, salvaging, and transporting existing city-owned light pole assemblies, including light poles, arms and luminaries as shown on the plans and as hereinafter provided. Specific salvage items are noted in the plans.

B (Vacant)

C Construction

Arrange for the de-energizing of the lighting system with the local electrical utility after receiving approval from the engineer that the existing lighting system can be removed.

Notify Brad Bowman of the Menominee Indian Tribe of Wisconsin (MITW), (715) 799-5147 at least three working days prior to the removal of the lighting system.

Salvage light pole assemblies per plan from their concrete footing and disassemble out of traffic in accordance to section 204 of the standard specifications and as shown on the plans. Remove wiring/cabling per plan and dispose of properly off department right of way. Ensure that access handhole doors and hardware remain intact. Make a reasonable effort to inspect salvaged equipment for damage or defects.

Deliver salvaged equipment to the MITW. Contact Brad Bowman for location of MITW and at least five working days prior to delivery to make arrangements.

D Measurement
The department will measure Salvage Existing Light Pole Assembly as each individual Salvage Existing Light Pole Assembly acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.01	Salvage Existing Light Pole Assembly	EACH

Payment is full compensation for salvaging, removing, disassembling lighting equipment, scrapping of some materials, disposing of scrap material, storage, transporting, and delivering to the MITW designated yard or storage facility.

36. Light Pole Type 5 Special, Item SPV.0060.02.

A Description
This special provision describes furnishing and installing a WisDOT Standard Light Pole Type 5, including a festoon receptacle box and lighting assembly banner arms.

B Materials
Furnish all materials in accordance with the plans and the following applicable standard specification sections and articles:

a) Section 651 General Requirements for Electrical Work.
b) Section 655 Electrical Wiring.
c) Section 657 Poles, Arms, Standards, and Bases.
d) Section 659 Lighting

Provide aluminum WisDOT Standard Pole Type 5.

Provide two 18” long breakaway banner arms with factory welded brackets aimed perpendicular to the roadway,

The festoon GFCI receptacle shall be a 20-amp, 120 volt, duplex, ground fault interrupting premium specification in a weather-proof, cast metal receptacle box with an outdoor cover. The receptacle, box and cover shall be black. The receptacle box shall be painted to match the light pole. The outdoor cover shall be designed to be weather-proof while the receptacle is in use. The cover shall be rugged, UV resistant, non-corrosive, non-conductive, made of polycarbonate designed to protect the receptacle without cracking or breaking.

Include the wiring and additional slack wiring required to connect the receptacle circuits within the transformer base pedestal. Install wires within the light poles that are XLP, USE rated, copper, no smaller than No. 12 AWG and sized to accommodate the receptacles supplied. Fuses shall be small-dimension, 1 1/2 in. x 13/32 in., cylindrical fuses of the time-delay type. The fuses shall be rated for 500 V AC and meet the requirements of UL 248-14. The fuses shall have a listed interrupting rating of not less than 10,000 rms symmetrical amperes at rated voltage. They shall be sized at 300 percent of the starting or operating current whichever is greater, but in no case greater than 50 percent of the branch circuit conductor ampacity installed in accordance with WisDOT Standard Detail Drawing Electrical Handhole Wiring.

C Construction
Construct WisDOT Standard Pole Type 5 in accordance with section 657 of the standard specifications.

Install the festoon receptacles at the locations shown on the plans with all necessary wiring, miscellaneous accessories, and hardware as required for a complete and fully operational unit. Follow manufacturer instructions for transportation, installation and wiring.

Mount the festoon receptacle box on the pole 10 feet above the top of the transformer base. Mount only one duplex festoon receptacle and box on each pole.

Install mounted banner arms at 14' and 17' from the bottom of the pole. Installation shall follow the supplier's recommendations, supplied to the engineer by the equipment fabricator.

Verify the mounting height and orientation of banner brackets and festoon receptacle box with Brad Bowman of MITW, (715) 799-5147 prior to the contactor installing.

D Measurement
The department will measure Light Pole Type 5 Special as each individual light pole acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.02	Light Pole Type 5 Special	EACH

Payment is full compensation for fabricating and installing WisDOT Pole Type 5 with festoon receptacle box and lighting assembly banner arms. Lighting assembly banner arm shall include two lighting assembly banner arms, and mounting hardware. Festoon Receptacle Box shall include Festoon Receptacle, box, cover, wiring, fuses, and all hardware and fittings. Item includes coordination with all other construction operations; and for furnishing all labor, tools, equipment and incidentals necessary to complete the work as described herein, in the plans, details and standard specifications.

37. Lighting Control Cabinet Special, Item SPV.0060.03.

A. Description
This special provision describes furnishing and installing a WisDOT Lighting Control Cabinet 120/240 30-Inch, including all power and control components within the cabinet as shown on the Plans and as describe hereinafter.

B. Materials
Furnish a WisDOT Lighting Control Cabinet 120/240 30-Inch in accordance with section 659 of the standard specifications and as shown in the plan details.

Submit shop drawings for all parts and wiring plans to the Engineer for approval prior to ordering the equipment. The equipment shall not be ordered prior to approval of the shop drawings by the Engineer.

C. Construction
Construct the Lighting Control Cabinet in accordance with Section 659 of the standard specifications.

Connect the control cabinet to the concrete base in accordance with the cabinet manufacturer's recommendations and industry standards.

Place a copy of the control cabinet wiring schematic in a plastic protector and affix to the inside of the door to the cabinet.

D. Measurement
The department will measure Lighting Control Cabinet Special completed in accordance with the contract and accepted, as a unit of work.

E. Payment
The department will pay for the measured quantity at the contract unit price under the following bid item:

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.03	Lighting Control Cabinet Special	EACH

Payment is full compensation for furnishing and installing the lighting cabinet including circuit wiring connections, hardware, and fittings the plans show; and for making the lighting system fully operational.

38. Lane Shift, Item SPV.0060.04.

A Description
Lane Shift will consist of constructing a temporary one-lane roadway to permit the installation of culvert pipes with fill greater than four feet.

B Materials
Furnish fill conforming to the pertinent requirements of section 208 of the standard specifications. Furnish Base Aggregate Dense conforming to the pertinent requirements of standard spec 305.

C Construction
Place fill and base aggregate dense as needed to maintain traffic across the lane shift.

Upon completion of work requiring traffic to use the lane shift, remove materials according to standard spec 205.

D Measurement
The department will measure Lane Shift in units of each.

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	Lane Shift	EA

Payment is full compensation for placing, removing and disposal of fill material and Base Aggregate Dense.

Traffic control and erosion control items will be measured and paid separately.

39. Sanitary Chimney Seal, Item SPV.0060.05.

A Description
This special provision describes installing an external chimney seal to sanitary manholes.

B Materials
Furnish an external Type I Flexible Watertight Frame/Chimney Joint conforming to standard spec 3.5.4(f)1.

C Construction
Excavate around manhole as necessary to install external chimney seal. Backfill to required plan elevations.

D Measurement
The department will measure Sanitary Chimney Seal as each individual item 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.0060.05	Sanitary Chimney Seal	EACH

Payment is full compensation for excavation, sealing, backfilling, and for all labor, tools equipment and incidentals necessary to complete the work.

40. Removing Water Main Valve & Valve Box, Item SPV.0060.06.

A Description
This work shall consist of Removing Water Main Valve & Valve Boxes as shown on the plans and as herein provided.

B Vacant

C Construction
Remove water main valve and remove water main valve box to five feet below finish grade. Dispose of removed valve and valve boxes.

D Measurement
The department will measure Removing Water Main Valve & Valve Boxes as each individual item acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT

SPV.0060.06	Removing Water Main Valve & Valve Box	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring and disposal, and for all labor, tools equipment and incidentals necessary to complete the work.

41. Cap Water Main to Remain in Service, Item SPV.0060.07.

A Description

This work shall consist of furnishing and installing a pipeline cap manufactured of materials specifically intended for use as a pipeline cap on the open end of the pipeline to remain in service as shown on the plans.

B Vacant

C Construction

Cap on pipelines to remain in service shall be as shown on the plans and as herein provided.

D Measurement

The department will measure Cap Water Main to Remain in Service as each individual cap acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.07	Cap Water Main to Remain in Service	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring, furnishing and installing the cap, and for all labor, tools, equipment and incidentals necessary to complete the work, regardless of pipe size.

42. Abandoning Water Main Valve Box, Item SPV.0060.08.

A Description

This special provision describes salvaging the existing water main valve box.

B Vacant

C Construction

Remove water main valve box to three feet below finish grade. Dispose of removed valve boxes. Fill remaining valve box with Class B bedding materials.

D Measurement

The department will measure Abandoning Water Main Valve Box as each individual item acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.08	Abandoning Water Main Valve Box	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring and disposal.

Class B bedding materials required for filling the manhole is incidental to the work

43. Salvage Hydrant, Item SPV.0060.09.

A Description

This special provision describes salvaging the existing hydrant and reinstalling it at a new location.

B Materials

The existing hydrant shall be reused

C Construction

Remove existing hydrant. Excavate and install hydrant in accordance with the details on the plans. Support hydrant on a concrete block.

D Measurement

The department will measure Salvage Hydrant as each individual Salvage Hydrant 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.0060.09	Salvage Hydrant	EACH

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring, for removing hydrant, reinstalling hydrant, drainage stone, thrust blocking and support block.

44. Adjusting Water Main Valve Box, Item SPV.0060.10.

A Description

This special provision describes adjusting the water main valve box.

B Vacant

C Construction

Excavate around the existing water main valve box as necessary and rotate the valve box assembly to position top at the required elevation. Furnish and install valve box extensions as necessary.

D Measurement

The department will measure Adjusting Water Main Valve Box as each adjustment acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.10	Adjusting Water Main Valve Box	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, and shoring.

45. Adjusting Hydrant, Item SPV.0060.11.

A Description
This special provision describes adjusting the existing hydrant.

B Vacant

C Construction
Excavate around the existing hydrant as necessary to install or remove extensions to obtain the required elevation. Furnish and install extensions as necessary.

D Measurement
The department will measure Adjusting Hydrant as each adjustment acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.11	Adjusting Hydrant	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring, extensions, and for all labor, tools, equipment and incidentals necessary to complete the work.

46. Water Main Gate Valve & Box 6-Inch, Item SPV.00060.12.

A Description
This work shall consist of furnishing and installing gate valves and valve boxes at the locations as shown on the plans.

B Materials

B.1. Valves
B.1.a) Kennedy
B.1.b) Waterous
B.1.c) Mueller A 2360-20
B.1.d) Or similar
B.1.e) Resilient wedge (AWWA C-515)
B.1.f) Epoxy lined per AWWA C550

B.1.g) Stainless steel hardware
B.2. Valve Boxes
B.2.a) Tyler
B.2.b) Mueller
B.2.c) East Jordon – American made
B.2.d) Or similar
B.2.e) Cast iron valve boxes shall meet the requirements of Chapter 8.29.0 of the Standard Specifications. Furnish extension if required to meet existing surface or finished grades.
B.2.f) 3 piece, screw type box with 5-1/4" shaft and no-tilt drop cover marked "Water".

C Construction
Provide sufficient quantities of crushed stone or rock conforming to the requirements of ASTM C33, Gradation No. 2 over and around the valve to prevent sand blockages of the valve bonnet and box.

D Measurement
The department will measure 6-inch Gate Valve & Box, as each individual valve acceptably completed.

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0060.12	Water Main Gate Valve & Box 6-Inch	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring, for furnishing and installing gate valves, adjusting valve box height, for furnishing and installing bolts, nuts, and gaskets.

47. Tracer Wire Access Box, Item SPV.0060.13.

A Description
This special provision describes furnishing and installing tracer wire access box.

B Materials
The tracer wire access box shall include an ABS tube, cast iron cover and collar and locking cover.

C Construction
The cover shall be set flush with the surface after final grading is completed.

D Measurement
The department will measure Tracer Wire Access Box as each individual tracer wire access box 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.0060.13	Tracer Wire Access Box	Each

Payment is full compensation for providing all materials, installing, connecting, and cleanup.

48. Water Main Coupling 6-Inch, Item SPV.0060.14; Water Main Bend 45 Degree 6-Inch, Item SPV.0060.15.

A Description

This work shall consist of furnishing and installing water main fittings of various sizes and type in the locations as shown on the plans.

B Materials

1. Water main fittings shall be push on or mechanical joint (mechanical joint where tie rods are required) and shall meet the requirements of Chapter 8.22.0 of the Standard Specifications.
2. Compact style fittings per AWWA C153 are acceptable.
3. Cement lined per AWWA C104.
4. Cor-Blue T-bolt required for mechanical joint.

C Construction

Install in accordance with the requirements of the "Standard Specifications for Sewer and Water Construction in Wisconsin," Sixth Edition, dated December 22, 2003, including all Addenda thereto, and the requirements of the bid item Water Main.

D Measurement

The department will measure water main couplings and bends as each individual fitting acceptably completed.

E Payment

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

SPV.0060.14	Water Main Coupling 6-inch	Each
SPV.0060.15	Water Main Bend 45 Degree 6-Inch	Each

Payment is full compensation for excavating, backfilling, dewatering, sheeting, shoring, for furnishing and installing water main fittings.

49. Water Main Tapping Sleeve 6 x 6-Inch, Item SPV.0060.16.

A Description

This special provision describes furnishing and installing water main tapping sleeves of the size and type described on the plans, meeting the requirements of the plans, the "Standard Specifications for Sewer and Water Construction in Wisconsin," Sixth Edition, dated December 22, 2003, including all Addenda thereto, the requirements for the Bid Item Water Main, and as hereinafter described.

B Materials

Provide restrained joint fittings conforming to Chapter 8.22.0 of the "Standard Specifications for Sewer and Water Construction in Wisconsin," Sixth Edition, dated December 22, 2003, including all Addenda thereto; compact style in accordance with AWWA C153; cement line conforming to AWWA C104.

Tapping Sleeve shall be Smith Blair 665, Romac Industries SSTIII, or approved equal.

Mega Lugs required for all thrust restraints.

C Construction

Install in accordance with the requirements of the "Standard Specifications for Sewer and Water Construction in Wisconsin," Sixth Edition, dated December 22, 2003, including all Addenda thereto, and the requirements of the bid item Water Main.

D Measurement

The department will measure Water Main Tapping Sleeve (size) as a single 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.0060.16	Water Main Tapping Sleeve 6 x 6-Inch	Each

Payment is full compensation for furnishing all materials; for all excavations; for sheeting and shoring, laying pipe, and making connections to all new or existing facilities; for furnishing all bedding material; dewatering; for backfilling and compaction, testing and disinfection of water mains, testing of backfill compaction, removing sheeting and shoring, cleanup, and restoring the site of the work.

50. Steel Plate Beam Guard Connection, Item SPV.0060.17.

A Description

This special provision describes providing the work to make connections from existing steel plate beam guard to new steel plate beamguard.

B Materials

Furnish all bolts, connector plates, and other necessary materials to complete the connection.

C Construction

Connect to existing guardrail at the nearest post or midrail section. .

D Measurement

The department will measure Steel Plate Beam Guard Connection 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.0060.17	Steel Plate Beam Guard Connection	EACH

Payment is full compensation for all labor, materials, and equipment used to make the connection.

51. Concrete Curb and Gutter 24-Inch Type D, Item SPV.0090.01.

A Description

This special provision describes constructing concrete curb, concrete curb and gutter, and concrete gutter according to the details shown in the plans, the requirements of section 601 of the standard specifications.

B Materials

Provide materials that conform to the requirements of subsection 601.2.

C Construction

Construct according to the requirements of subsection 601.3.

D Measurement

The department will measure Concrete Curb and Gutter 24-Inch Type D in length by the linear foot acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.01	Concrete Curb and Gutter 24-Inch Type D	LF

Payment will be made according to standard spec 601.5.

ncr-601-015 (20141015)

52. Water Main 6-Inch, Item SPV.0090.02.

A Description

This work shall consist of excavating required trenches, furnishing and installing water mains and tracer wires and backfilling the trenches, as shown on the plans and contract as hereinafter provided.

B Material

B.1 General

B.1.a) Water mains installed in trenches shall be PVC with push on or mechanical joints. PVC water mains shall be installed with tracer wire.

B.2 PVC Pipe

B.2.a) PVC pipe shall conform to AWWA C900, pressure class 150, SDR 18, cast iron outside diameter.

B.3 Pipe Joints.

B.3.a) Joints for PVC pipe shall be elastomeric gasket type meeting ASTM F477 and assembly shall be per AWWA M23.

B.3.b) At fittings, also restrain pipeline joints for the following length from fittings:

Restrained Length (feet)

Pipe Size (In)	45° Bend	90° Bend	Tee Hydrant or Dead End
6	11	20	14
8	19	34	24
10	28	51	36
12	39	73	51

B.3.c) Joints for copper pipe shall be compression fitting type joints.

B.4 Tracer Wire

B.4.a) Tracer Wire shall be 14 gauge AWG solid copper wire with 15 mil polyethylene coating, blue color.

B.4.b) Tracer wire joints shall be wrapped splices with solder or cadweld bonding of the copper wire, split bolt connections or compression connections (wire nuts not permitted). All exposed areas should be wrapped to provide a watertight joint.

B.4.c) Tape the tracer wire to the top of the utility pipeline every 10 feet.

C Construction

C.1. Manipulation of existing valves required in order to construct work shall be performed by the Menominee Indian Tribe of Wisconsin only. Contact the Menominee Indian Tribe of Wisconsin at least 48 hours in advance to coordinate and schedule any required valve manipulation. Contact Marlin Waupoose at (715) 799-3587.

C.1.a) Water customers shall not have their water service interrupted for more than 4 hours per day. Customers scheduled for interruption shall be notified at least 24 hours in advance.

C.2. Performance Tests

C.2.a) Hydrostatic Pressure Test

C.2.a)(1) After pipe and appurtenances have been constructed, perform a hydrostatic pressure test.

C.2.a)(1).a. Necessary equipment include: test plugs, reaction blocking, hoses, pressure gauges, measuring devices, and hand pumps, to perform the work required in connection with the tests.

C.2.a)(2) Slowly fill each test section with water, care being taken to expel all air from the pipes.

C.2.a)(3) Tap the pipe, if necessary, at high points to vent the air.

C.2.a)(4) Maintained at 150 P.S.I. for at least one hour.

C.2.a)(5) Tighten leaks found at mechanical joints, until the leaking stops.

C.2.a)(5).a. Remove and replace any cracked or defective pipes, fittings, valves or joints discovered as a consequence of the pressure test with sound material, and the test shall be repeated until satisfactory.

C.2.a)(5).b Leakage Test

C.2.a)(5).b)(1) After the pipe has been subjected to the above pressure test, a leakage test as described herein shall be performed.

C.2.a)(5).b)(2) If water does not have to be added to the pipeline during the pressure test, to maintain 150 psi, the requirement for the leakage test may be waived.

C.2.a)(5)(b)(2).a. Necessary equipment include: test plugs, reaction blocking, hoses, pressure gauges, measuring devices and hand pumps, to perform the work required in connection with the tests.

C.2.a)(5).b.(3) The duration of each leakage test is two hours. C.1.a)(5).b.(4) The main pressure during the test is 150 P.S.I.

C.2.a)(5).b.(5) Leakage is defined as the quantity of water to be supplied into the newly laid pipe, or any valved section thereof necessary to maintain the specified test pressure after the pipe has been filled with water and the air expelled.

C.2.a)(5).b.(6) The Engineer will approve the system of measuring this volume of water prior to commencement of the test.

C.2.a)(5).b.(7) The maximum leakage in gallons per hour is determined by the following equation:

$$L = \frac{SD \times (P)^{1/2}}{133{,}200}$$

L = allowable leakage in gallons per hour S = length of pipeline tested in feet

D = nominal diameter of the pipe in inches P = test pressure in psig

*Based on 11.65 gpd per mile of pipe per inch of nominal diameter, at 150 psi.

C.2.a)(5).b.(7).a. The allowable leakage per 1,000 feet of pipeline is as follows:

Pipe Size (in.)	Allowable Leakage (gpd)
4	0.37
6	0.55
8	0.74
10	0.92
12	1.10
14	1.29
18	1.66

C.2.a)(5).b.(7).b. In case the section under test contains joints of various diameters, the allowable leakage will be the sum of the computed leakage for each size of joint.

C.2.a)(5).b.(8) Should the test disclose leakage greater than that permitted, locate and repair the defective pipe until the leakage is within the specified allowance.

C.2.a)(5).c. Continuity Test

C.2.a)(5).c.1 Perform tracer wire continuity testing utilizing a standard 5 watt generator to provide an AC current restricted to 33 kHz or less.

C.2.b) Presentation of Test Results

C.2.b)(1) At the conclusion of the Performance Tests, the Owner or Owner's representative will furnish a written report or the results of the tests.

C.2.b)(2) The report will identify the specific type and length of pipe tested, the pressures, the duration of the test, the amount of leakage, etc.

C.2.b)(3) The report will be signed by the Contractor.

C.3. Disinfection of Complete Watermains

C.3.a) AWWA C-651 Standard for Disinfecting Watermains.

C.3.b) Clean the main prior to disinfection, except when using the tablet method.

C.3.c) Chlorinate main using one of the following forms of chlorine.

C.3.c)(1) Liquid Chlorine in combination with a solution feed, vacuum operated chlorinator and a booster pump.

C.3.c)(2) Calcium or Sodium Hypochlorite solution injected into the main with a chemical feed pump.

C.3.c)(3) Calcium Hypochlorite tablets, 5 grams each containing approximately 65 percent available chlorine by weight.

C.3.c)(4) Calcium Hypochlorite tablets may not be used on solvent-welded plastic or on screw-joint steel pipe.

C.3.d) Methods of Chlorine Application

C.2.d)(1) Continuous Feed Method

C.3.d(1).a. Flow water from the existing distribution system at a constant, measured rate into the newly-laid pipeline.

C.3.d(1).b. Feed the chlorine dose at a constant, measured rate.

C.3.d(1).c. Proportion the two rates to deliver chlorine concentration at a minimum of 25 mg/l available chlorine. Fill the entire main is with chlorine solution.

C.3.d(1).d. Retain the chlorinated water in the main for at least 24 hours, Operate all valves and hydrants in the section treated to disinfect the appurtenances.

C.3.d(1).e. At the end of the 24 hour period, a 10 mg/l free chlorine residual throughout the length of the main is required.

C.3.d(1).f. If the initial disinfection fails to produce a free chlorine residual of 10 mg/l, rechlorinated the main with 25 mg/l available chlorine until a residual of 10 mg/l is obtained.

C.3.d(2) Slug Method

C.3.d(2).a. Flow water from the existing distribution system at a constant, measured rate into the newly laid pipeline.

C.3.d(2).b. Feed the chlorine dose at a constant, measured rate.

C.3.d(2).c. Proportion the two rates so that the chlorine concentration in the water entering the pipeline is maintained at no less than 100 mg/l.

C.3.d(2).d. Apply the chlorine continuously and for a sufficient period to develop a solid column or "slug" or chlorinated water that will, as it passes along the line, expose all interior surfaces to a chlorine concentration of at least 100 mg/l for at least 3 hours.

C.3.d(2).e. As the chlorinated water flows past tees and crosses, operate related valves and hydrants to disinfect appurtenances.

C.3.d.(3) Tablet Method

C.3.d.(3).a. During construction place, 5 gram calcium hypochlorite tablets in each section of pipe.

C.3.d.(3).b. Place one such tablet in each hydrant, hydrant branch and other appurtenance.

C.3.d.(3).c. The number of 5 gram tablets required for each pipe section to provide a dose of 25 mg/l shall be $0.0012\ d^2\ L$ rounded to the next higher integer, where d is the inside pipe diameter, in inches, and L is the length of the pipe section, in feet.

C.3.d.(3).d. The number of tablets required for various pipe diameters is as follows:

Pipe Diameter (in.)	Number of Tablets 13 Ft. Pipe	Length 20 Ft. Pipe Length
4	1	1
6	1	1
8	1	2
10	2	3

12	3	4
16	4	7

C.3.d.(3).e. Attach the tablets with a food-grade adhesive.

C.3.d.(3).f. Tablet adhesive only on the broadside attached to the surface of the pipe.

C.3.d.(3).g. Attach all the tablets inside and at the top of the main, with approximately equal numbers of tablets at each end of a given pipe length.

C.3.d.(3).h. If the tablets are attached before the pipe section is placed in the trench, mark their position on the section so it can be readily determined that the pipe is installed with the tablets at the top.

C.3.d.(3).i. When installation has been completed, fill the main at a velocity no greater than 1 foot per second.

C.3.d.(3).j. Take precautions to eliminate air pockets.

C.2.d.(3).k. Chlorinate pipe for at least 24 hours.

C.3.d.(3).l. If the water temperature is less than 41^{O}F, chlorinate the pipe for at least 48 hours.

C.3.d.(3).m. After the applicable retention period, flush the heavily chlorinated water from the main until chlorine concentration in the water leaving the main is no higher than 1 mg/l.

C.3.d.(3).n. Direct discharge from the watermain to the ground or surface waters may not be allowable. A WPDES (Wisconsin Pollutant Discharge Eliminate System) general permit is required for discharges of chlorinated water out of hydrants or watermains.

C.3.d.(3).o. WPDES general permits are available from the DNR area district wastewater engineer.

C.3.e) Following a satisfactorily observed chlorine residual and flushing, two successive sets of samples taken at 24 hour

intervals, will be tested for bacteriological analysis.

C.3.e)(1) Furnish a sampling tap consisting of a standard corporation cock installed in the main with a copper tube gooseneck assembly.

C.3.e)(2) After sampling remove the gooseneck assembly and retained for future use.

C.3.e)(3) Obtain one bacteriologically safe water sample from each location prior to the main being placed into service.

C.3.e)f) After disinfection has been completed open all valves and the facilities be placed in operation.

D Measurement

The department will measure Watermain (size) by the linear foot acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0090.02	Watermain 6-Inch	LF

Payment is full compensation for all excavating, backfilling, dewatering, sheeting, shoring, removing existing watermain, for furnishing and installing watermains, bedding material, initial backfill, and all test procedures.

53. Rectangular Rapid Flashing Beacon System STH 47 & Warrington Road, Item SPV.0105.01.

A Description

This work shall consist of furnishing and installing an AC powered Rectangular Rapid Flashing Beacon (RRFB) system. The RRFB shall be hardwired and pedestrian-activated by a pushbutton as shown on the plans.

B Materials

B.1 General Requirements

The RRFB shall be in conformance with all applicable FHWA MUTCD standards and guidelines, and shall meet or exceed the requirements specified in FHWA Memorandum IA-21, Interim Approval for Optional Use of Pedestrian-Actuated Rectangular Rapid-Flashing Beacons at Uncontrolled Marked Crosswalks.

Furnish a crosswalk assembly with one light bar or two light bars mounted back-to-back, and shall employ mounting bracket for several post type/size options. See applicable plans for whether assemblies require one light bar or two light bars. Each light bar shall house three LED light arrays: two rapidly and alternately flashing rectangular amber (vehicle) indications and one amber side-mounted (pedestrian) indication. The AC-powered system shall utilize one controller with remote hardwired light bars and pushbuttons. The system shall be capable of an integrated 900 MHz radio.

The Pedestrian Indication LEDs shall be side-mounted so as to be visible to pedestrians in the crosswalk, and shall flash concurrently with the vehicle indications to confirm that the RRFB is in operation.

The RRFB system shall be pedestrian-activated, utilizing ADA compliant Push Buttons that are hardwired. The activation and deactivation of all indications shall be synchronized. Active vehicle indications shall be visible in a direct line of sight at distances over 1000 feet during the day, and over 1 mile at night.

The system shall be AC powered with applicable circuit breaker and Lightning suppression.

B.2 Hardware Requirements

(A) System

1. The System shall operate on AC power.
2. Upon activation by ADA-compliant pushbutton, there are two ways the system can be activated; hardwired to all light bars, or if used, an integrated 900 MHz transceiver radio shall wirelessly activate all integral indications, using spread spectrum radio frequency to minimize RF interference.
3. When activated, all indications associated with a given crosswalk shall simultaneously commence operation within 120msec, and shall cease operation at a predetermined time (programmable timeout) after any pedestrian actuation.
4. Flash rates with the frequencies of 5 to 30 flashes/second shall not be used to avoid inducing seizures.
5. The duration of the flash cycle (timeout) shall be programmable from 1 second to 24 hours, in increments of seconds.
6. Individual components shall be independently replaceable, equipped with approved terminal strips or wire-end molded connectors.

(B) RRFB Controller

1. Shall be completely programmable, including flash pattern and duration.
2. Shall seamlessly integrate with the 900 MHz FHSS wireless transceiver to form a network of connected devices, if required.
3. Shall allow ADA compliant pushbuttons.

(C) Power Supply

1. Shall be powered by 120 VAC to 12 VDC.

(D) Enclosure

1. Shall be constructed of aluminum, no less than 0.080” thickness.
2. Shall be vented to promote airflow for internal components.
3. Shall include screening on all vents and drains to deter insects and foreign matter.
4. Shall include a replaceable #2 traffic lock and keys.
5. Shall utilize tamper-resistant stainless steel hinges.
6. Shall include a removable control panel to which all control circuit components mount.

B.3 Material Specifications

Furnish a complete RRFB system with single or multiple assemblies. Each assembly may consist of, but is not limited to, controller and electrical components (including wiring and solid-state circuit boards) and LED indications in a light bar. An assembly may include the following items:

(A) Light Indications

1. The light bar housing shall be constructed of durable, corrosion-resistant powder-coated aluminum with stainless steel fasteners.
2. Enclosed components shall be modular in design whereby any component can be easily replaced using common hand tools, without having to remove the housing from the pole.
3. All mounting hardware required for mounting the light bar housing shall be provided and universal to multiple poles.
4. Each indication shall be a minimum size of approximately 5” wide x 2” high.
5. A pedestrian LED indication shall be side-mounted in the light bar housing: assembly to be mounted so it is directed toward, and visible to, pedestrians in the crosswalk.
6. The outside edges of the two indications, including any housing, shall not protrude beyond the outside edges of the integral signage of the assembly.
7. The light intensity of the indications shall meet the minimum specifications for Class 1 yellow peak luminous intensity in the Society of Automotive engineers (SAE) standard J595 (Directional Flashing Optical Warning Devices for Authorized Emergency, Maintenance, and Service Vehicles) dated January 2005.
8. All exposed hardware shall be anti-vandal.
9. To minimize excessive glare during nighttime conditions, an automatic signal dimming device should be used to reduce the brilliance of the RRFB indications during nighttime conditions.

(B) Controller

1. The Controller shall be housed in a NEMA type aluminum enclosure intended for indoor or outdoor use, primarily to provide a degree of protection against corrosion, windblown dust and rain, splashing water, hose-directed water and damage from ice formation.
2. The Controller shall be, in the unlikely event of failure, replaceable independently of other components.

(C) Signs

1. All signs shall be supplied and installed under separate bid items. However, the assemblies must be constructed to allow the appropriate space for the installation of the signs in the field.

(D) Pushbutton

1. The pushbutton shall be supplied and installed under a separate bid item.

(E) Traffic Signal Standards Aluminum 13-FT

1. The traffic signal standard shall be supplied and installed under a separate bid item.

(F) Pedestal Base

1. The pedestal base shall be supplied and installed under a separate bid item.

(G) Concrete Base

1. The concrete base and anchor bolts shall be supplied and installed under a separate bid item.

(H) Hardware

1. Furnish all hardware, connections, etc to make the RRFB system fully operational.

B.4 Warranty

The system shall be supported by a three-year warranty.

C Construction

The RRFB system will consist of multiple assemblies to be constructed by the contractor as shown on the plans. Make the RRFB system fully operational.

D Measurement

The DEPARTMENT will measure Rectangular Rapid Flashing Beacon System STH 47 & Warrington Road as a single lump sum unit, acceptably completed.

E Payment

The department will pay for the measured quantity at the contract unit price under the following bid item.

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.01	Rectangular Rapid Flashing Beacon System STH 47 & Warrington Road	LS

Payment is full compensation for furnishing and installing a fully operational RRFB system; and for furnishing all labor, tools, equipment, and incidentals necessary to complete the contract work.

54. Temporary Stream Diversion Pipes, Keshena Lake Outlet, Item SPV.0105.02.

A Description

This special provision describes delivering, installing, and maintaining temporary stream diversion pipes to divert flow around construction of the structure C-73-4 in accordance to sections 205, 520, and 628 of the standard specifications, as shown on the plans, and as herein provided. The following temporary stream pipe length is estimated:

Structure	Temporary Stream Pipe Length
C-73-4	285 LF (total)

B Materials

B.1 Culvert Pipe Temporary

Culvert pipe temporary shall be in accordance to subsection 520.2.6 of the standard specifications.

B.2 Backfill

Backfill shall be in accordance to subsection 520.2.5.3 of the standard specifications.

B.3 Silt Fence

Silt fence shall be in accordance to subsection 628.2.6 of the standard specifications.

B.4 Sand Bags

Sand bags shall be in accordance to subsection 628.2.8 of the standard specifications.

C Construction Methods

C.1 General

The proposed temporary pipe locations and configurations may be altered with the engineer's approval. Install silt fence prior to excavation, and maintain during construction to minimize erosion and to prevent siltation of the stream.

Construct temporary stream diversion pipes in accordance to subsection 520.3.1 of the standard specifications.

C.2 Excavating and Constructing Foundations for Pipe Culverts

Excavate and construct foundations for the temporary stream diversion pipes in accordance to subsection 520.3.2.2 of the standard specifications.

C.3 Laying Pipe

Lay temporary stream diversion pipes in accordance to subsection 520.3.3 of the standard specifications.

C.4 Backfilling Trenches

Backfill temporary stream diversion pipes in accordance to subsection 520.3.4.2 of the standard specifications.

C.5 Diversion Channel Staging

The proposed temporary diversion pipes must be fully constructed before removal of the existing culvert begins. Silt fence shall be installed prior to excavation of the proposed temporary diversion pipes. Begin excavation for the proposed temporary pipes at the outlet of the proposed pipes. Continue excavation for the proposed temporary pipes working towards the upstream end of the culvert. Backfill and finish the downstream end of the diversion pipe trench to the roadway subgrade elevation and finish to temporary roadway elevation before installing the upstream end of the diversion pipe to allow a single lane of traffic to be maintained during the diversion pipe installation. Once the downstream end of the diversion pipes are backfilled and finished to the roadway elevation and traffic is shifted over the downstream end of the diversion pipes, continue excavation towards the upstream end of the culvert. Use sand bags or similar methods to direct water in the main channel away from the mouth of the proposed diversion to allow installation of the pipes at the upstream end of the temporary diversion. Divert the flow of the main stream into the temporary diversion after construction of the temporary pipes are complete.

Once the flow is diverted to the temporary pipes, the existing culvert shall be removed and the proposed culvert constructed in two stages in order to maintain a single lane of traffic for the duration of construction. The proposed temporary pipe limits fall within the limits of the proposed riprap. As a result, some of the proposed riprap will not be placed prior to flow being restored to the stream. All riprap outside the limits of the proposed temporary diversion pipes shall be placed prior to flow being restored to the stream.

Once the riprap is placed, restore the flow through the culvert. Remove the temporary stream diversion pipes and all their components in stages beginning at the outlet and working towards the upstream end. Fill with the original excavated material to the bottom of final roadway subgrade elevation if deemed suitable by the engineer and compact the material. Course Aggregate No. 2 may be used as fill. Dispose of temporary culvert pipes, sand bags, and any excess material. Restore flow to the stream. Place the remaining proposed riprap to the extents shown in the plan.

D Measurement

The department will measure Temporary Stream Diversion Pipes, Keshena Lake Outlet as a single lump sum unit of work acceptably completed.

E Payment

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

ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.02	Temporary Stream Diversion Pipes, Keshena Lake Outlet	LS

Payment is full compensation for installing, removing, and disposing of temporary culvert pipes and sandbags; and for restoring the alignment and flow to the natural or relocated stream; and for furnishing all labor, tools, equipment, and incidental items required for temporary stream diversion. Excavation and miscellaneous backfill (excluding Backfill Structure) for the Temporary Stream Diversion Pipes shall be paid for under the bid item Excavation for Structures. Silt fence required for the Temporary Stream Diversion is to be included in the roadway bid item Silt Fence.