SECTION 01 55 25

MAINTENANCE OF TRAFFIC

PART 1 GENERAL

1.01 SUMMARY

A. Section includes procedures and equipment for safely maintaining and controlling traffic within and near the Site and on the project detour during construction.

B. Method of Measurement:
   1. Measure all required procedures and equipment on a lump sum basis.
   2. No measurement will be made for individual items or equipment (except as otherwise noted).
   3. Procedural and equipment revisions resulting from minor changes or field adjustments will be considered incidental.

C. Basis of Payment:
   1. Payment for the maintenance of traffic for the complete project shall be at the Contract Unit Price as listed on the Bid Form. All associated work items shall be considered incidental.
   2. Progress payment amounts for Traffic Control will be determined by the percentage of the total contract completed based on the following schedule:

Percent of Contract Completed	Percent of Item Paid
5	15
25	40
50	70
75	90
100	(Final) 100

1.02 REFERENCES

A. AASHTO - Guide for Selecting Locations and Designing Traffic Barriers

B. ANSI/ISEA 107 - 2004 Standard for Protective Clothing

C. Traffic Control Treatment of Longitudinal Joints and Edge Drop-offs in Work Zones (enclosed)

D. WisDOT Facilities Development Manual (including all current, applicable Standard Detail Drawings)

E. WisDOT Standard Specifications for Highway and Structure Construction, 2023 Edition (including all supplements) including:
   1. Section 104.6 - Roadway Maintenance and Traffic Control
   2. Section 107.8 - Public Convenience and Safety
   3. Section 643 - Traffic Control

F. WMUTCD

1.03 DEFINITIONS

A. Long Term Restriction: A traffic restriction or lane closure which is in effect during construction without regard to the time restrictions stated in 1.07 B.

B. Short Term Restriction: A traffic restriction or lane closure which is in effect only during the Contractor’s work hours and is consistent with the time restrictions stated in 1.07 B.

1.04 SUBMITTALS

A. Pre-Construction:
   1. Traffic Control Plan as detailed in 1.07 C.
   2. Names, addresses and phone numbers of 2 local persons who will respond to requests for maintenance as detailed in 1.08 D.

B. Permits: Obtain any and all permits necessary from the State and the County to allow for signing, barricading and work within the State or County right-of-way as necessary to complete the project.

1.05 QUALITY ASSURANCE

A. Operations: Conduct all operations in accordance with the WMUTCD.

B. Flaggers:
   1. Provide qualified certified flaggers familiar with applicable traffic laws and regulations and properly trained in the responsibilities of traffic control, including provisions spelled out in the WMUTCD.
   2. Provide properly deputized flaggers to direct and control traffic around or through a traffic control device.
   3. Flaggers shall be properly clothed and equipped, including shirt or blouse, slacks or trousers, sturdy shoes, hard hat, vest (reflectorized at night), a 2-way radio, and an approved “Stop-Slow” paddle or standard.
   4. Uniformed off duty police/patrol officers using hand signals may be used as flaggers. They shall be equipped with a vest and hard hat during flagging operations.

1.06 SITE CONDITIONS

A. Parking of Contractor/Worker Vehicles:
   1. Do not park vehicles in a manner or location which:
      a. Interferes with traffic flow.
      b. Conflicts with resident or consumer parking.
      c. Obstructs any traffic control device.
      d. Lies within the project limits unless so approved by Owner.

1.07 SEQUENCING AND SCHEDULING

A. Closure and Detour Requests:
   1. Submit request for short term lane closure to Owner at least 48 hours prior to time of closure, consistent with the provisions detailed in 1.07 B.
   2. Submit request to close street and divert traffic to Owner at least 3 working days prior to time of closure.
   3. Authority to divert or close shall be subject to Owner’s approval.
   4. Provide notice for all closures and detours as stated in 3.01 A.
   5. Contractor may request that through traffic be detoured consistent with the provisions and restrictions found elsewhere in this section of the Special Provisions. The request shall contain all information needed to justify the request and select the routes to be established. If arrangements can be made that are satisfactory to the agencies having jurisdiction over the roads to be used, the contracting authority may then, at its sole discretion, establish an approved detour subject to the following conditions:
      a. Contractor, at Contractor’s expense, shall design, provide, install, maintain, and remove all the necessary traffic control devices on the detour roads.
      b. Contractor shall reimburse the Town for all expenses incurred in maintaining and restoring the detour roads, except for snow removal.
      c. Contractor shall fulfill their obligations for maintenance of local traffic by furnishing, placing, and maintaining all traffic control devices and other traffic protection measures required of them on the roads undergoing improvements.

B. Restrictions:
   1. Lane closures will not be permitted during inclement weather or when Owner determines that such closure will be a hazard to traffic.
   2. Nighttime Work:
      a. Nighttime work shall be approved in advance by Owner.
      b. Adequate lighting shall be provided as necessary during nighttime construction (supplementing or replacing existing street lighting) so that the work, personnel, equipment, traffic control devices and flaggers are visible to motorists.
      c. All workers shall wear reflectorized jumpsuits during nighttime construction.
   3. Streets which shall not be closed to traffic at any time, but on which short-term lane closures may be utilized:
      a. Sylvester Road.
      b. Evans Valley Road.

(Note: Contact proper agency and Owner at least 72 hours prior to restricting traffic on these roadways.)

   4. Maintain 1 lane of traffic in each direction at all times, unless a short-term lane closure has been approved by Owner, on the following streets:
      a. Sylvester Road.
      b. Evans Valley Road.
   5. Lane widths shall be 12 feet (minimum).
   6. Lanes shall be continuous throughout the project, and may be adjacent to each other or separated.
   7. Traffic shall be maintained on in-place, temporary or permanent roadway, or on a combination of these.
   8. Flagpersons shall be utilized on any roadway that is restricted to 1 lane for traffic, except as approved by Owner:
   9. Short-term lane closures, short-term spot road closures, or restrictions of traffic to 1 lane may be utilized on the following streets:
      a. Sylvester Road.
      b. Evans Valley Road.
   10. Furnish, install and maintain all proper signing, flagpersons (as appropriate) and warning devices in order to:
      a. Close or restrict traffic on a roadway.
      b. Protect the work, the workers and the motorist.
      c. Be consistent with (or similar to) the requirements of the “Staging Plan” enclosed in the Plans.
      d. Inform the motorist of pending construction and direct the motorist through the work zone.
   11. Maintain access to individual residences and businesses fronting the following roadways at all times, unless otherwise approved by the affected property owner and Owner:
      a. Sylvester Road.
      b. Evans Valley Road.
   12. Access to individual properties fronting a roadway under construction may be maintained on in-place or permanent roadway, or via an Owner approved gravel surface.
   13. Provide for protection of traffic from open excavations as described in 3.02.B.2.
   14. Conduct operations to allow continual fire and police access to all areas within the project.
   15. The previous restrictions may be modified as necessary to insure safe traffic operations.

C. Traffic Control Plan:
   1. Content:
      a. Use the traffic control plan included in the Plans, or submit an alternate traffic control plan for approval within 10 days after the contract award and 5 days prior to initiating any construction.

1.08 MAINTENANCE

A. Responsibility:
   1. Maintain all traffic control devices, on a 24-hour basis, throughout the term of the contract, including work suspensions.

2. Repair or replace as necessary:
    a. Devices that are damaged or moved.
    b. Lights that cease to function properly.
    c. Barricade weights that are damaged or fail to stabilize the barricade.

B. Inspection:
1. Check all devices twice daily, including once at the end of the work day.
2. Conduct 1 night (after work hours) inspection of all devices per week.
3. Immediately correct all deficiencies in alignment, visibility and reflectivity.

C. Notice:
1. Furnish names, addresses, and phone numbers of 2 local persons who will respond to requests for maintenance to the following:
    a. La Crosse County Sheriff's Office
    b. Town of Holland, Village Clerk
2. Provide a means of receiving maintenance requests on a 24-hour basis.
3. Respond to all maintenance requests within 2 hours.

D. Failure to respond to maintenance requests will result in the work being completed by the Owner with twice the cost thereof being deducted from any monies due the Contractor.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Signs:
1. Provide all required signs in accordance with the WMUTCD, the WisDOT Facilities Development Manual, and as approved by Owner.
2. All signs shall be fabricated of either steel or aluminum.

B. Barricades:
1. Provide 8-foot, Type III barricades in accordance with the current WisDOT S.D.D. 15C 2-3.
2. Provide flashers on all barricades.

C. Barriers: Provide temporary portable precast concrete barriers in accordance with the current WisDOT S.D.D. 14B 7-9a.

D. Drums: Provide drum-like channelizers in accordance with the WMUTCD (Part 6).

E. Ballast:
1. Provide sandbags or other appropriate ballast for stabilizing traffic control devices.

F. Miscellaneous:
1. Store the following devices at a convenient location within the project limits of each portion of the project for use in an emergency, as approved by Owner:
    a. At least 5 extra Type I barricades with flashers.
    b. At least 5 extra Type III barricades.
    c. At least 10 extra drums.
2. No direct compensation will be made for furnishing, storing and erecting these traffic control devices.

PART 3 EXECUTION

3.01 PREPARATION

A. Advance Notice:
   1. Provide minimum 72-hour notice for all closures and detours to the following:
      a. Owner
      b. Town Fire Department
      c. Local Ambulance Dispatcher
      d. La Crosse County Highway Department
      e. La Crosse County Sheriff's Office
      f. Postal Service
   2. Provide minimum 48-hour notice for all closures and detours to all affected residences and businesses, for when closures and detours will occur and what their duration will be.
   3. Meet with businesses affected by each restriction of access and coordinate work to allow for deliveries to be made to each affected business during construction.

B. In-place Facilities:
   1. Signs:
      a. Do not remove signs unless authorized by Owner.
      b. Carefully remove and store designated signs and posts for reinstallation.
      c. Replace signs and posts damaged or lost during removal or construction.
      d. Carefully remove and deliver signs and posts to the appropriate agency (Town of Holland) as directed by Owner.
      e. Provide flaggers as directed when “STOP” or other prohibition signs are removed.
      f. Relocate or temporarily mount and maintain required regulatory, warning, guide, and street name signs along streets that remain open to traffic.
      g. Reinstall all signs not being replaced in accordance with the WMUTCD.

3.02 OPERATIONS

A. Installation of Devices:
   1. Provide, locate and maintain all traffic control devices in accordance with the contract documents and the approved traffic control plan.
   2. Devices shall not interfere with in-place devices that will not be removed.
   3. Provide minor modifications and field adjustments as directed at no additional cost to accommodate special conditions or situations which may occur.
   4. Signs shall be mounted on posts driven into ground at proper height and lateral offset, or, if not possible, signs shall be maintained on portable supports or barricades.
   5. Signs shall not be mounted on metal drums.
   6. Placement of all signs and barricades shall proceed in the direction of the flow of traffic.
   7. Cover all traffic control devices which may be inconsistent with traffic patterns.

B. Traffic Protection:
   1. General:
      a. Do not deposit or store materials or park equipment on or adjacent to any roadway open to traffic that will interfere with the safe flow of traffic.
      b. Provide traffic barriers for any obstruction placed within the “clear zone” as defined by the AASHTO Guide for Selecting Locations and Designing Traffic Barriers.
      c. Keep roadways which are open to traffic free from earth materials and debris.
      d. During construction, provide devices to protect traffic and pedestrians from drop-offs, openings, falling objects, splatter or other hazards.
   2. Open Excavations/Drop-Offs Adjacent to the Traveled Roadway:
      a. Schedule operations so as to minimize traffic exposure to uneven lanes, milled edges and edge drop-offs.
      b. Provide and maintain appropriate traffic control in accordance with the “Traffic Control Treatment of Longitudinal Joints and Edge Drop-offs in Work Zones” sheets of these Special Provisions.

c. Close a traffic lane, auxiliary lane or shoulder on any road open to traffic (in accordance with 1.07B) when construction operations cause a drop-off greater than 4 inches adjacent to that lane or shoulder, unless adequately protected by traffic barrier.
d. Concrete or utility repairs of less than 50 feet in length and open for seven days or less do not require that the adjacent lane or shoulder be closed to traffic.
e. Sign and delineate any drop-off (caused by construction operations) of less than 4 inches as shown in the WMUTCD.
f. When excavations on roadways open to traffic exceed 1-foot in depth:
1) Provide continuous portable concrete barriers for the entire length of the excavation.
2) Include suitable end treatment consisting of tapered barrier sections, impact attenuators or a combination thereof.
3) Place warning lights at minimum 50-foot intervals.

3. In lieu of precast concrete barrier, barrels and barricades may be used during construction, as approved by Owner, provided that:
a. Construction work is actively done in or directly adjacent to the excavation.
b. Workers are present.
c. It is daylight hours, or, if nighttime hours, there is additional lighting of the open excavation.
d. Traffic is in a single lane (alternating) or a single lane in each direction with parking removed.
e. The barrels or barricades can be set outside the minimum widths required for traffic and at intervals as directed by the Owner.

C. Pedestrian Access and Traffic:
1. Provide continuous access to all adjacent residences and businesses.
2. Provide temporary boardwalk where in-place sidewalk is removed.
3. When access to business entrances is prohibited, coordinate with business owners to provide protection and direction for alternate entrances.
4. Provide signs, barricades, flasher, snow fence or other devices as required to protect pedestrians adjacent to the work.
5. Cover newly poured concrete sidewalk with plywood after curing compound is applied to provide access at business entrances.

D. Removal of Devices:
1. When signs are removed, sign posts shall also be removed as soon as possible.
2. Removal of signs and barricades shall start at the end of construction areas and proceed toward oncoming traffic, unless otherwise directed by Owner.

3.03 FIELD QUALITY CONTROL

A. At least 24 hours prior to construction and upon request, present all traffic control devices intended for use on the project to Owner to insure conformance with the WMUTCD.

B. Replace any device which is found to be defective.

C. Replace reflective material (on both new and used traffic control devices) whose effectiveness, in Owner's opinion, has been substantially reduced from traffic or other causes.

D. Keep all traffic control signs and devices furnished in a legible condition (including by removing any grime deposited on devices by traffic, natural causes or by the nature of the work being performed).

E. Relocate any traffic control device that is misplaced due to Contractor or Subcontractor operations.

3.04 ADDITIONAL TRAFFIC CONTROL DEVICES

A. General Requirements:
1. In addition to the traffic control devices approved by Owner prior to each stage of construction, or as shown in the Traffic Control Layouts, Owner may require more traffic control as traffic conditions warrant.
2. Furnish and install the additional traffic control devices ordered by Owner.
3. The devices shall be installed and maintained in a functional and legible condition at all times.

B. Method of Measurement:
   1. Measure flashers, barricades, reflectorized drums, and standard signs by the number of individual units of each type, multiplied by the number of calendar days each unit is in service.
   2. Measure special construction signs by the face area thereof furnished and installed as specified.

C. Basis of Payment:
   1. Payment for additional traffic control devices of each type, at the appropriate predetermined unit price set forth by and between Owner and Contractor, shall be compensation in full for all costs of furnishing, installing, maintaining, and subsequently removing and disposing of the devices.

END OF SECTION

Traffic Control Treatment of Longitudinal Joints and Edge Drop-offs in Work Zones

GUIDELINES

THESE GUIDELINES ARE INTENDED TO INCREASE TRAFFIC SAFETY USING TRAFFIC CONTROL DEVICES, SAFETY RELATED APPURTENANCES, AND CONSTRUCTION TECHNIQUES FOR UNEVEN LANES, MILLED EDGES, AND EDGE DROP-OFFS THAT OCCUR IN HIGHWAY WORK ZONES. THE BEST WAY TO INCREASE TRAFFIC SAFETY IS TO MAKE EVERY ATTEMPT TO MINIMIZE EXPOSURE TO UNEVEN LANES, MILLED EDGES, AND EDGE DROP-OFFS; HOWEVER, IT IS REALIZED THAT THIS IS OFTEN NOT POSSIBLE OR FEASIBLE. ONLY WHEN UNEVEN LANES, MILLED EDGES, OR EDGE DROP-OFFS ARE DEEMED NECESSARY, SHALL THE APPROPRIATE PORTION(S) OF THESE GUIDELINES BE APPLIED TO ENHANCE TRAFFIC SAFETY.

APPROPRIATE UNEVEN LANE WARNING SIGNS OR SHOULDER WARNING SIGNS SHALL BE REPEATED AFTER EACH INTERSECTION.

MAXIMUM WARNING SIGN SPACING SHALL BE:
- A – 1 MILE WHEN THE SPEED LIMIT IS GREATER THAN 30 MPH AND
- B – 1/4 MILE WHEN THE SPEED LIMIT IS 30 MPH OR LESS.

WHEN SPACE PERMITS, MINIMUM WARNING SIGN SIZE SHALL BE:
- A – 48 INCHES x 48 INCHES WHEN THE SPEED LIMIT IS GREATER THEN 30 MPH AND
- B – 36 INCHES x 36 INCHES WHEN THE SPEED LIMIT IS 30 MPH OR LESS.

1. FOR DROP-OFFS OF 1-1/2 INCHES OR LESS, APPROPRIATE WARNING SIGNS SHALL BE PROVIDED.

2. FOR DROP-OFFS GREATER THAN 1-1/2 INCHES UP TO 4 INCHES:
   - A – THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 3:1 AND APPROPRIATE WARNING SIGNS SHALL BE PROVIDED; OR
   - B – IF THE TAPER IS NOT PROVIDED, TRAFFIC SHALL NOT BE PERMITTED TO CROSS THE DROP-OFF AND THAT PORTION OF THE ROADWAY SHALL BE CLOSED TO TRAFFIC WITH THE APPROPRIATE WARNING SIGNS AND DEVICES.

3. FOR DROP-OFFS GREATER THAN 4 INCHES UP TO 12 INCHES:
   - A – THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 6:1 AND APPROPRIATE WARNING SIGNS SHALL BE PROVIDED, (6:1 TAPER SHALL NOT BE USED AS A TRAFFIC CARRYING LANE);
   - B – THE EDGE SHALL BE TAPERED AND COMPACTED AT A RATE OF 3:1, TRAFFIC SHALL NOT BE ALLOWED TO CROSS THE DROP-OFF, AND THAT PORTION OF THE ROADWAY SHALL BE CLOSED TO TRAFFIC WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES; OR
   - C – IF A TAPER IS NOT PROVIDED, THE TRAFFIC OR AUXILIARY LANE ADJACENT TO THE DROP-OFF SHALL BE CLOSED TO TRAFFIC WITH THE APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES OR A POSITIVE BARRIER, SUCH AS A PORTABLE PRECAST CONCRETE BARRIER, SHALL BE PROVIDED TO PREVENT TRAFFIC FROM CROSSING THE DROP-OFF.

4. FOR SHOULDER EDGE DROP-OFFS:
   - A – 0-2 FOOT SHOULDER WIDTH AND A 0-12 INCH DROP-OFF; USE GUIDELINES AS SHOWN
   - B – 2-6 FOOT SHOULDER WIDTH AND A 0-4 INCH DROP-OFF; INSTALL EDGELINE OR USE GUIDELINES AS SHOWN
   - C – 6 FOOT OR GREATER SHOULDER WIDTH AND A 0-4 INCH DROP-OFF; NO TRAFFIC CONTROL REQUIRED
   - D – GREATER THAN 2 FOOT SHOULDER WIDTH AND A 4-12 INCH DROP-OFF; USE GUIDELINES AS SHOWN

5. DROP-OFFS GREATER THAN 4 INCHES ADJACENT TO TRAFFIC CARRYING LANES ARE PERMITTED WITHOUT TAPERS OR POSITIVE BARRIERS FOR:
   - A – PROJECTS WITHIN URBAN AREA WHEN THE SPEED LIMIT IS 30 MPH OR LESS; OR
   - B – SHORT TERM (7 CALENDAR DAYS OR LESS) CONCRETE OR UTILITY REPAIR, LESS THAN 50 FEET IN LENGTH WHEN THE SPEED LIMIT IS GREATER THAN 30 MPH.

6. AT NO TIME SHALL THERE BE MORE THAN ONE UNEVEN LANE CONDITION BETWEEN THE TRAFFIC CARRYING LANES WHICH INCLUDE AUXILIARY LANES, TURN LANES, AND RAMP ACCESS OR EGRESS AREAS. WEATHER PERMITTING, ALL EXPOSED UNEVEN LANES CONDITIONS WITHIN THE TRAFFIC CARRYING LANES SHALL BE "MATCHED" WITHIN 24 HOURS.

7. MILLING OPERATIONS SHALL BE REQUIRED TO COMPLETE THE FULL WIDTH OF THE SECTION UNDER CONSTRUCTION AT THE END OF EACH WORK PERIOD.

GUIDELINES
CONT.

Appropriate uneven lane warning signs or shoulder warnings signs shall be repeated after each intersection.

Maximum warning sign spacing shall be:

a - 1 mile when the speed limit is greater than 30 mph, and
b - 1/4 mile when the speed limit is 30 mph or less.

When space permits, minimum warning sign size shall be:

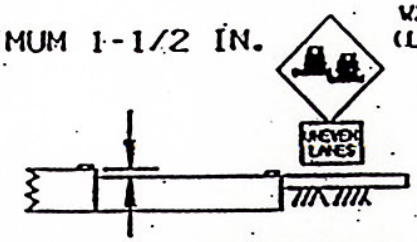
a - 48 inches x 48 inches when the speed limit is greater than 30 mph, and
b - 36 inches x 36 inches when the speed limit is 30 mph or less.

TRAFFIC CONTROL TREATMENT OF LONGITUDINAL JOINTS AND EDGE DROP-OFFS IN WORK ZONES

UNEVEN LANES

MAXIMUM 1-1/2 IN.

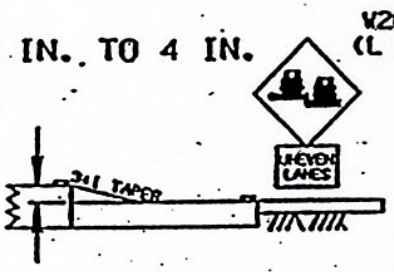
W20-X14 (L OR R)



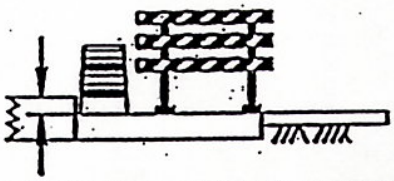
UNEVEN LANES - WITH TAPER

1-1/2 IN. TO 4 IN.

W20-X14 (L OR R)



1-1/2 IN. TO 4 IN.

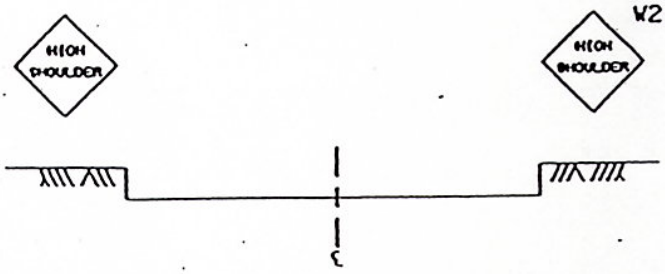


LANE SHALL BE CLOSED WITH APPROPRIATE LANE CLOSURE FROM APPENDIX B. CHANNELIZING DEVICES AT A MAXIMUM OF 100 FT. SPACING AND A TYPE III BARRICADE EVERY 1000 FT.

NOTE: FOR DIVIDED HIGHWAYS, USE SIGNS ON RIGHT AND LEFT SIDE. SIGN SEQUENCE SHOWN FOR ONE DIRECTION ONLY; OTHER DIRECTION SHALL BE IDENTICAL.

MILLED EDGE

W21-X9

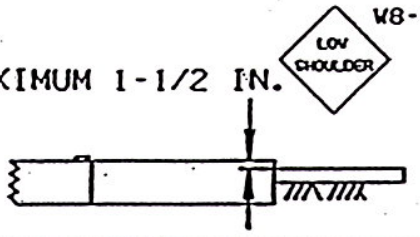


NOTE: MILLED EDGES SHOULD BE TREATED WITH TAPERS, CHANNELIZERS, AND SIGNING AS SHOWN ON EDGE DROP-OFF DETAILS.

TRAFFIC CONTROL TREATMENT OF LONGITUDINAL JOINTS AND EDGE DROP-OFFS IN WORK ZONES

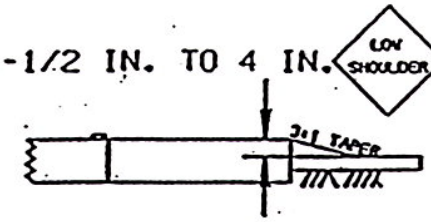
EDGE DROP OFF

MAXIMUM 1-1/2 IN.



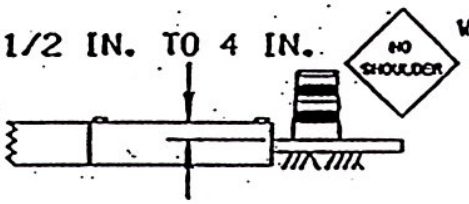
EDGE DROP OFF - WITH TAPER

1-1/2 IN. TO 4 IN.



1-1/2 IN. TO 4 IN.

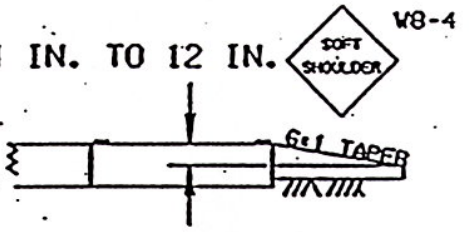
SHOULDER SHALL BE CLOSED WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES AT A MAXIMUM OF 100 FT. SPACING.



EDGE DROP-OFF WITH TAPER (SHOULDER - OPEN)

4 IN. TO 12 IN.

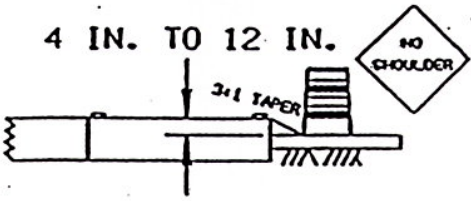
THIS CONDITION WILL NOT BE PERMITTED UNLESS THE 6:1 SLOPE IS COMPACTED SO THAT A VEHICLE MAY SAFELY DRIVE ONTO IT WITHOUT LOSING CONTROL AND IN THE OPINION OF THE ENGINEER THERE ARE NO OTHER HAZARDOUS CONDITIONS.



EDGE DROP-OFF WITH TAPER (SHOULDER - CLOSED)

4 IN. TO 12 IN.

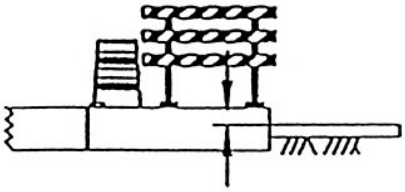
SHOULDER SHALL BE CLOSED WITH APPROPRIATE WARNING SIGNS AND CHANNELIZING DEVICES AT A MAXIMUM OF 100 FT. SPACING



---

4 IN. TO 12 IN.

ADJACENT LANE SHALL BE CLOSED WITH APPROPRIATE LANE CLOSURE LAYOUT SHOWN IN APPENDIX B. CHANNELIZING DEVICES TO BE AT A MAXIMUM OF 100 FT. SPACING AND TYPE III EVERY 1000 FT.



NOTE: SIGNS ARE REQUIRED ONLY ON THE SIDE OF THE ROAD THAT IS AFFECTED BY CONSTRUCTION (EXCEPT SIGNS THAT ARE FOR A LANE CLOSURE ON DIVIDED HIGHWAYS).

This Page Left Blank Intentionally

SECTION 01 57 12

EROSION CONTROL (WisDOT 628)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes prevention and control of soil erosion and siltation and the resultant turbidity of streams, lakes, and impoundments.

B. Related Sections:
   1. Section 31 23 30 - Excavating, Backfilling, and Compacting
   2. Section 31 25 10 - Temporary Erosion Control
   3. Section 32 92 12 - Turf Establishment
   4. Section 33 42 20 - Pipe Culverts

C. Basis of Payment:
   1. All expenses shall be borne by the Contractor with no direct compensation.
   2. Failure to comply with established erosion control measures will result in withholding of progress payments by the Owner.

1.02 SUBMITTALS

A. Proposed schedule for accomplishment of Work within, adjacent to, or affecting surface water.

B. Erosion control schedule.

C. Submit within 30 days of Notice of Award and prior to the Preconstruction Conference.

1.03 QUALITY ASSURANCE

A. Obtain all necessary permits from the responsible regulatory agencies for temporary erosion control measures not shown on the Drawings.

B. “Wisconsin Site Best Management Handbook” by the WDNR Bureau of Wastewater Management will be the basis for all erosion control on this Project.

1.04 REFERENCES

A. WisDOT 628 - Erosion Control

1.05 SEQUENCING AND SCHEDULING

A. Construct drainage facilities and turf establishment concurrently with earthwork operation.

B. Complete construction and finishing operation on a drainage area basis to minimize erosion.

C. Incorporate erosion control measures at the earliest practical time during construction.

D. Install erosion control measures as directed prior to the disturbance of inplace ground cover in critical areas that are tributary to public waters.

1.06 MAINTENANCE

A. Maintain all erosion control facilities to provide proper function throughout the Project.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

A. Shape exposed soil areas to permit runoff with minimal erosion.

B. Install safeguards to prevent water pollution from haul roads, work platforms or other temporary construction facilities.

C. Restore all plant, equipment or other supplementary operation sites to prevent siltation and erosion.

D. Repair any offsite damage resulting from failure to install or maintain erosion control measures.

END OF SECTION

SECTION 01 71 13

MOBILIZATION (WisDOT 619)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Preparatory work and operations.
   2. Movement of personnel, equipment, supplies and incidentals to the Site.
   3. Establishment of Contractor offices and facilities.

B. Basis of Payment:
   1. If the Lump Sum Bid amount for Mobilization exceeds 5 percent of the total Base Bid amount, the Owner will withhold the amount in excess of 5 percent until Substantial Completion of the Project.

1.02 REFERENCES

A. WisDOT 619 - Mobilization

1.03 PERFORMANCE REQUIREMENTS

A. Submittal of information listed under Article 1.04.

B. Installation of temporary sanitary facilities.

C. Erection of a field office.

D. Commencement of Work.

1.04 SUBMITTALS

A. Approved Project Schedule.

B. Shop Drawing Schedule.

C. List of Proposed Subcontractors.

D. List of Proposed Suppliers.

E. Material and Procedural Submittals, as required.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

Not Used

END OF SECTION

This Page Left Blank Intentionally

SECTION 01 71 23

FIELD ENGINEERING

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Field engineering provided by Contractor.
   2. Site layout.
   3. Staking.
   4. Quantity surveys and computations.

B. Method of Measurement: All field engineering will be considered incidental to the Work.

1.02 SUBMITTALS

A. Submit name and qualifications of surveyor that will perform Work.

B. Submit log or other records of all survey Work completed.

C. Submit copies of measurement and calculations for quantity surveys.

1.03 QUALITY ASSURANCE

A. All Work in this Section shall be under the direction of a surveyor registered in the State in which the Project is located.

1.04 SITE CONDITIONS

A. Benchmarks and control points are identified on the Drawings or wlll be provided upon request.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify locations of control points prior to start of Work.

B. Relate information given on the Drawings to existing Site conditions.

C. Promptly advise Engineer of any discrepancies.

3.02 PREPARATION

A. Protect and preserve all benchmarks and control points.

B. Advise Engineer of the required relocation of any reference points due to grade changes or other reasons.

C. Replace dislocated reference points based on original survey control.

3.03 SURVEY REQUIREMENTS

A. Staking:
   1. Establish locations, layouts, lines and elevations by instrumentation and similar methods for all necessary improvements to complete the Work.
   2. Tolerances:
      a. Horizontal Distances: 1/7500.
      b. Horizontal Angles: 0 degrees - 00 minutes - 00 feet - 01 inches.
      c. Elevation:

      $0.050ft.x\sqrt{length\ (miles)}$
   3. Maintain log or record book indicating all Work completed for review and submittal.

END OF SECTION

SECTION 02 41 33

REMOVING PAVEMENT AND MISCELLANEOUS STRUCTURES (WisDOT 204)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Removal and disposal of:
      a. Pavements.
      b. Culverts.
      c. Guard rail.
   2. Salvaging of designated materials.
   3. Backfilling of resulting depressions.

B. Related Sections:
   1. Section 31 23 10 - Excavation and Embankment

C. Method of Measurement:
   1. General:
      a. Only materials and items designated for removal will be measured.
      b. Removal and salvage items will be measured separately as identified by the Item Name.
   2. Measurement by Area: Surface of uniform thickness will be measured by area in square units.
   3. Measurement by Length:
      a. Length measurements will be made along the longitudinal centerline.
   4. Measurement by Lump Sum: Items will be measured separately by the lump sum including appurtenances.

D. Basis of Payment:
   1. Removal of abandoned fences shall be considered incidental.
   2. Removal of bituminous curbing and bituminous pavements less than 6 inches thick shall be considered incidental.
   3. The backfilling of depressions resulting from removals shall be considered as embankment under Section 31 23 10.
   4. Payment for acceptable quantities of removal, salvage or abandon items shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

1.02 REFERENCES

A. WisDOT 203 – Removing Old Culverts and Bridges

B. WisDOT 204 - Removing or Abandoning Miscellaneous Structures

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Sawing Pavement:
   1. Saw concrete pavement along removal lines to a depth 1/3 of the pavement thickness.
   2. Saw bituminous pavement along removal lines through entire pavement thickness.

3. Produce a neat, square edge prior to restoration.

B. Protect all inplace structures and facilities not designated for removal.

3.02 REMOVAL OPERATIONS

A. Remove only structures and facilities that have been so marked by Owner.

B. Complete all removal operations prior to adjacent new construction.

C. Remove materials designated for salvage in a manner that will not result in damage.

D. Completely remove structures that are designated for removal.

E. Whenever possible, remove concrete to an existing joint.

3.03 DISPOSAL OF MATERIALS AND DEBRIS

A. Stockpile all materials designated for salvage at locations approved by Owner.

B. Dispose of all materials not designated for salvage in accordance with all applicable laws and ordinances.

C. Submit written request to Owner for disposal within right-of-way embankments.

D. Submit written request to Owner for burning operations.

E. All surplus excavated materials shall become the property of Contractor for disposal.

3.04 BACKFILLING DEPRESSIONS

A. Backfill all depressions resulting from removals in accordance with Section 31 23 10.

END OF SECTION

SECTION 31 23 10

EXCAVATION AND EMBANKMENT (WisDOT 205 and 207)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes construction of excavations and embankments within the designated construction limits.

B. Basis of Payment:
   1. Payment for acceptable quantities of excavation, embankment, and borrow shall be at the contract unit price as listed on the Bid Form. All associated work items including but not limited to all necessary shoring, sheeting, or barriers shall be considered incidental. The estimated quantity of final, compacted in-place borrow material is 60 cubic yards. This quantity is provided for information only and actual quantity may vary, at no additional cost to the Owner. Clearing and grubbing of any brush or trees 4 inches or less in diameter shall be considered incidental.

1.02 REFERENCES

A. WisDOT:
   1. 205 - Roadway and Drainage Excavation
   2. 207 - Embankment

PART 2 PRODUCTS

2.01 MATERIALS

A. Granular Borrow: WisDOT 209, Grade 2, except that all material must pass the 1-inch sieve.

B. Random fill includes all soils except those classified in ASTM D2487 as Pt, OH, OL, MH or CH. Free from ice, snow, frozen earth, trash, debris, organic material, stones larger than 3 inches in any dimension.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. If present, remove ice and snow prior to grading operations.

B. All grading shall conform to the planned grades, cross-sections and stakes.

C. Confine operations to established limits.

D. Provide and install all necessary shoring, sheeting, or barriers required to accommodate construction staging, maintenance of traffic, and to limit area of excavations.

E. Maintain Site in a well-drained condition at all times.
   1. Install planned drainage facilities concurrent with embankment operations.
   2. Provide temporary drainage facilities to maintain existing drainage courses until permanent facilities are operative.

3.02 PREPARATION OF EMBANKMENT FOUNDATION

A. Remove topsoil, organic and unstable material from the roadbed prior to placing embankment.

3.03 EXCAVATING OPERATIONS

A. Conform to lines, grades and slopes indicated on the Drawings.

B. Provide seepage trenches for granular backfill replacement of unstable areas.

3.04 DISPOSAL OF EXCAVATED MATERIAL

A. Use suitable excavated materials for embankment construction.

B. Construct embankment layers from uniform materials.

C. Place granular materials in upper most portion of the embankment.

D. Mechanically mix non-uniform soils to produce uniform moisture content and density.

E. Excavate all suitable topsoil material separately and stockpile.

F. Do not place snow, ice, or frozen lumps in the roadbed embankment.

G. Do not place stone, concrete or bituminous fragments exceeding 3 inches in any dimension roadbed embankment.

H. Do not place stone, concrete, or bituminous fragments exceeding 3 inches in the upper 6 inches of roadbed embankment or within 18 inches of the structure.

I. All surplus excavated materials shall become the property of the Contractor for disposal.

3.05 PLACING EMBANKMENTS

A. Do not place material on soil which is frozen.

B. Backfill excavations below subgrade and seepage trenches in accordance with this Section.

C. Deposit and spread material in uniform layers parallel to the profile grade extending over the full width of the embankment.

D. Place upper 3 feet of roadbed in maximum 8-inch layers.

E. Place remainder of roadbed in maximum 12-inch layers.

3.06 COMPACTING EMBANKMENTS

A. Compact upper 3 feet of embankment to not less than 100 percent of Standard Proctor Density.

B. Compact remainder of embankment to not less than 95 percent of Standard Proctor Density.

C. Maintain proper moisture content during placement and compaction.

3.07 FINISHING OPERATIONS

A. Finish all earthwork to within 0.1 foot of the staked grade.

B. Conduct finishing and topsoiling concurrent with the grading operations to provide for erosion control.

END OF SECTION

SECTION 31 23 50

PREPARING THE FOUNDATION (WisDOT 211)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes shaping and compacting of subgrade prior to placement of base course.

B. Related Sections:
   1. Section 31 23 10 - Excavation and Embankment
   2. Section 31 23 33 - Trench Excavation and Backfill
   3. Section 31 34 15 - Geotextile Fabrics
   4. Section 32 11 14 - Test Rolling

C. Basis of Payment:
   1. All subgrade preparation shall be considered incidental.

1.02 REFERENCES

A. WisDOT 211 - Preparing the Foundation

1.03 SEQUENCING AND SCHEDULING

A. Prepare subgrade after unstable areas have been repaired and in-place surface courses have been removed.

PART 2 PRODUCTS

Not Used

PART 3 EXECUTION

3.01 PREPARATION

A. Re-excavate, compact and shape the top 6 inches of subgrade area to provide smooth, stable surface for the placement of base course thereon.

B. Compact subgrade material to 100 percent of Standard Proctor Density.

C. Produce and maintain the necessary moisture content in the subgrade material by scarification or application of water.

D. Continue operations until no rutting or displacement occurs under construction traffic.

E. Provide a finished surface within 0.05 foot of the prescribed elevation at all locations.

END OF SECTION

This Page Left Blank Intentionally

SECTION 31 25 10

TEMPORARY EROSION CONTROL (WisDOT 628)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Temporary measures to control soil erosion and sedimentation.
   2. Furnishing, installing and maintaining erosion or sediment control devices.

B. Related Sections:
   1. Section 32 92 12 - Turf Establishment

C. Method of Measurement:
   1. Erosion Mat: Measure by number of square yards furnished and acceptably installed.
   2. Erosion Bale: Measure by number of bales furnished and acceptably installed.
   3. Silt Fence:
      a. Measure by linear foot furnished and acceptably installed and maintained.
      b. Measure along base of fence from outside to outside of end posts.
   4. Silt Fence Maintenance: Will not be measured separately.

D. Basis of Payment:
   1. Payment for acceptable quantities of erosion control items shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

1.02 REFERENCES

A. WisDOT 628 - Erosion Control

PART 2 PRODUCTS

2.01 MATERIALS

A. Materials: WisDOT 628.2.

PART 3 EXECUTION

3.01 GENERAL

A. Coordinate erosion control measures with earthwork and turf establishment operations.

B. Complete grading, finishing, erosion control and turf establishment on a drainage area basis to prevent excessive soil erosion.

3.02 PLACING TEMPORARY EROSION CONTROL ITEMS

A. Construct items in conformance with typical sections and elevation controls shown on the Drawings.

B. Remove all items upon completion of the contract work.

C. Spread and shape accumulated sediment to permit natural drainage and provide for turf establishment.

3.03 ACCEPTANCE OF WORK

A. Maintain and repair erosion control items to insure proper function.

END OF SECTION

SECTION 31 37 00

RIPRAP (WisDOT 606)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Stone riprap.
   2. Filter material.

B. Method of Measurement:
   1. Riprap:
      a. Measure by volume in cubic yards based on surface dimensions and specified thickness.
      b. Measure each type and class separately.
   2. Filter Materials:
      a. Geotextile filter:
         1) Will not be measured separately and is considered incidental to the Work.

C. Basis of Payment:
   1. Bid Price Includes:
      a. Excavation.
      b. Foundation preparation.
      c. Geotextile filter:
         1) Type R.
         2) Type HR.
   2. Payment for riprap shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

1.02 REFERENCES

A. WisDOT:
   1. 606 - Riprap
   2. 645 - Geosynthetics

PART 2 PRODUCTS

2.01 MATERIALS

A. All materials shall be in accordance with the respective WisDOT Specifications as follows:
   1. Riprap Materials: WisDOT 606, Except waste concrete shall not be acceptable.
   2. Fabric: WisDOT 645.

2.02 ACCESSORIES

A. All accessories shall be in accordance with the respective WisDOT Specifications.

PART 3 EXECUTION

3.01 FOUNDATION PREPARATION

A. Excavate and shape foundation areas as required.

B. Compact all loose foundation material prior to filter material placement.

C. Provide smooth surface, free of stones, sticks, and other debris.

3.02 FILTER MATERIAL

A. Geotextile Filter:
   1. Place multiple fabric widths with the longest dimension parallel to the direction of water flow.
   2. Splice multiple fabric widths by mechanical seaming or minimum 24-inch overlap (36 inches under water).
   3. Overlap joints in shingle arrangement.
   4. Bury upgrade edges of fabric to a minimum depth of 8 inches to prevent undermining.
   5. Anchor fabric to prevent movement during riprap placement.
   6. Do not operate equipment on fabric.

3.03 RIPRAP STONE

A. Placement:
   1. Begin placement at the lowest elevation and work upgrade.
   2. Do not drop stones from greater than 1-foot height.
   3. Position stones to provide uniform size distribution and minimize void space.
   4. Level surface to provide uniform thickness and appearance.
   5. Seat smaller stones between the larger stones to produce a uniform surface.
   6. Suitable material obtained from on-site rock excavation may be used as chinking.

3.04 THICKNESS REQUIREMENTS

A. All Areas: Minimum 85 percent of specified thickness.

B. Average: Minimum 95 percent of specified thickness.

END OF SECTION

SECTION 32 11 26

CRUSHED AGGREGATE BASE COURSE (WisDOT 305)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes construction of crushed aggregate base course on a prepared subgrade.

B. Related Sections:
   1. Section 31 23 50 - Preparing the Foundation
   2. Section 32 12 28 - Asphalt Surfacing

C. Method of Measurement:
   1. Aggregate Base:
      a. Measure by weight in tons based on weight tickets provided to the Owner.

D. Basis of Payment:
   1. Payment for acceptable quantities of aggregate base shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

1.02 REFERENCES

A. WisDOT 305 - Dense Graded Base

1.03 SUBMITTALS

A. Provide for each aggregate material:
   1. Name and location of source.
   2. Two sample gradations taken within the past 30 days from each potential source, delivered to Engineer at least 10 days prior to placement on the project.

1.04 HANDLING AND DELIVERY

A. Stockpile and drain aggregate removed from below water for a minimum 24 hours prior to delivery.

1.05 SITE CONDITIONS

A. Deposit aggregate only on dry, compact subgrade so that no rutting or displacement will occur under construction traffic.

PART 2 PRODUCTS

2.01 MATERIALS

A. Crushed Aggregate Base Course Materials: WisDOT 305.

B. Aggregate Gradation: As indicated on the Bid Form.

PART 3 EXECUTION

3.01 CONSTRUCTION REQUIREMENTS

A. Placing and Mixing:
   1. Place aggregate in layers to produce a maximum 3 inches of compacted thickness.
   2. With vibratory compaction, place to produce maximum 6 inches of compacted thickness.
   3. Deposit only the amount of aggregate that is intended to be spread and compacted during the same day.
   4. Add water as may be required during mixing to produce proper compaction.

B. Spreading and Compacting:
   1. Mix aggregate uniformly to maintain proper gradation.
   2. Spread and compact each layer to the required cross section and density prior to placing a succeeding layer.
   3. Compact each layer to 100 percent of Standard Proctor Density.

C. Tolerances: Construct each course to within 0.05 foot of the planned grades and staked elevations at all locations.

3.02 PROTECTION

A. Place initial surface course or otherwise protect the in-place aggregate base within 72 hours after placement.

B. Remove and replace any portion of the material that becomes contaminated after placement.

END OF SECTION

SECTION 32 12 28

ASPHALTIC SURFACING (WisDOT 465)

PART 1 GENERAL

1.01 SUMMARY

A. Section Includes:
   1. Asphaltic surface.

B. Method of Measurement:
   1. Measurement shall be on a per ton basis based on the weight tickets.
   2. Weight will include the mixture of aggregate and asphalt delivered to and incorporated into the work. Asphaltic materials required for and incorporated into the mixture will not be measured separately for payment.
   3. Contractor shall furnish weight tickets at the time of delivery.

C. Basis of Payment:
   1. Payment for asphaltic concrete pavement, measured as provided above, will be paid at the contract unit price per ton.
   2. It is not anticipated that paving operations will require tack coat. If contractor operations dictate the need for tack coat, then tack coat shall be considered incidental.

1.02 REFERENCES

A. WisDOT:
   1. 211 - Preparing the Foundation
   2. 305 - Dense Graded Base
   3. 350 - Subbase
   4. 450 - General Requirements for Asphaltic Pavements
   5. 455 - Asphaltic Materials
   6. 460 - Hot Mix Asphalt Pavement
   7. 465 - Asphaltic Surface

1.03 SUBMITTALS

A. Submittals –shall include:
   1. Asphalt mix design in accordance with WisDOT Section 460.2.7.

PART 2 PRODUCTS

2.01 MATERIALS

A. Asphaltic Surface: Per WisDOT 465

B. Asphaltic Material: 58-28, per WisDOT 455.2.

PART 3 EXECUTION

3.01 APPLICATION

A. Construct pavement conforming to the general provisions of WisDOT 450.3.

B. Compaction of the pavement shall be in accordance with the HMA Pavement Density Maximum Density Method of WisDOT 460.3.3.

END OF SECTION

SECTION 32 12 50

SAW CUTTING PAVEMENT (WisDOT 690)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes partial-depth or full-depth sawing of old, existing concrete or asphaltic pavements, curb and gutter, driveways, sidewalks and similar work as shown on the Drawings or as directed.

B. Method of Measurement:
   1. Measurement will be by the linear foot of accepted work, excluding overcuts.

C. Basis of Payment:
   1. Payment for shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

PART 2 PRODUCTS

2.01 EQUIPMENT

A. Use diamond blades for full depth saw cuts of concrete pavement.

PART 3 EXECUTION

3.01 INSTALLATION

A. Sawing Existing Pavement:
   1. Saw cut to be straight.
   2. Minimum depth is 2 inches.
   3. Remaining surface to be generally vertical for full depth.

END OF SECTION

This Page Left Blank Intentionally

SECTION 32 92 12

TURF ESTABLISHMENT

PART 1 GENERAL

1.01 SUMMARY

A. Section includes establishment of herbaceous ground cover on designated areas.

B. Related Sections:
   1. Section 31 23 10 - Excavation and Embankment
   2. Section 31 25 10 - Temporary Erosion Control

C. Method of Measurement:
   1. Fertilizer: Fertilizer will not be measured separately.
   2. Seeding: Seeding, permanent and temporary, will not be measured separately.
   3. Water: Water for turf establishment will be considered incidental.
   4. Topsoil: Topsoil will not be measured separately.
   5. Salvaged Topsoil: Salvaged topsoil will not be measured separately.
   6. Turf Establishment: Measure turf establishment by the square yard.
   7. Establishment of turf in Contractor staging area(s) shall be considered incidental.
   8. All measurements to be within the area of construction.

D. Basis of Payment:
   1. Payment for acceptable quantities of turf establishment shall be at the contract unit price as listed on the Bid Form. All associated work items including but not limited to salvaged topsoil, topsoil, fertilizer, seed, and water shall be considered incidental.

1.02 REFERENCES

A. WisDOT:
   1. 625 - Topsoil and Salvaged Topsoil
   2. 627 - Mulching
   3. 629 - Fertilizer and Agricultural Limestone
   4. 630 - Seeding

1.03 SUBMITTALS

A. Submit certified test report for each seed mixture.

1.04 ACCEPTANCE OF WORK

A. Turf establishment will be accepted on a total project basis.

B. All erosion control items must also be in place and properly maintained prior to acceptance.

C. Once accepted, Contractor is relieved of any further maintenance or repair.

1.05 DELIVERY, STORAGE, AND HANDLING

A. Protect seed from moisture, heat, rodents, and other damage prior to use.

B. Deliver fertilizer in waterproof bags showing weight, chemical analysis and name of manufacturer.

1.06 SCHEDULE OF WORK

A. Coordinate turf establishment to minimize lag time after topsoil placement.

B. Plant seed between May 1 and September 20.

1.07 MAINTENANCE

A. Maintain and repair all areas until acceptance.

PART 2 PRODUCTS

2.01 MATERIALS

A. Topsoil: WisDOT 625.2.

B. Mulch: WisDOT 627.

C. Fertilizer: WisDOT 629, Type B.

D. Seed: WisDOT 630.2.1.5.

PART 3 EXECUTION

3.01 SOIL PREPARATIONS

A. Remove all undesirable weeds as directed.

B. Loosen topsoil on all areas with 2:1 slopes or flatter prior to seeding.

C. Cultivate to a depth of 3 inches using discs or other suitable equipment.

D. Operate equipment at right angles to direction of drainage.

E. Fill all washouts prior to cultivation.

F. Finish all areas to provide a smooth, moist, even-textured foundation of uniform density.

G. Approval of the Engineer is required prior to placing seed.

3.02 CONSTRUCTION REQUIREMENTS

A. Applying Fertilizer and Conditioners:
   1. Apply fertilizer uniformly over the designated area using mechanical spreading devices.
   2. Apply at a rate of 7 pounds per 1,000 square feet.
   3. Apply fertilizer no more than 48 hours prior to seeding.

B. Sowing Seed:
   1. Apply seed mixtures over designated areas at a rate of 3 pounds per 1,000 square feet.
   2. Apply seed uniformly by mechanical or hydrospreading method.
   3. Firm all seeded areas with a drag or cultipacker immediately after seeding and prior to mulching.

END OF SECTION

SECTION 33 42 20

PIPE CULVERTS (WisDOT 520)

PART 1 GENERAL

1.01 SUMMARY

A. Section includes construction of culverts for the passage of surface water through embankments.

B. Related Sections:
   1. Section 31 23 10 - Excavation and Embankment

C. Method of Measurement:
   1. Culvert Excavation: Incidental to the culvert pipe.
   2. Culvert Pipe: Measure each type and size by length in linear feet of pipe installed along the centerline not including end sections.
   3. Culvert Aprons: Measure each type of apron installed as a unit.

D. Basis of Payment:
   1. Payment for acceptable quantities of culvert installation shall be at the contract unit price as listed on the Bid Form. All associated work items shall be considered incidental.

1.02 REFERENCES

A. WisDOT 520 - Pipe Culverts

B. WisDOT 521 Corrugated Steel Culverts

PART 2 PRODUCTS

2.01 MATERIALS

A. Pipe Material: Steel.

B. Pipe: WisDOT 521 and as indicated on the Drawings.

C. Aprons: Same material as the pipe.

PART 3 EXECUTION

3.01 INSTALLATION

A. Provisions apply to either new or salvaged pipe.

B. Excavation, foundation and backfill procedures shall be in accordance with Section 31 23 10.

C. Furnish and install measures necessary to accommodate construction staging and maintenance of traffic.

D. Metal Pipe:
   1. Lay circumferential joints with the outside laps pointing upgrade and the longitudinal joints on the sides.
   2. Join sections with metal connecting bands, centered over the joint.

3.02 CLEANING

A. Remove all sediment and debris from pipe interior.

B. Remove all sediment and debris from in-place pipe prior to installing extension pipe.

END OF SECTION