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## MAINTENANCE OF TRAFFIC (OAKDALE 1404)

### PART 1 GENERAL

#### 1.01 SUMMARY

- A. Temporary procedures and equipment for safely maintaining and controlling traffic within and near Site during construction.
- B. Related Sections:
  - 1. Section 2104: Removing Pavement and Miscellaneous Structures
  - 2. Section 3354: Pavement Marking
  - 3. Section 2564: Traffic Signs and Devices
- C. Method of Measurement:
  - 1. Measure all required procedures and equipment on a Lump Sum basis, except as otherwise noted. Includes all temporary traffic control, detours, flagging, and all other items needed for maintenance of traffic for the entire project.
  - 2. Procedural and equipment revisions resulting from minor changes or field adjustments will be considered incidental.
- D. Basis of Payment:
  - 1. Payment for temporary maintenance of traffic 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 will be determined by percentage of total Work 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 – Roadside Design Guide
- B. ANSI/ISEA 107 – Standard for High-Visibility Safety Apparel and Headwear

- C. MnDOT:
  - 1. 1404 - Maintenance of Traffic
  - 2. 1710 - Traffic Control Devices
  - 3. Standard Signs Manual
  - 4. Standard Plate No. 80001 – Standard Barricades
  - 5. Standard Plate No. 8337C – Temporary Portable Precast Concrete Barrier
- D. Minnesota Manual on Uniform Traffic Control Devices (MN MUTCD) – Temporary Traffic Control, and “Field Manual for Temporary Traffic Control Zone Layouts”
- E. Minnesota Traffic Engineering Manual – Chapter 8.

### **1.03 DEFINITIONS**

- A. Long-term Temporary Traffic Control Zone: Any temporary traffic control zone that occupies a location more than 3 days.
- B. Intermediate-term/Night Temporary Traffic Control Zone: Any temporary traffic control zone that occupies a location during hours of darkness or up to 3 days.
- C. Short-term Temporary Traffic Control Zone: Any temporary traffic control zone that occupies a location greater than 15 minutes during daylight hours.

### **1.04 SUBMITTALS**

- A. Preconstruction:
  - 1. Traffic Control Plan.
  - 2. Names, addresses, and phone numbers of 2 local persons who will respond to requests for maintenance.
- B. At least 24 hours prior to construction and upon request, present all traffic control devices intended for use on the Project to Engineer to ensure conformance with MN MUTCD and MnDOT Standard Signs Manual.

### **1.05 QUALITY ASSURANCE**

- A. Permits: Obtain necessary permits from MnDOT, counties, and cities to allow for signing, barricading, and Work within rights-of-way as necessary to complete Project.
- B. Operations: Conduct all operations in accordance with the MN MUTCD Field Manual.
- C. Flaggers:
  - 1. Contractor shall furnish flagpersons as required to adequately control traffic. Flagpersons shall conform to the requirements set forth in the MN MUTCD.
  - 2. Contractor shall provide all flaggers with the MnDOT Flagger Handbook and shall observe the rules and regulations contained therein. This handbook shall be in the possession of all flaggers while flagging on the Project. Flaggers shall not be assigned other duties while working as authorized flaggers.
  - 3. Flagpersons shall wear high visibility retroreflective safety vests, pants, and hats at all times while actively flagging on the Project. High visibility apparel shall comply with current Minnesota OSHA Rules 5207.0100 and 5207.1000.

4. Contractor shall provide 2-way radios for flagpersons.
5. Flagperson shall have a STOP/SLOW sign with a 5-foot minimum staff.
6. Flaggers shall not override in-place signals, stop signs, or control interchanges. Only law enforcement officials are permitted to control these items.

## **1.06 DESIGN REQUIREMENTS**

- A. Maintain traffic on in-place, temporary or permanent roadway, or a combination of these.
- B. Access to all individual properties fronting a roadway under construction must be maintained on in-place or permanent roadway, or via an Engineer-approved gravel surface.
- C. Provide and maintain proper signing, flagpersons (as appropriate) and warning devices in order to:
  1. Close or restrict traffic on a roadway.
  2. Provide adequate detour information.
  3. Protect Work, workers, and motorists.
  4. Inform motorists of pending construction and direct motorist through Work zone.
- D. Lanes:
  1. Minimum 12 feet.
  2. Continuous throughout Project, and may be adjacent to each other or separated.

## **1.07 SEQUENCING AND SCHEDULING**

- A. Closure and Detour Requests:
  1. Submit request for short-term lane closure to Engineer at least 24 hours prior to time of closure.
  2. Submit request to close street and divert traffic to Engineer at least 3 working days prior to time of closure.
  3. Authority to divert or close shall be subject to Engineer's approval.
  4. Contact proper agency and Engineer at least 72 hours prior to restricting traffic on roadways scheduled for short-term lane closures only.
- B. Advance Notice:
  1. Provide minimum 72-hour notice for all road closures and detours to the following:
    - a. Engineer.
    - b. MnDOT.
    - c. Minnesota State Patrol.
    - d. City of Oakdale Police Department.
    - e. City of Oakdale Fire Department.
    - f. Local Ambulance Dispatcher.
    - g. City of Oakdale Public Works Department.
    - h. Washington County Department of Public Works.
    - i. Local School District.
    - j. MTC or other local transit.
    - k. Postal Service.
  2. Notification of postal service, delivery services, and postal recipient shall be made 5 days prior to relocation.

3. Notify proper railroad agency prior to beginning any Work at or adjacent to railroad property.
4. Provide minimum 48-hour notice for all road closures and detours to all affected residences and businesses, showing when closures and detours will occur and duration expected.
5. 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.

C. Restrictions:

1. Inclement Weather: Lane closures will not be permitted during inclement weather or when Engineer determines such closure will be a hazard to traffic.
2. Nighttime Work, approved in advance by Engineer:
  - a. Provide adequate lighting as necessary to supplement or replace existing street lighting so Work, personnel, equipment, traffic control devices, and flaggers are visible to motorists.
  - b. Workers shall wear reflectorized jumpsuits during nighttime construction.
3. Railroads: Maintain in-place railroad tracks, crossings and signals at all times unless otherwise permitted by railroad agency and Engineer.
4. Do not close or restrict traffic on 2 adjacent parallel streets at the same time.
5. Traffic may be restricted on any street requiring milling, miscellaneous roadwork and/or surfacing, subject to the following:
  - a. Local traffic shall be maintained during edge milling operations.
  - b. ROAD WORK AHEAD signs shall be placed in advance of milling operations and flagpersons provided as necessary to guide traffic through construction area.
  - c. Streets may be closed or have access restricted to traffic for full-width milling and for surfacing, consistent with hours specified, or local traffic may be maintained consistent with above provisions.
  - d. Coordinate milling, miscellaneous roadwork and surfacing with street reconstruction to afford local residents access to the vicinity of their homes.
  - e. Drop-offs where traffic will cross from or to the in-place surface, or from or to the milled surface, shall be tapered and/or chamfered so as to provide for safe passage of traffic.
  - f. ROUGH ROAD AHEAD and BUMP signs shall be placed at locations determined by Engineer after milling operations have been completed.
  - g. Do not mill any notches for surfacing tapers until immediately prior to paving, except that, as approved by Engineer, notches may be milled if a temporary bituminous taper is installed and maintained until surfacing taper is installed.
6. The previous restrictions may be modified as necessary to ensure safe traffic operations.

## 1.08 TRAFFIC CONTROL PLAN

- A. Submit an overall Traffic Control Plan for approval within 10 days after award of Contract and 5 days prior to initiating any construction.
- B. As construction progresses, provide on a weekly basis an updated Traffic Control Plan to Engineer, for approval and suggested modifications, covering the following 2 weeks of Work. Plan will reflect the instructions specified and will include:
  1. Planned sequence of construction operations.
  2. Proposed street closures or restrictions and estimated dates.

3. Provisions for routing detoured traffic.
4. Signs and devices to be used.

C. Acceptance: Each Traffic Control Plan is subject to acceptance, rejection or suggested revision by Engineer.

D. Revisions: Revisions to Traffic Control Plan are subject to approval of Engineer.

E. No construction operations may begin without complete approval of the Plan.

F. Final Bituminous Course:

1. A separate plan for traffic control may be prepared for installation of the final bituminous binder and wear courses.
2. Plan does not have to adhere to above restrictions, but shall be prepared in detail and submitted to Engineer for approval.
3. Engineer will determine viability of planned sequence and may accept, reject, or suggest alterations to this separate plan.
4. Do not begin installation of final bituminous binder and wear course, crosswalks, or pavement markings without complete approval of this separate plan by Engineer, or without inclusion of these elements in the above-referenced sequence of construction.

## **1.09 CONTRACTOR REQUEST FOR DETOUR**

- A. Contractor may request through traffic be detoured consistent with provisions and restrictions specified.
- B. Request shall contain information needed to justify request and select routes to be established.
- C. If arrangements can be made that are satisfactory to agencies having jurisdiction over roads to be used, contracting authority may then, at its sole discretion, establish an approved detour subject to the following conditions. Contractor, at Contractor's expense, shall:
  1. Design, provide, install, maintain, and remove all necessary traffic control devices on detour roads.
  2. Reimburse Owner for all expenses incurred in maintaining and restoring detour roads, except for snow removal.
  3. Fulfill their obligations for maintenance of local traffic by furnishing, placing, and maintaining traffic control devices and other traffic protection measures required on roads undergoing improvements.

## **1.10 WINTER SUSPENSION**

- A. Make passable and open road to traffic during periods of authorized winter suspension to eliminate need to maintain detours.
- B. When Work is resumed after winter suspension, Contractor shall replace or renew any Work lost or damaged during suspension, and shall remove, to the extent directed by Engineer, any temporary construction or materials used in maintenance thereof.

C. When winter suspension results from an extension of Contract Time due to fault or negligence on the part of Contractor, Contractor shall not suspend operations until roads or temporary facilities which are being used by traffic are in such condition that only routine maintenance will be required to adequately accommodate through and local traffic during the anticipated period of suspension. In this instance, all maintenance of roads, temporary facilities, as well as traffic control devices will be Contractor's responsibility and will be classified as incidental Work.

## **1.11 INSPECTION AND MAINTENANCE**

- A. Maintain traffic control devices on a 24-hour basis throughout term of the Contract, including Work suspensions.
  - 1. 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 barricade.
- B. Inspection:
  - 1. Check devices twice daily, including end of workday.
  - 2. Conduct 1 night (after work hours) inspection of devices each week.
  - 3. Immediately correct deficiencies in alignment visibility and reflectivity.
- C. Traffic Control Checklist:
  - 1. Complete attached checklist each day of each week that traffic control devices are used on Project.
  - 2. Upon request, submit completed checklist to Engineer or designated representative at a mutually agreeable time.
  - 3. Failure to submit checklist by agreed-upon time will be considered "noncompliance" in maintaining traffic control devices and may be subject to daily charge set forth under MnDOT 1807 - Failure to Complete the Work on Time.
  - 4. Additional copies of the traffic control devices checklist will be available from Engineer.
- D. Notice:
  - 1. Furnish names, addresses, and phone numbers of 2 local persons who will respond to requests for maintenance to the following:
    - a. Engineer.
    - b. City of Oakdale Police Department.
    - c. City of Oakdale Public Works Department.
    - d. MnDOT
- E. Provide a means of receiving maintenance requests on a 24-hour basis.
- F. Provide a means of receiving maintenance requests within 2 hours. Failure to respond to maintenance requests will result in Work being completed by Owner with twice the cost thereof being deducted from any monies due Contractor.

## **PART 2      PRODUCTS**

### **2.01 EQUIPMENT**

- A. Signs:
  - 1. Provide required signs in accordance with MN MUTCD, MnDOT Standard Signs Manual, Minnesota Traffic Engineering Manual, Field Manual, Drawings, and as approved by Engineer. See Section 2564.
  - 2. Retroreflective sheeting for signs shall be in accordance with MnDOT Technical Memorandum 06-04-T-02.
  - 3. Size, legend, and layout of signs shall be approved by Engineer prior to sign manufacture.
- B. Barricades:
  - 1. Provide 8-foot, Type III barricades in accordance with current MnDOT Standard Plate 8000I.
  - 2. Provide flashers on barricades.
  - 3. Provide at least 1 Type III barricade in a closed lane for every 1,000 feet of lane closure.
- C. Barriers: Provide temporary portable precast concrete barriers in accordance with current MnDOT Standard Plate 8337C.
- D. Channelizing Devices: Provide channelizing devices in accordance with MN MUTCD Section 6F.63, and Minnesota Traffic Engineering Manual 8-5.04.
- E. Ballast:
  - 1. Sandbags will be the only acceptable weight to stabilize traffic control devices.
  - 2. During freezing conditions, mix sand for bags and impact barrels with a deicer to prevent sand from freezing.
  - 3. Place sandbags on each foot of traffic control device to be stabilized.
- F. Extra Materials:
  - 1. In addition to traffic control devices approved by Engineer prior to each stage of construction, or as shown in Traffic Control Drawings, Engineer may require more traffic control as traffic conditions warrant.
  - 2. Store the following at a convenient location within Project limits of each portion of Project for use in an emergency, as approved by Engineer:
    - a. Minimum of 5 extra Type I barricades with flashers.
    - b. Minimum of 5 extra Type III barricades.
    - c. Minimum of ten 10 extra drums.
  - 3. No direct compensation will be made for furnishing, storing, and erecting these traffic control devices.
- G. Flashing Arrow Panels: Provide in accordance with MN MUTCD, and Minnesota Traffic Engineering Manual 8-5.09.
- H. Portable Changeable Message Sign: Provide in accordance with Minnesota Traffic Engineering Manual 8-5.08.

- I. Pavement Markings: Provide pavement markings in accordance with MN MUTCD and Minnesota Traffic Engineering Manual.

## **PART 3 EXECUTION**

### **3.01 SCHEDULE OF WORK**

- A. All roads under construction may be closed to through traffic. Spot closures for pipe work may be approved if proper traffic control signage is provided.
- B. Access to individual residences and businesses fronting all roadways in the project area shall be maintained at all times.

### **3.02 PREPARATION**

- A. Flagpersons: Utilize flagpersons on any roadway that is restricted to 1 lane of traffic, except as approved by Engineer.
- B. Conduct operations to allow continual fire and police access to all areas within Project.
- C. Inplace Facilities:
  1. Signs: See Section 2564.
    - a. Do not remove signs unless authorized by Engineer.
    - 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 City of Oakdale as directed by Engineer.
    - 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 MN MUTCD and Minnesota Traffic Engineering Manual.
  2. Mailboxes:
    - a. Prior to proceeding with any Work, relocate any mail and other delivery boxes within construction area and as designated by Engineer, to a location that will allow delivery during construction.
    - b. Remove and place on homeowner's property mailboxes designated by Engineer. Homeowner is responsible for postal service during construction.
    - c. Postal service and other affected delivery services shall approve all locations and installations.
    - d. Temporary mailbox banks may be utilized in accordance with the following:
      - 1) Accessible to postal service and postal recipient at all times.
      - 2) Numerous mailbox banks may be utilized to minimize distances from postal recipients.
      - 3) Provide materials to construct temporary mailbox banks.
    - e. Property owner's posts, cross members, and mailboxes not used during temporary relocation shall be properly stored by Contractor.

- f. If postal delivery is not achieved, Work shall stop immediately and remain stopped until the situation is corrected.

### **3.02 INSTALLATION**

- A. For signs that will be in-place for longer than 30 days, mount signs on posts driven into ground at proper height and lateral offset as detailed in MN MUTCD. For signs in-place for less than 30 days, or if this is not possible, maintain signs on portable supports or barricades.
- B. Signs shall not be mounted on metal drums.
- C. Placement of signs and barricades shall proceed in direction of traffic flow.
- D. Cover traffic control devices inconsistent with traffic patterns.

### **3.03 TRAFFIC PROTECTION**

- A. Do not deposit, store materials, or park equipment on or adjacent to any roadway open to traffic that will interfere with safe flow of traffic.
- B. Provide traffic barriers for any obstruction placed within “clear zone” as defined by AASHTO Guide for Selecting Locations and Designing Traffic Barriers.
- C. Keep roadways that 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.
  1. Open excavations/drop-offs adjacent to traveled roadway:
    - a. Schedule operations so as to minimize traffic exposure to uneven lanes, milled edges, and edge drop-offs.
    - b. Close a traffic lane, auxiliary lane, or shoulder on any road open to traffic when construction operations cause a drop-off greater than 4 inches adjacent to that lane or shoulder, unless adequately protected by traffic barrier.
    - c. Sign and delineate drop-offs, as shown in the Field Manual.
    - d. When excavations on roadways open to traffic exceed 1 foot in depth:
      - 1) Provide continuous portable concrete barriers for entire length of excavation.
      - 2) Include suitable end treatment consisting of tapered barrier sections, impact attenuators, or combination thereof.
      - 3) Place warning lights at 50-foot intervals.
    - e. Place portable concrete barriers with end treatments according to MnDOT “Guidelines for Portable Concrete Barrier Placement and End Treatments in Work Zones”.
  2. In lieu of precast concrete barrier, barrels and barricades may be used during construction, as approved by Engineer, provided that:
    - a. Construction work is actively done in or directly adjacent to 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. Barrels or barricades can be set outside the minimum widths required for traffic and at intervals as directed by Engineer.

E. 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 Work.
- 5. Cover newly poured concrete sidewalk with plywood after curing compound is applied to provide access at business entrances.

### **3.04 REMOVAL OF DEVICES**

- A. After signs are removed, remove sign posts as soon as possible.
- B. Removal of signs and barricades shall start at the end of construction areas and proceed toward oncoming traffic, unless otherwise directed by Engineer.

### **3.05 RESTORATION AND ADJUSTMENT**

- A. Replace any device found to be defective.
- B. Replace reflective material on both new and used traffic control devices whose effectiveness, in Engineer's opinion, has been substantially reduced from traffic or other causes.
- C. Keep traffic control signs and devices furnished in legible condition, including removing any grime deposited on devices by traffic, natural causes, or by nature of Work being performed.
- D. Relocate any traffic control device that is misplaced due to Contractor or subcontractor operations.
- E. Following construction, reinstall mail and other delivery boxes in convenient locations and in compliance with USPS regulations.
  - 1. Replace any box or supporting member that is damaged during construction.
  - 2. Permanent installation shall be acceptable to postal service, delivery service and property owner.

### **3.06 ADDITIONAL TRAFFIC CONTROL DEVICES**

- A. Furnish and install additional traffic control devices ordered by Engineer.
- B. Install and maintain devices in a functional and legible condition at all times.

**END OF SECTION**