

## SECTION 102 MAINTENANCE OF TRAFFIC

### 102-1 General Provisions.

**102-1.1 Description:** Maintain traffic within the limits of the project for the duration of the construction period, including any temporary suspensions of the work. Construct and maintain any necessary detour facilities. Provide necessary facilities for access to residences, businesses, etc., along the project. Furnish, install, and maintain traffic control and safety devices during construction. Furnish and install work zone pavement markings for maintenance of traffic in construction areas. Furnish and apply calcium chloride on the subgrade, unsurfaced base, or other unsurfaced traveled ways in order to control dust during construction operations. Provide any other special requirements for safe and expeditious movement of traffic as may be specified on the plans. The term, Maintenance of Traffic, includes all of such facilities, devices, and operations required for the safety and convenience of the public as well as for minimizing public nuisance.

**102-1.2 Sections Not Requiring Traffic Maintenance:** In general, do not maintain traffic over those portions of the project where no work is to be accomplished or where construction operations will not affect existing roads. However, do not obstruct or create a hazard to any traffic during the performance of the work, and repair any damage to existing pavement or facilities caused during the work.

**102-1.3 Detours Over Existing Roads and Streets:** When the Department specifies that traffic be detoured over roads or streets outside the project area, do not maintain such roads or streets. However, maintain all signs and other devices placed for the purpose of the detour.

**102-1.4 Contractor's Responsibility:** Maintain traffic starting the day work begins on the project or on the first day Contract Time is charged, whichever is earlier. Continually and adequately review traffic control devices to ensure proper installation and working order, including monitoring of lights. Provide an individual responsible for this review who is certified as an American Traffic Safety Services Association Certified Worksite Supervisor.

**102-1.5 Operation of Existing Movable Bridges:** The Department will maintain and operate existing moveable bridges which are to be removed by the Contractor until such time as they are closed to traffic. During this period, make immediate repairs of any damage to such structures caused by use or operations related to the work at no expense to the Department, but do not provide routine repairs or maintenance. In the event that use or operations result in damage to a bridge requiring repairs, give such repairs top priority to any equipment, material, or labor available.

### 102-2 Specific Requirements.

**102-2.1 Maintenance of Roadway Surfaces:** Maintain all lanes that are being used for the maintenance of traffic, including those on detours and temporary facilities, under all weather conditions. Keep the lanes reasonably free of dust, and, when necessary to accomplish this, sprinkle them with water, or apply some other dust palliative. Provide the lanes with the drainage facilities necessary to maintain a smooth riding surface under all weather conditions.

**102-2.2 Number of Traffic Lanes:** Maintain one lane of traffic in each direction. Maintain two lanes of traffic in each direction at existing four (or more) lane cross roads, where necessary to avoid undue traffic congestion. Construct each lane used for maintenance of traffic at least as wide as the traffic lanes existing in the area prior to commencement of construction. Do not allow traffic control and warning devices to encroach on lanes used for maintenance of traffic.

The Engineer may allow the Contractor to restrict traffic to one-way operation for short periods of time provided that the Contractor employs adequate means of traffic control and does not unreasonably delay traffic. When a construction activity requires restricting traffic to one-way operations, locate the flaggers within view of each other when possible. When visual contact between flaggers is not

possible, equip them with 2-way radios, use flag-carrying, official, or pilot vehicle(s), or use traffic signals.

**102-2.3 Crossings and Intersections:** Provide and maintain adequate accommodations for intersecting and crossing traffic. Do not block or unduly restrict any road or street crossing the project unless approved by the Engineer.

**102-2.4 Access for Residences and Businesses:** Provide access to all residences and all places of business.

**102-2.5 Protection of the Work from Injury by Traffic:** Where traffic would be injurious to a base, surface course, or structure constructed as a part of the work, maintain all traffic outside the limits of such areas until the potential for injury no longer exists.

**102-2.6 Alternative Traffic Control Plan:** The Contractor may propose an alternative Traffic Control Plan (TCP) to the plan presented in the Contract Documents. Have a Specialty Engineer sign and seal the alternative plan. Prepare the TCP in conformance with and in the form outlined in the current version of the Roadway Plans Preparation Manual. Indicate in the plan a TCP for each phase of activities.

Obtain the Engineer's written approval before beginning work using an alternate TCP. The Engineer's written approval is required for all modifications to the TCP. The Engineer will only allow changes to the TCP in an emergency.

Perform daily inspections, including weekends and holidays, with some inspections at nighttime, of the installations on the project. Replace all equipment and devices not meeting the approved standards during that inspection. Advise the project personnel of the schedule of these inspections and give them the opportunity to join in the inspection as is deemed necessary. Regardless of the TCP used, maintain the work zone in a safe condition.

**102-2.7 Law Enforcement Services:** Where specified in the TCP, provide uniformed off-duty law enforcement officers, including marked law enforcement vehicles, to assist in controlling and directing traffic in the work zone. Refer to the TCP for those situations where the officers will be utilized.

## **102-3 Traffic Control.**

**102-3.1 Standards:** FHWA's MUTCD Part VI is the minimum standard for Traffic Control for Highway Construction, Maintenance, and Utility Operations. Follow the basic principles and minimum standards contained in this manual for the design, application, installation, maintenance, and removal of all traffic control devices and all warning devices and barriers which are necessary to protect the public and workers from hazards within the project limits. Understand that the standards established in the aforementioned manual constitute the minimum requirements for normal conditions. The Engineer will require additional traffic control devices, warning devices, barriers, or other safety devices where unusual, complex, or particularly hazardous conditions exist.

Reflectorize traffic cones used at night with cone collars meeting the following requirements:

(a) Use collars designed to properly fit the taper of the cone when installed. Place the upper 6 inch [150 mm] collar a uniform 3 1/2 inch [90 mm] distance from the top of the cone and the lower 4 inch [100 mm] collar a uniform 2 inch [50 mm] distance below the bottom of the upper 6 inch [150 mm] collar. Ensure that the collars are capable of being removed for temporary use or attached permanently to the cone in accordance with the manufacturer's recommendations. Provide a white sheeting having a smooth outer surface and that essentially has the property of a retroreflector over its entire surface.

(b) For the retroreflective sheeting for the collars, meet the requirements of ASTM D 4956 Table 4, Type III and Table 9, Type VI; excluding 0.1 degree observation angle and -4 degree, ±30 degree entrance angles.

Provide three certified copies of test reports and certification from the manufacturer that the material furnished meets all requirements of (b) above.

Use reflective collars for cones included on the Qualified Products List.

### **102-3.2 Traffic Control Devices, Warning Devices and Barriers:**

**102-3.2.1 Installation:** Install and maintain adequate traffic control devices, warning devices and barriers to protect the traveling public and workers, and to safeguard the work area. Erect the required traffic control devices, warning devices and barriers to prevent any hazardous conditions and in conjunction with any necessary traffic re-routing. Use only those devices that are included on the Qualified Products List (QPL). Use construction signs meeting the requirements of 700-2.5 and 700-5.5. Specific requirements for Maintenance of Traffic devices, additional to the requirements of this Section, are contained in the 600 series of the Design Standards. Immediately remove, turn or cover any devices or barriers which do not apply to existing conditions.

All QPL approved safety devices must meet the requirements of National Cooperative Highway Research Report 350 (NCHRP 350) and current FHWA directives. Manufacturers seeking evaluation must furnish certified test reports showing that their product meets all test requirements set forth by NCHRP 350.

Notify the Engineer of any scheduled operation which will affect traffic patterns or safety, sufficiently in advance of commencing such operation to permit his review of the plan for the proposed installation of traffic control devices, warning devices or barriers.

Assign an employee the responsibility of maintaining the position and condition of all traffic control devices, warning devices and barriers throughout the duration of the Contract. Keep the Engineer advised at all times of the identification and means of contacting this employee on a 24-hour basis.

**102-3.2.2 Maintenance of Devices and Barriers:** Keep traffic control devices, warning devices, and barriers in the correct position, properly directed, clearly visible and clean, at all times. Immediately repair, replace or clean damaged, defaced or dirty devices or barriers and have the Engineer approve them for use.

**102-3.2.3 Temporary Impact Attenuators:** Furnish, install, maintain and subsequently remove temporary vehicular impact attenuators in accordance with the details and notes shown in the plans, and the Design Standards.

Maintain the attenuators until their authorized removal. Repair all attachment scars to permanent structures and pavements after attenuator removal.

**102-3.2.4 Flagger:** Provide trained flaggers to direct traffic where one-way operation in a single lane is in effect and in other situations as required in 102-3.1. The Worksite Traffic Supervisor or others as approved by the Department will provide training for flaggers using Department-approved training materials.

**102-3.2.5 Existing Pavement Markings:** Where a detour changes the lane use or where normal vehicle paths are altered during construction, remove all existing pavement markings that will conflict with the adjusted vehicle paths. Do not overpaint. Remove existing pavement markings using a method that will not damage the surface texture of the pavement and which will eliminate the previous marking pattern regardless of weather and light conditions.

Remove all pavement markings that will be in conflict with "next phase of operation" vehicle paths as described above, prior to opening to traffic.

**102-3.2.6 No Waiver of Liability:** Conduct operations in such a manner that no undue hazard results due to the requirements of this Article. The procedures and policies described herein in no way acts as a waiver of any terms of the liability of the Contractor or his surety.

### **102-3.3 Work Zone Pavement Markings:**

**102-3.3.1 General:** Provide centerlines, lane lines, edgelines, stop bars, and turn arrows in work zones in accordance with Section 6D of the MUTCD with the following additions:

(a) Install edgelines when a paved shoulder 4 feet [1.2 m] or greater in width exists along the edge of a lane.

(b) Place edgelines on all detours, where vehicle paths are altered from normal operations, and where a lane narrows from its normal width for any reason.

(c) Apply work zone pavement markings, including arrows and messages determined by the Engineer to be required for safe operation of the facility, prior to the end of the day if the highway is open to traffic. The Contractor may use channelizing devices to direct traffic during the day prior to the placement of work zone pavement markings.

(d) The Engineer or the plans will designate work zone pavement markings as removable or non-removable. For removable work zone pavement markings, use materials which can be taken up by hand without the use of additional equipment such as burners, sand blasting, etc. An example of this category of markings is reinforced plastic film (Tape). For non-removable work zone pavement markings, use any markings that are not classified as removable. Use removable or non-removable work zone pavement markings as follows:

Application	Category
<b>Finished Pavement*</b>	
All stripes representing final pavement markings.	Non-Removable
All stripes in an area where the traffic pattern will be altered prior to project acceptance.	Removable
*Place all striping representing final markings in the final location unless excepted in writing by the Engineer.	
<b>Intermediate Pavement Course</b>	
All stripes in areas of pavement which will be covered with a subsequent course of pavement prior to altering of the traffic pattern within such area.	Non-Removable
All stripes in an area where the traffic pattern will be altered prior to placing of the subsequent paving course within such area.	Removable
<b>Existing Pavement</b>	
All stripes in areas of pavement which will be removed or overlaid with new pavement prior to altering of the traffic pattern within such area.	Non-Removable
All stripes in areas of pavement where the traffic pattern will be altered prior to removal or overlaying of such area.	Removable

The Contractor may substitute Removable Pavement Markings for Non-Removable Pavement Markings.

If Removable Pavement Markings are substituted for Non-Removable Pavement Markings, the Department will make payment under Non-Removable Pavement Marking.

**102-3.3.2 Materials:**

**102-3.3.2.1 Paint and Glass Beads:** For white paint, meet the requirements of 971-12.2. For yellow paint, meet the requirements of 971-12.3.

**102-3.3.2.2 Preformed Pavement Marking Film (Tape):** For Preformed Pavement Marking Film (Tape), ensure the manufacturer's certification of conformance to the following requirements:

(1) Composition: Use preformed, retro-reflective pavement marking consisting of foil or plastic materials pigments and glass beads uniformly distributed throughout its cross-sectional area and with a retro-reflective layer of beads bonded on the top surface. Use preformed pavement marking precoated with a pressure sensitive adhesive compatible with asphaltic concrete and portland cement concrete road surfaces.

(2) Thickness: Ensure that the thickness of the preformed film without adhesive is not less than 25 mils [640 µm].

(3) Tensile Strength: Use film having a minimum tensile strength of 40 psi [275 kPa] of cross-section when tested in accordance with ASTM D 638.

(4) Pigmentation: Thoroughly blend color pigments to provide a plastic marking film that maintains uniform color under both daylight and night lighting conditions throughout

the expected life of the film. Use white pavement marking film similar to Federal Standard Color No. 595-17886. Use yellow pavement marking film similar to Federal Standard Color No. 595-13538.

(5) Glass Beads: Use colorless glass beads with a minimum refraction index of 1.50 when tested using the liquid oil immersion method. Use beads of such size and quantity to maintain the retroreflectivity of the preformed pavement marking. Test bead adhesion such that beads are not easily removed when film surface is scratched firmly with a thumbnail.

**102-3.3.2.3 Preformed Removable Pavement Marking Film (Tape):** For Preformed Pavement Marking Film (Tape), meet the following requirements:

(1) Composition: Use removable preformed plastic pavement marking tape consisting of a mixture of polymeric materials, pigments, non-metallic reinforcing medium to facilitate removal, glass beads, and a retro-reflective layer of glass beads firmly bonded to the top surface.

(2) Adhesive: Precoat the removable preformed plastic pavement marking film with a pressure sensitive adhesive capable of being affixed to asphaltic concrete and portland cement concrete pavement surfaces without the use of heat, solvents, and other additional adhesives or activators. Use an adhesive that exhibits excellent shear characteristics and minimal tensile characteristics. Ensure that the adhesive does not require a protective liner when the preformed plastic pavement marking film is in rolled form for shipment. Ensure that the adhesive is capable of temporarily bonding to the roadway pavement at temperatures of 50°F [10°C] and above without pick-up distortion by vehicular traffic.

(3) Pigmentation: Thoroughly blend color pigments to provide a plastic marking film that maintains uniform color under both daylight and night lighting conditions throughout the expected life of the film. Use white pavement marking film similar to Federal Standard Color No. 595-17886. Use yellow pavement marking film similar to Federal Standard Color No. 595-13538.

(4) Thickness: Ensure that the thickness of the removable plastic marking film without adhesive is not less than 30 mils [760 μm].

(5) Glass Beads: Provide colorless glass beads having a minimum refraction index of 1.50 when tested using the liquid oil immersion method. Use beads of the size and quantity necessary to maintain the retro-reflectivity of the preformed plastic film as the film wears through the surface course. Firmly adhere approximately 2% by weight of glass beads to the top of the preformed plastic film. Test bead adhesion such that beads are not easily removed when film surface is scratched firmly with thumbnail.

(6) Removability: Provide preformed plastic pavement marking film capable of being removed from bituminous concrete and portland cement concrete pavement intact or in substantially large strips, either manually or by a mechanical roll-up device, at temperatures above 40°F [4°C], and without the use of heat, solvents, grinding, or blasting. Ensure that the manufacturer shows by documented reports that the retro-reflective preformed plastic pavement marking film has met this requirement after being in place for a minimum of 90 days and under an average daily traffic count per lane of at least 9,000 vehicles per day.

**102-3.3.3 Construction Methods:** Align Non-Removable Pavement Markings (Paint or Preformed Pavement Marking Film) placed on the finished pavement surface so as to ensure coverage by the permanent traffic stripes.

Removable Pavement Markings (Reinforced Plastic Film) placed on the finished pavement surface may vary from the alignment of permanent traffic stripes.

Install all work zone pavement markings in accordance with the manufacturer's recommendations, except apply paint in accordance with Section 710. Ensure that the pavement surface is dry at the time of work zone pavement marking application. Remove all dirt, debris, loose particles, and heavy oil residues from the road surface application areas immediately prior to the installation of pavement markers.

Apply Removable and Non-Removable pavement marking film with a mechanical applicator to provide pavement lines which are neat, accurate, and uniform. Equip the

mechanical applicator with a film cut-off device and with measuring devices which automatically and cumulatively measure the length of each line actually placed within an accuracy tolerance of  $\pm 2\%$ . Roll or tamp pavement marking films (tape) to facilitate adhesion to the road surface. Tape may be placed by hand on short sections 500 feet [150 m] or less provided that it is done in a neat, accurate manner.

When removable pavement markings are no longer required, remove them just ahead of the permanent pavement markings.

## **102-4 Detours.**

**102-4.1 General:** Construct and maintain detour facilities wherever it becomes necessary to divert traffic from any existing roadway or bridge, or wherever construction operations block the flow of traffic.

**102-4.2 Standards of Construction:** Plan, construct, and maintain detours for the safe passage of traffic in all conditions of weather. Provide the detour with all facilities necessary to meet this requirement.

Where the plans call for the Department to furnish detour bridge components, construct the pile bents in accordance with the Structures Design Office Standard Drawings, Index No. 300 and 301, unless otherwise authorized by the Engineer.

Submit a letter with the following: company name, phone number, office address, project contact person, project number, detour bridge type, bridge length, span length, location and usage time frames, to the Engineer at least 30 calendar days prior to the intended pick-up date, to obtain the storage facility location and list of components for the project. Upon receipt of letter, the Engineer will, within ten calendar days provide an approved material list to the Contractor and the appropriate Department storage yard.

Provide a letter with an original company seal, identifying the representative with authority to pick up components, to the Engineer at least ten calendar days prior to the proposed pick-up date. The yard supervisor is not obligated to load the bridge components without this notice. At the time of issuance the Contractor's representative shall sign for each item loaded.

Provide timber dunnage, and transport the bridge components from the designated storage facility to the job site. Unload, erect, and maintain the bridge, then dismantle the bridge and load and return the components to the designated storage facility.

Notify the Engineer in writing at least ten calendar days prior to returning the components. Include in this notice the name of the Contractor's representative authorized to sign for return of the bridge components. The yard supervisor is not obligated to unload the bridge components without this notice.

The Department will provide a crane and an operator at the Department's storage facility to assist in loading and unloading the bridge components. Furnish all other labor and equipment required for loading and unloading the components.

The Department's representative will record all bridge components issued or returned on the Detour Bridge Issue and Credit Ticket. The Tickets must be signed by a Department and Contractor representative, after loading or unloading each truck to document the quantity and type of bridging issued or returned.

Bind together all bridge components to be returned in accordance with the instructions given by the storage facility. The yard supervisor will repack components that are not packed in compliance with these instructions. Upon request, written packing instructions will be made available to the Contractor, prior to dismantling of the bridge for return to the Department's storage facility.

Assume responsibility for any shortage or damage to the bridge components. Monies due the Contractor will be reduced at the rate of \$35.00 per hour plus materials for repacking, repairs or replacement of bridge components.

The skid resistance of open steel grid decking on the detour bridge may decrease gradually after opening the bridge to traffic. The Department will furnish a pneumatic floor scabbler

machine for roughening the roadway surface of the detour bridge decking. Provide an air compressor at the job site with 200 ft<sup>3</sup>/minute [6 m<sup>3</sup>/minute] capacity, 90 psi [620 kPa] air pressure for the power supply of the machine, and an operator. Transport the scabblers machine to and from the Department's Structures Shop. Repair any damage to the scabblers machine caused by operations at no expense to the Department. Perform scabbling when determined necessary by the Engineer. The Department will pay for the cost of scabbling as Unforeseeable Work in accordance with 4-4.

Return the bridge components to the designated storage facility beginning no later than ten calendar days after the date the detour bridge is no longer needed, the date the new bridge is placed in service, or the date Contract Time expires, whichever is earliest. Return the detour bridging at an average of not less than 200 feet [61 m] per week. Upon failure to return the bridge components to the Department within the time specified, compensate the Department for the bridge components not returned at the rate of \$5.00 per 10 feet [\$1.65 per meter], per day, per bridge, for single lane; and \$10.00 per 10 feet [\$3.30 per meter], per day, per bridge, for dual lane until the bridge components are returned to the Department.

**102-4.3 Materials:** Provide all materials for the construction and maintenance of all detours, except that, where the plans call for the Department to provide borrow or other material pits, the Engineer will allow the Contractor to obtain material from these pits for the detour. The Department will make no separate payment for materials used from these pits to construct detours.

**102-4.4 Construction Methods:** Do not apply the requirements of the Standard Specifications pertaining to construction and material details to detour construction. Select and use construction methods and materials that shall provide a stable and safe detour facility. Construct the detour facility to have sufficient durability to remain in good condition, supplemented by maintenance, for the entire period that the detour is required.

**102-4.5 Removal of Detours:** Remove temporary detours when they are no longer needed and before the Contract is completed. Take ownership of all materials from the detour and dispose of them, except for materials which might be on loan from the Department with the stipulation that they be returned.

## **102-5 Calcium Chloride for Dust Control.**

**102-5.1 General:** The Engineer will direct the locations and the time of using calcium chloride for dust control. Regardless of the quantities which may be shown in the proposal, consider this work as being entirely contingent.

### **102-5.2 Materials: Meet the following requirements:**

Calcium Chloride .....	986-1
Water.....	986-2

**102-5.3 Equipment:** Apply the calcium chloride using any spreader capable of such adjustment and control that the quantity of calcium chloride applied in any 25 foot [10 m] length of road does not vary more than 10% from the quantity intended for that length. Do not use rotary-type spreaders, as they are not considered capable of proper control.

Use equipment to apply water that is capable of applying the water uniformly within the limitations of moisture required.

### **102-5.4 Application:**

**102-5.4.1 Weather Limitations:** Even if previously ordered by the Engineer, do not treat surfaces when raining or when the moisture condition exceeds that for proper application of the calcium chloride as determined by the Engineer.

**102-5.4.2 Preparation for Treatment:** Level the subgrade, base materials, or other surface to be treated to a smooth grade and crown or shape the surface to effect adequate drainage. When so directed, moisten the surface prior to application of the material.

**102-5.4.3 Rate of Application:** The Engineer will specify the actual rate at which to uniformly spread the material. Apply the flakes at a rate between 1.0 and 1.25 lbs/yd<sup>2</sup> [0.5 and 0.7 kg/m<sup>2</sup>] of surface, and pellets at a rate between 0.80 and 1.0 lb/yd<sup>2</sup> [0.4 and 0.5 kg/m<sup>2</sup>].

**102-5.4.4 Subsequent Applications:** If subsequent applications are required over a previously treated area which has previously been treated, make such applications at a rate of approximately 0.75 lb/yd<sup>2</sup> [0.4 kg/m<sup>2</sup>] for flakes and 0.6 lb/yd<sup>2</sup> [0.3 kg/m<sup>2</sup>] for pellets.

**102-5.4.5 Protection from Traffic:** Do not allow traffic on the treated surface until two hours after application.

## **102-6 Materials for Driveway Maintenance.**

**102-6.1 General:** Place material in driveways to residences and businesses to provide safe, stable, and reasonable access.

**102-6.2 Materials:** Provide material of the type typically used for base and having stability and drainage properties that will provide a firm surface under wet conditions.

**102-6.3 Construction Methods:** Place, level, manipulate, compact, and maintain the material, to the extent appropriate for the intended use.

As permanent driveway construction is accomplished at a particular location, the Contractor may salvage and reuse previously placed materials that are suitable for reuse on other driveways.

## **102-7 Method of Measurement.**

**102-7.1 Maintenance of Traffic (General Work):** When an item for this work is included in the proposal, the quantity to be paid for will be at the Contract lump sum price for Maintenance of Traffic.

Where the plans require the use of trucks and truck mounted impact attenuators, these items will not be paid for separately but shall be included in the cost of Maintenance of Traffic. Only use those attenuators that have been tested by a facility approved by the Engineer and certified as meeting the requirements as specified in NCHRP 350 and that have been properly maintained.

**102-7.2 Law Enforcement Services:** The quantity to be paid for will be at the Contract unit price per hour for the actual number of officers on the project site. Payment will be made only for those off-duty law enforcement officers specified in the TCP and authorized by the Engineer.

**102-7.3 Special Detours:** When a detour facility is specifically detailed in the plans, or is otherwise described or detailed as a special item, and an item for separate payment is included in the proposal, the work of constructing, maintaining, and subsequently removing such detour facilities will be paid for separately. Traffic control devices, warning devices, barriers, signing, and pavement markings for Special Detours will also be paid for separately.

When the plans show more than one detour, each detour will be paid for separately, at the Contract lump sum price for each.

Where a separate item for a specific detour facility is included in the proposal, payment will be made under Special Detour

**102-7.4 Materials for Driveway Maintenance:** The quantity to be paid for will be the volume, in cubic yards [cubic meters], of all materials authorized by the Engineer, acceptably placed and maintained for driveway maintenance. The quantity will be determined by truck measurement, loose volume after loading and striking off the material to uniform depth. The quantity which is authorized to be reused and which is acceptably salvaged, placed, and maintained in other designated driveways will be measured in truck bodies and included again for payment.

**102-7.5 Calcium Chloride for Dust Control:** The quantity to be paid for will be the weight, in tons [metric tons], of calcium chloride authorized and acceptably spread on the road, within the limits specified by the Engineer. The quantity will be determined from scales, certified freight bills, or other sources, the accuracy of which can be authenticated.

## **102-8 Basis of Payment.**

**102-8.1 Maintenance of Traffic (General Work):** When an item of Maintenance of Traffic is included in the proposal, price and payment will be full compensation for all work and costs specified under this Section except as may be specifically covered for payment under other items.

**102-8.2 Law Enforcement Services:** Price and payment will be considered full compensation for the services of the off-duty law enforcement officer, including a marked law enforcement vehicle and all other direct and indirect costs.

**102-8.3 Special Detours:** Price and payment will be full compensation for providing all detour facilities shown on the plans and all costs incurred in carrying out all requirements of this Section for general maintenance of traffic within the limits of the detour, as shown on the plans.

**102-8.4 Calcium Chloride for Dust Control:** Price and payment will be full compensation for all work and materials specified for this item, including specifically all required shaping and maintenance of the treated area and all water furnished and applied to the area.

**102-8.5 Payment Items:** Payment will be made under:

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|-------------------|--|
| Item No. 102- 1-  | Maintenance of Traffic - lump sum.                               |
| Item No. 2102- 1- | Maintenance of Traffic - lump sum.                               |
| Item No. 102-10-  | Off-Duty Law Enforcement Officer - per hour.                     |
| Item No. 2102-10- | Off-Duty Law Enforcement Officer - per hour.                     |
| Item No. 102- 2-  | Special Detour - lump sum.                                       |
| Item No. 2102- 2- | Special Detour - lump sum.                                       |
| Item No. 102- 3-  | Commercial Materials for Driveway Maintenance - per cubic yard.  |
| Item No. 2102- 3- | Commercial Materials for Driveway Maintenance - per cubic meter. |
| Item No. 102- 4-  | Calcium Chloride for Dust Control - per ton.                     |
| Item No. 2102- 4- | Calcium Chloride for Dust Control - per metric ton.              |