

**SECTION 10-1**

**GENERAL**

**10-1.01**

**WATER POLLUTION CONTROL**

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications and these special provisions.

This project lies within the boundaries of the Central Valley (Sacramento) Regional Water Quality Control Board (RWQCB).

This project is subject to the current Statewide General Permit issued by the SWRCB entitled "Order No. 99-08-DWQ, National Pollutant Discharge Elimination System (NPDES) General Permit No. CAS000002, Waste Discharge Requirements (WDRs) for Discharges of Storm Water Associated with Construction Activity," which regulates discharges of storm water and non-storm water from construction activities disturbing 0.4-hectare {one acre} or more of soil in a common plan of development. Copies of the Statewide General Permit and modifications thereto are available for review from the SWRCB, Storm Water Permit Unit, 1001 "I" Street, P.O. Box 1977, Sacramento, California 95812-1977, Telephone: (916) 341-5254 and may also be obtained from the SWRCB Internet website at: <http://www.swrcb.ca.gov/stormwtr/construction.html>.

The Permit requires the preparation of a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP shall be prepared in conformance with the requirements of the Permits and the document entitled "Storm Water Management Plan for Western El Dorado County" Updated May 2004 (SWMP) (available from the El Dorado County Department of Transportation, or from the County website at: <http://www.co.el-dorado.ca.us/emd/solidwaste/storm.html#SWMP>).

The Contractor shall know and fully comply with applicable provisions of the Permits and all modifications thereto, the SWMP, and Federal, State, and local regulations and requirements that govern the Contractor's operations and storm water and non-storm water discharges from the project site construction. Attention is directed to Sections 7-1.01, "Laws to be Observed," and 7-1.12, "Indemnification and Insurance," of the Standard Specifications.

The Contractor shall be responsible for penalties assessed or levied on the Contractor or the Department as a result of the Contractor's failure to comply with the provisions in this section "Water Pollution Control" including, but not limited to, compliance with the applicable provisions of the Permits, the SWMP, and Federal, State and local regulations and requirements as set forth therein.

Penalties as used in this section, "Water Pollution Control," shall include fines, penalties and damages, whether proposed, assessed, or levied against the Department or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Control Act, by governmental agencies or as a result of citizen suits. Penalties shall also include payments made or costs incurred in settlement for alleged violations of the Permits, the SWMP, or applicable laws, regulations, or requirements. Costs incurred could include sums spent instead of penalties, in mitigation or to remediate or correct violations.

**RETENTION OF FUNDS**

Notwithstanding any other remedies authorized by law, the Department may retain money due the Contractor under the Contract, in an amount determined by the Department, up to and including the entire amount of Penalties proposed, assessed, or levied as a result of the Contractor's violation of the Permits, the SWMP, or Federal or State law, regulations or requirements. Funds may be retained by the Department until final disposition has been made as to the Penalties. The Contractor shall remain liable for the full amount of Penalties until such time as they are finally resolved with the entity seeking the Penalties.

Retention of funds for failure to conform to the provisions in this section, "Water Pollution Control," shall be in addition to the other retention amounts required by the Contract. The amounts retained for the Contractor's failure to conform to provisions in this section will be released for payment on the next monthly estimate for partial payment following the date when an approved SWPPP has been implemented and maintained, and when water pollution has been adequately controlled, as determined by the Engineer.

When a regulatory agency identifies a failure to comply with the Permits and modifications thereto, the SWMP, or other Federal, State or local requirements, the Department may retain money due the Contractor, subject to the following:

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- A. The Department will give the Contractor thirty (30) days notice of the Department's intention to retain funds from partial payments which may become due to the Contractor prior to acceptance of the contract. Retention of funds from payments made after acceptance of the contract may be made without prior notice to the Contractor.
- B. No retention of additional amounts out of partial payments will be made if the amount to be retained does not exceed the amount being withheld from partial payments pursuant to Section 9-1.06, "Partial Payments," of the Standard Specifications.
- C. If the Department has retained funds, and it is subsequently determined that the County is not subject to the entire amount of the Costs and Liabilities assessed or proposed in connection with the matter for which the retention was made, the Department shall be liable for interest on the amount retained for the period of the retention. The interest rate payable shall be six percent (6%) per annum.

During the first estimate period that the Contractor fails to conform to the provisions in this section, "Water Pollution Control," the Department may retain an amount equal to 25 percent of the estimated value of the contract work performed.

The Contractor shall notify the Engineer immediately upon request from the regulatory agencies to enter, inspect, sample, monitor, or otherwise access the project site or the Contractor's records pertaining to water pollution control work. The Contractor and the Department shall provide copies of correspondence, notices of violation, enforcement actions or proposed fines by regulatory agencies to the requesting regulatory agency.

#### **STORM WATER POLLUTION PREVENTION PLAN PREPARATION, APPROVAL AND AMENDMENTS**

As part of the water pollution control work, a Storm Water Pollution Prevention Plan (SWPPP) is required for this contract. The SWPPP shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, the requirements in the SWMP, the requirements of the Permits, and these special provisions. Upon the Engineer's approval of the SWPPP, the SWPPP shall be considered to fulfill the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications for development and submittal of a Water Pollution Control Program.

No work having potential to cause water pollution, shall be performed until the SWPPP has been approved by the Engineer. Approval shall not constitute a finding that the SWPPP complies with applicable requirements of the Permits, the SWMP and applicable Federal, State and local laws, regulations, and requirements.

The SWPPP shall incorporate the water pollution control practices identified in Section 4.4.5, "Minimum Construction Site Practices" of the County's Storm Water Management Plan.

The Contractor shall develop a Water Pollution Control Schedule that describes the timing of grading or other work activities that could affect water pollution. The Water Pollution Control Schedule shall be updated by the Contractor to reflect changes in the Contractor's operations that would affect the necessary implementation of water pollution control practices.

Within twenty (20) working days after the approval of the Contract, the Contractor shall submit three (3) copies of the draft SWPPP to the Engineer. The Engineer will have ten (10) working days to review the SWPPP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the SWPPP within ten (10) working days of receipt of the Engineer's comments. The Engineer will have five (5) working days to review the revisions. Upon the Engineer's approval of the SWPPP, four (4) approved copies of the SWPPP, incorporating the required changes, shall be submitted to the Engineer. In order to allow construction activities to proceed, the Engineer may conditionally approve the SWPPP while minor revisions are being completed.

In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Contractor shall prepare an amendment to the SWPPP when there is a change in construction activities or operations which may affect the discharge of pollutants to surface waters, ground waters, municipal storm drain systems,

or when the Contractor's activities or operations violate a condition of the Permits, or when directed by the Engineer. Amendments shall identify additional water pollution control practices or revised operations, including those areas or operations not identified in the initially approved SWPPP. Amendments to the SWPPP shall be prepared and submitted for review and approval within a time approved by the Engineer, but in no case longer than the time specified for the initial submittal and review of the SWPPP. At a minimum, the SWPPP shall be amended annually and submitted to the Engineer twenty five (25) days prior to the rainy season.

**The Contractor shall keep one (1) copy of the approved SWPPP and approved amendments at the Project site.** The SWPPP shall be made available upon request by a representative of the Regional Water Quality Control Board, State Water Resources Control Board, United States Environmental Protection Agency, or the local storm water management agency. Requests by the public shall be directed to the Engineer.

### **SWPPP IMPLEMENTATION**

Unless otherwise specified, upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the Project for installing, constructing, inspecting, maintaining, removing, and disposing of the water pollution control practices specified in the SWPPP and in the amendments. Unless otherwise directed by the Engineer, the Contractor's responsibility for SWPPP implementation shall continue throughout temporary suspensions of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications. Requirements for installation, construction, inspection, maintenance, removal, and disposal of water pollution control practices shall conform to the requirements in the SWMP and these special provisions.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved SWPPP or amendments, the deficiency shall be corrected immediately unless requested by the Contractor and approved by the Engineer in writing, but shall be corrected prior to the onset of precipitation. If the Contractor fails to correct the identified deficiency by the date agreed or prior to the onset of precipitation, the project shall be in nonconformance with this section, "Water Pollution Control." Attention is directed to Section 5-1.01, "Authority of Engineer," of the Standard Specifications, and to "Retention of Funds" of this section for possible nonconformance penalties.

If the Contractor fails to conform to the provisions of this section, "Water Pollution Control," the Engineer may order the suspension of construction operations until the project complies with the requirements of this section.

Implementation of water pollution control practices may vary by season. The SWMP and these special provisions shall be followed for control practice selection of year-round, rainy season and non-rainy season water pollution control practices.

### **Minimum Construction Site Storm Water Management Practices**

The storm water management practices described below are the minimum, required water quality protection measures applicable to all construction sites below 3000 feet in elevation within Western El Dorado County. This listing does not include the various inspection, record keeping, training and reporting requirements. Additionally, there will be instances where project and site conditions require supplementing or deviating from these minimum protection requirements. The Contractor is expected to deploy measures sufficient to achieve compliance with the with the State Water Resources Control Board's (SWRCB) NPDES General Permit for Storm Water Discharges Associated with Construction Activity.

### **Preservation of Existing Vegetation and Protect Environmentally Sensitive Areas**

Prior to the commencement of soil-disturbing activities, areas of existing vegetation that are to remain and environmentally sensitive areas (i.e. wetlands, protected habitats, etc) shall be fenced for protection.

### **Storm Water Run-On and Concentrated Flows**

Existing watercourses shall be protected; and if diverted, handled in a non-eroding fashion. To the extent feasible, all concentrated water flows shall be channeled away from disturbed soil areas / stockpiles. Concentrated water flows shall be conveyed in a non-eroding fashion.

### **Stockpile Management**

Stockpiles shall be managed as follows:

- Soil stockpiles

**Rainy season:**

- Covered, or protected with soil stabilization measures and perimeter sediment barriers

**Non-rainy season:**

- Covered or protected with perimeter sediment barriers
- Concrete/asphalt rubble, rock and aggregate base/sub-base
- Covered or protected with perimeter sediment barriers
- “Cold mix” asphalt
- Covered

**Sediment Tracking Control**

Appropriate measures shall be deployed to minimize any tracking of sediment off-site by vehicles and/or equipment. These measures include stabilized construction entrances/exits and roadways, and tire washing. Where tracking occurs, streets shall be swept using a pickup sweeper with water supply.

**Non-Storm Water Management**

Non-storm water discharges shall be minimized to the extent feasible. Sediment-laden non-storm water is required to be filtered (or equivalent treatment) prior to discharging. Measures required to manage non-storm water discharges include: water conservation practices, dust control, material storage practices, vehicle/equipment operation and maintenance requirements, waste management practices, and spill prevention/control measures.

**Disturbed Soil Area Management**

Disturbed soil areas (DSA) shall be protected with an “effective combination” of measures including soil stabilization, sediment barriers and basins / traps. There may be situations where “Sediment Basins” or “Treatment” are able to substitute as alternative control measures to the normally required “effective combination” of soil stabilization, sediment barriers and basins / traps. However, when substituting these measures, the Contractor must be prepared to demonstrate that the sediment load within storm water discharges from the construction site does not exceed natural or pre-construction levels.

Soil stabilization measures include:

- Hydraulic mulch (ref. CASQA BMP # EC-3)
- Hydroseeding (ref. CASQA BMP # EC-4)
- Suitably stabilized, non-polluting straw / wood / organic mulch (ref. CASQA BMP #'s EC-6 & EC-8)
- Geotextiles, mats, plastic covers and erosion control blankets (ref. CASQA BMP # EC-7)
- Stabilized construction roadways (ref. CASQA BMP # TC-2)

Sediment barriers include:

- Silt fences (ref. CASQA BMP # SE-1)
- Sand/gravel bag barriers (ref. CASQA BMP #'s SE-6 & SE-8)
- Straw bale barriers (ref. CASQA BMP # SE-9)
- Fiber rolls (ref. CASQA BMP # SE-5)

Basin / traps include:

- Desilting basins (ref. Caltrans BMPs)
- Sediment traps (ref. Caltrans BMPs)

On DSAs with slope lengths greater than 10 feet, the following measures shall be deployed:

**Rainy season (Oct. 15th to May 1st):**

- Non-active areas (no soil disturbing activities for twenty one (21) or more days)
  - On slopes equal to or flatter than 1:20 (V/H), soil stabilization
  - On slopes steeper than 1:20 (V/H), soil stabilization and sediment barriers
- Active areas
  - On slopes steeper than 1:20 (V/H), sediment barriers
  - On slopes steeper than 1:2 (V/H) with slope lengths greater than 50 feet: soil stabilization; sediment barriers; and where feasible, basins / traps

**Non-rainy season:**

- Non-active areas (no soil disturbing activities for twenty one (21) or more days)

- On slopes steeper than 1:2 (V/H), sediment barriers

General:

- Protection shall be deployed on non-active DSAs within fourteen (14) days from the cessation of soil-disturbing activities or one day prior to the predicted (40% or more chance) onset of significant precipitation, whichever occurs first. Protection shall be deployed on active DSAs prior to the predicted (40% or more chance) onset of significant precipitation.
- Properly drained terraces, at least 8 feet wide, shall be provided at intervals not more than every 25 feet in height on all permanent slopes and non-active DSAs exceeding 30 feet in height.
- "Sediment Basin:" A basin with a capacity equivalent to at least 3600 cubic feet of storage (as measured from the bottom of the basin to the principal outlet) per acre draining into the basin. The length of the basin shall be more than twice the basin's width (length is determined by measuring the distance between the inlet and the outlet). The depth of the basin must not be less than three feet nor greater than five feet.
- "Treatment": A combination of basin and treatment engineered to capture and treat (to remove 0.01 mm sized particles and larger) the 10-year, 6-hour rain event using  $Q=CxIxA$  where  $C=0.5$  and  $I$  ranges from 0.286 (El Dorado Hills) to 0.500 (Sly Park).

**General reference:** El Dorado County "Storm Water Management Plan", July 2003. Available online at: <http://www.co.el-dorado.ca.us/emd/solidwaste/storm.html>

**Detailed references:**

1. California Stormwater Quality Association (CASQA) "Construction Handbook", January 2003. Available online at: <http://www.cabmphandbooks.com/>
2. Caltrans "Statewide Storm Water Quality Practice Guidelines", April 2003. Available online at: <http://www.dot.ca.gov/hq/env/stormwater/special/newsetup/index.htm>

**MAINTENANCE**

To ensure the proper implementation and functioning of water pollution control practices, the Contractor shall regularly inspect and maintain the construction site for the water pollution control practices identified in the SWPPP.

**REPORTING REQUIREMENTS**

**Report of Discharges, Notices or Orders**

If the Contractor identifies discharges into surface waters or drainage systems in a manner causing, or potentially causing, a condition of pollution, or if the project receives a written notice or order from a regulatory agency, the Contractor shall immediately inform the Engineer. The Contractor shall submit a written report to the Engineer within seven (7) days of the discharge event, notice or order. The report shall include the following information:

- A. The date, time, location, nature of the operation, and type of discharge, including the cause or nature of the notice or order.
- B. The water pollution control practices deployed before the discharge event, or prior to receiving the notice or order.
- C. The date of deployment and type of water pollution control practices deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent reoccurrence.
- D. An implementation and maintenance schedule for affected water pollution control practices.

**Report of First-Time Non-Storm Water Discharge**

The Contractor shall notify the Engineer at least three (3) days in advance of first-time non-storm water discharge events, excluding exempted discharges. The Contractor shall notify the Engineer of the operations causing non-storm

water discharges and shall obtain field approval for first-time non-storm water discharges. Non-storm water discharges shall be monitored at first-time occurrences and routinely thereafter.

#### **Annual Certifications**

By June 15 of each year, the Contractor shall complete and submit an Annual Certification of Compliance to the Engineer.

#### **PAYMENT**

The contract lump sum price paid for preparing the storm water pollution prevention plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising, and amending the SWPPP, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

The cost of implementing and maintaining temporary water pollution control practices shall be divided equally by the County and the Contractor.

The division of cost will be made by determining the cost of maintaining water pollution control practices in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications and paying to the Contractor one-half of that cost. Cleanup, repair, removal, disposal, improper installation, and replacement of water pollution control practices damaged by the Contractor's negligence, shall not be considered as included in the cost for implementing and maintaining temporary water pollution control measures.

#### **10-1.02 DUST CONTROL**

Dust control shall conform to the provisions in Section 10, "Dust Control," of the Standard Specifications, Rule 223, 223-1, and 223-2 of the Rules and Regulations of the El Dorado County Air Quality Management Districts (AQMD), and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor of the responsibilities as set forth in Section 7, "Legal Relations and Responsibility" of the Standard Specifications.

Rule 223, 223-1 and 223-2 can be obtained from the El Dorado County AQMD, 2850 Fairlane Court, Placerville, CA, 95667, (530) 621-6662, and is available at [http://www.co.el-dorado.ca.us/emd/apcd/construction\\_dust\\_rules.html](http://www.co.el-dorado.ca.us/emd/apcd/construction_dust_rules.html).

The materials within the project limits are **not known or suspected** to contain naturally occurring asbestos and the project is **not located** within designated Naturally Occurring Asbestos Review Areas on the current El Dorado County Naturally Occurring Asbestos Review Area Map.

#### **DUST CONTROL PLAN PREPARATION, APPROVAL AND AMENDMENTS**

The Contractor shall submit a site specific Fugitive Dust Control Plan (FDCP) for all proposed work, meeting the requirements of Rule 223-1 and approved by the El Dorado County Air Pollution Control Officer, to the Engineer prior to start of any work. Within fifteen (15) working days after the award of the contract by the Board of Supervisors, the Contractor shall submit three (3) copies of the draft FDCP to the Engineer for review prior to submittal to the AQMD. The Engineer will have five (5) working days to review the FDCP. The Contractor shall revise the FDCP per the Engineer's comments and submit the FDCP to the AQMD for approval by the El Dorado County Air Pollution Control Officer. The Contractor shall provide the Engineer with 4 copies of the AQMD approved FDCP prior to starting any work that may generate dust.

The Contractor shall prepare an amendment to the FDCP when there is a change in construction activities or operations not included in the FDCP, when the Contractor's activities or operations violate a condition of the AQMD, or when directed by the Engineer. Amendments shall identify additional dust control practices or revised operations, including those areas or operations not identified in the initially approved FDCP. Amendments to the FDCP shall be prepared and submitted for review and approval within a time approved by the Engineer. At a minimum, the FDCP shall be amended annually.

The Contractor shall keep one (1) copy of the approved FDCP and approved amendments at the project site. The FDCP shall be made available upon request by a representative of the AQMD, California Air Resource Board, United States Environmental Protection Agency, or Caltrans. Requests by the public shall be directed to the Engineer.

The Contractor shall provide all notices to the AQMD and create and maintain all records as required by Rule 223, 223-1 and 223-2. Copies of all required records shall be submitted to the Engineer within thirty (30) calendar days of completion of all work subject to Rule 223, 223-1 and 223-2.

The Contractor shall also submit a dust control schedule that describes the timing of grading or other work activities that could promote dust to the Engineer prior to start of any work. The dust control schedule shall be updated by the Contractor to reflect changes in the Contractor's operations that would affect the necessary implementation of dust control practices.

#### **DUST CONTROL**

The Contractor shall implement the measures contained in the Fugitive Dust Control Plan, and as directed by the Engineer, to control dust in accordance with Rule 223 and 223-1, the Standard Specifications and these special provisions, and as directed by the Engineer.

#### **PAYMENT**

The Contractor is advised that significant dust control measures will be required during construction operations. In order to mitigate dust, past projects have required extensive pre-wetting to depths of cuts, the use of a dedicated water truck for each piece of earthmoving equipment (e.g., scrapers, dozers, excavators, loaders, haul trucks, backhoes, compactors, graders, etc.), and the use of rock track out pads and wheel wash stations at all points of egress from unpaved construction areas. These examples are not necessarily the exact mitigation measures needed on this project; rather, they have been listed to provide an idea of the extensive nature of dust control activities that may be necessary. The dust control measures that will be required to mitigate dust will impact the Contractor's productivity during construction activities. All impacts to productivity must be included in the Contractor's bid price for the associated items of work. No additional compensation for impacts to productivity due to dust control will be provided.

The contract lump sum price paid for prepare fugitive dust control plan shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals for doing all the work involved in developing, preparing, obtaining approval, revising, and amending the FDCP, for maintaining and submitting all dust control records, and for preparing and updating the dust control schedule, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

In the event naturally occurring asbestos is found within the project limits, the Contractor shall prepare an Asbestos Dust Mitigation Plan in accordance with the requirements of Rule 223-2 and implement dust control in accordance with the requirements of Rule 223-2. Preparing an Asbestos Dust Mitigation Plan will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications.

The cost of performing dust control shall be paid for by the County. The cost will be made by determining the cost of dust control operations and practices in conformance with the provisions in Section 9-1.03, "Force Account Payment," of the Standard Specifications.

#### **10-1.03 PROGRESS SCHEDULE**

Progress schedules are required for this contract and shall be submitted in conformance with the provisions in Section 8-1.04, "Progress Schedule," of the Standard Specifications and these special provisions, unless otherwise authorized in writing by the Engineer.

The second paragraph of Section 8-1.04, "Progress Schedule," of the Standard Specifications shall not apply.

#### **10-1.04 MOBILIZATION**

Mobilization shall conform to the provisions in Section 11, "Mobilization," of the Standard Specifications.

#### **10-1.05 CONSTRUCTION AREA SIGNS**

Construction area signs shall be furnished, installed, maintained, and removed when no longer required in conformance with the provisions in Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and these special provisions.

Full compensation for furnishing, placing, maintaining, and removing the construction area signs shall be considered as included in the prices paid for the various contract items of work and no separate payment will be made therefore.

#### **10-1.06 EXISTING HIGHWAY FACILITIES**

The work performed in connection with various existing highway facilities shall conform to the provisions in Section 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions.

##### **REHAB RETAINING WALL**

Retaining Wall, where shown on the plans to be rehabbed, shall be rehabbed as per the details shown on the plans and these special provisions.

The pay quantities of wall to be rehabbed will be measured per unit.

Portions of the wall removed shall be disposed of outside the trail right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

##### **REMOVE DRAINAGE FACILITY**

Existing inlets, and culverts, where any portion of these structures is within 3 feet of the grading plane in excavation areas, or within one foot of original ground in embankment areas, or where shown on the plans to be removed, shall be completely removed and disposed of.

##### **COLD PLANE ASPHALT CONCRETE PAVEMENT**

Existing asphalt concrete pavement shall be cold planed at the locations and to the dimensions shown on the plans.

Planing asphalt concrete pavement shall be performed by the cold planing method. Planing of the asphalt concrete pavement shall not be done by the heater planing method.

Cold planing machines shall be equipped with a cutter head not less than 30 inches in width and shall be operated so that no fumes or smoke will be produced. The cold planing machine shall plane the pavement without requiring the use of a heating device to soften the pavement during or prior to the planing operation.

The depth, width, and shape of the cut shall be as shown on the typical cross sections or as designated by the Engineer. The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the planed area shall be neat and uniform. Planing asphalt concrete pavement operations shall be performed without damage to the surfacing to remain in place.

Planed widths of pavement shall be continuous except for intersections at cross streets where the planing shall be carried around the corners and through the conform lines. Following planing operations, a drop-off of more than 0.15-foot will not be allowed between adjacent lanes open to public traffic.

Where transverse joints are planed in the pavement at conform lines no drop-off shall remain between the existing pavement and the planed area when the pavement is opened to public traffic. If asphalt concrete has not been placed to the level of existing pavement before the pavement is to be opened to public traffic a temporary asphalt concrete taper shall be constructed. Asphalt concrete for temporary tapers shall be placed to the level of the existing pavement and tapered on a slope of 1:30 (Vertical: Horizontal) or flatter to the level of the planed area.

Asphalt concrete for temporary tapers shall be commercial quality and may be spread and compacted by any method that will produce a smooth riding surface. Temporary asphalt concrete tapers shall be completely removed, including the removal of loose material from the underlying surface, before placing the permanent surfacing. The removed material shall be disposed of outside the highway right of way in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

The material planed from the roadway surface shall be deposited back onto the trail within the limits of the cold planing and compacted to 90%. Cold plane asphalt concrete pavement will be measured by the square yard. The quantity to be paid for will be the actual area of surface cold planed irrespective of the number of passes required to obtain the depth shown on the plans.



The contract price paid per square yard for cold plane asphalt concrete pavement shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in cold planing asphalt concrete surfacing and depositing and compacting of planed material, as specified in the Standard Specifications and these special provisions and as directed by the Engineer.

#### **10-1.07 CLEARING AND GRUBBING**

Clearing and grubbing shall conform to the provisions in Section 16, "Clearing and Grubbing," of the Standard Specifications and these special provisions.

Vegetation shall be cleared and grubbed only within the excavation and embankment slope lines

At locations where there is no grading adjacent to a bridge or other structure, clearing and grubbing of vegetation shall be limited to 5 feet outside the physical limits of the bridge or structure.

Existing vegetation outside the areas to be cleared and grubbed shall be protected from injury or damage resulting from the Contractor's operations.

Activities controlled by the Contractor, except cleanup or other required work, shall be confined within the graded areas of the roadway.

Nothing herein shall be construed as relieving the Contractor of the Contractor's responsibility for final cleanup of the highway as provided in Section 4-1.02, "Final Cleaning Up," of the Standard Specifications.

#### **10-1.08 EARTHWORK**

Earthwork shall conform to the provisions in Section 19, "Earthwork," of the Standard Specifications and these special provisions.

Surplus excavated material shall become the property of the Contractor and shall be disposed of in conformance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Where a portion of the existing surfacing is to be removed, the outline of the area to be removed shall be cut on a neat line with a power-driven saw to a minimum depth of 2 inches before removing the surfacing. Full compensation for cutting the existing surfacing shall be considered as included in the contract price paid per cubic yard for roadway excavation and no additional compensation will be allowed therefore.

#### **10-1.09 EROSION CONTROL (TYPE D)**

Erosion control (Type D) shall conform to the provisions in Section 20-3, "Erosion Control," of the Standard Specifications and these special provisions and shall consist of applying erosion control materials to embankment and excavation slopes and other areas disturbed by construction activities.

If the slope on which the erosion control is to be placed is finished during the rainy season as specified in "Water Pollution Control" of these special provisions, the erosion control shall be applied immediately to the slope.

Prior to installing erosion control materials, soil surface preparation shall conform to the provisions in Section 19-2.05, "Slopes," of the Standard Specifications, except that rills and gullies exceeding 50 mm {2 inches} in depth or width shall be leveled. Vegetative growth, temporary erosion control materials, and other debris shall be removed from areas to receive erosion control.

#### **MATERIALS**

Materials shall conform to the provisions in Section 20-2, "Materials," of the Standard Specifications and these special provisions.

**Seed**

Seed shall conform to the provisions in Section 20-2.10, "Seed," of the Standard Specifications. Individual seed species shall be measured and mixed in the presence of the Engineer.

Seed shall be delivered to the project site in unopened separate containers with the seed tag attached. Containers without a seed tag attached will not be accepted.

A sample of approximately 30 g {one ounce} of seed will be taken from each seed container by the Engineer.

**Legume Seed**

Legume seed shall be pellet-inoculated or industrial-inoculated and shall conform to the following:

- A. Inoculated seed shall be inoculated in conformance with the provisions in Section 20-2.10, "Seed," of the Standard Specifications.
- B. Inoculated seed shall have a calcium carbonate coating.
- C. Industrial-inoculated seed shall be inoculated with Rhizobia and coated using an industrial process by a manufacturer whose principal business is seed coating and seed inoculation.
- D. Industrial-inoculated seed shall be sown within 180 calendar days after inoculation.
- E. Legume seed shall consist of the following:

**LEGUME SEED**

Botanical Name (Common Name)	Percent Germination (Minimum)	Kilograms Pure Live Seed Per Hectare {Pounds Pure Live Seed Per Acre} (Slope Measurement)
<i>lupinus bicolor*</i>	60	2
<i>Trifolium hirtum hykon*</i>	60	8

**Non-Legume Seed**

Non-legume seed shall consist of the following:

**NON-LEGUME SEED**

Botanical Name (Common Name)	Percent Germination (Minimum)	Kilograms Pure Live Seed Per Hectare {Pounds Pure Live Seed Per Acre} (Slope Measurement)
<i>Nasella pulchra*</i>	60	3
<i>Poa scrabrilla*</i>	60	3
<i>Festuca idahoensis*</i>	80	5
<i>Melica californica*</i>	40	1
<i>Orthocarpus purpurancens*</i>	40	0.5
<i>Sitanion jubatum*</i>	60	1

**Commercial Fertilizer**

Commercial fertilizer shall not be used on this contract.

**Straw**

Straw shall conform to the provisions in Section 20-2.06, "Straw," of the Standard Specifications and these special provisions.

Wheat and barley straw shall be derived from irrigated crops.

Prior to delivery of wheat or barley straw to the project site, the Contractor shall provide the name, address and telephone number of the grower.

### Compost

Compost shall be derived from green material consisting of chipped, shredded or ground vegetation or clean processed recycled wood products or a Class A, exceptional quality biosolids composts, as required by the United States Environmental Protection Agency (EPA), 40 CFR, Part 503c regulations or a combination of green material and biosolids compost. The compost shall be processed or completed to reduce weed seeds, pathogens and deleterious material, and shall not contain paint, petroleum products, herbicides, fungicides or other chemical residues that would be harmful to plant or animal life. Other deleterious material, plastic, glass, metal or rocks shall not exceed 0.1 percent by weight or volume. A minimum internal temperature of 57°C {135° F} shall be maintained for at least 15 continuous days during the composting process. The compost shall be thoroughly turned a minimum of 5 times during the composting process and shall go through a minimum 90-day curing period after the 15-day thermophilic compost process has been completed. Compost shall be screened through a maximum 9.5-mm {3/8-inch} screen. The moisture content of the compost shall not exceed 35 percent. Compost products with a higher moisture content may be used provided the weight of the compost is increased to equal the compost with a moisture content of 35 percent. Moist samples of compost on an as received basis shall be dried in an oven at a temperature between 105°C and 115°C {221° F and 239° F} until a constant dry weight of the sample is achieved. The percentage of moisture will be determined by dividing the dry weight of the sample by the moist weight of the sample and then multiplying by 100. Compost will be tested for maturity and stability with a Solvita test kit. The compost shall measure a minimum of 6 on the maturity and stability scale.

### Stabilizing Emulsion

Stabilizing emulsion shall conform to the provisions in Section 20-2.11, "Stabilizing Emulsion," of the Standard Specifications and these special provisions.

Stabilizing emulsion shall be in a dry powder form, may be reemulsifiable, and shall be a processed organic adhesive used as a soil tackifier.

### APPLICATION

Erosion control materials shall be applied in separate applications in the following sequence:

- A. The following mixture in the proportions indicated shall be applied with hydro-seeding equipment within 60 minutes after the seed has been added to the mixture:

Material	Kilograms Per Hectare {Pounds Per Acre} (Slope Measurement)
Legume Seed	10
Non-Legume Seed	15
Fiber	200
Compost	800

- B. The Contractor may dry apply compost at the total of the rates specified in the preceding table and the following table instead of including it as part of the hydro-seeding operations. In areas where the compost is dry applied, all compost for that area shall be applied before the next operation.
- C. Straw shall be applied at the rate of 4.5 tonnes per hectare {2.0 tons per acre} based on slope measurements. Incorporation of straw will not be required. Straw shall be distributed evenly without clumping or piling.
- D. The following mixture in the proportions indicated shall be applied with hydro-seeding equipment:

Wheat and barley straw shall be derived from irrigated crops.

Prior to delivery of wheat or barley straw to the project site, the Contractor shall provide the name, address and telephone number of the grower.

### Compost

Compost shall be derived from green material consisting of chipped, shredded or ground vegetation or clean processed recycled wood products or a Class A, exceptional quality biosolids composts, as required by the United States Environmental Protection Agency (EPA), 40 CFR, Part 503c regulations or a combination of green material and biosolids compost. The compost shall be processed or completed to reduce weed seeds, pathogens and deleterious material, and shall not contain paint, petroleum products, herbicides, fungicides or other chemical residues that would be harmful to plant or animal life. Other deleterious material, plastic, glass, metal or rocks shall not exceed 0.1 percent by weight or volume. A minimum internal temperature of 57°C {135° F} shall be maintained for at least 15 continuous days during the composting process. The compost shall be thoroughly turned a minimum of 5 times during the composting process and shall go through a minimum 90-day curing period after the 15-day thermophilic compost process has been completed. Compost shall be screened through a maximum 9.5-mm {3/8-inch} screen. The moisture content of the compost shall not exceed 35 percent. Compost products with a higher moisture content may be used provided the weight of the compost is increased to equal the compost with a moisture content of 35 percent. Moist samples of compost on an as received basis shall be dried in an oven at a temperature between 105°C and 115°C {221° F and 239° F} until a constant dry weight of the sample is achieved. The percentage of moisture will be determined by dividing the dry weight of the sample by the moist weight of the sample and then multiplying by 100. Compost will be tested for maturity and stability with a Solvita test kit. The compost shall measure a minimum of 6 on the maturity and stability scale.

### Stabilizing Emulsion

Stabilizing emulsion shall conform to the provisions in Section 20-2.11, "Stabilizing Emulsion," of the Standard Specifications and these special provisions.

Stabilizing emulsion shall be in a dry powder form, may be reemulsifiable, and shall be a processed organic adhesive used as a soil tackifier.

### APPLICATION

Erosion control materials shall be applied in separate applications in the following sequence:

- A. The following mixture in the proportions indicated shall be applied with hydro-seeding equipment within 60 minutes after the seed has been added to the mixture:

Material	Kilograms Per Hectare {Pounds Per Acre} (Slope Measurement)
Legume Seed	10
Non-Legume Seed	15
Fiber	200
Compost	800

- B. The Contractor may dry apply compost at the total of the rates specified in the preceding table and the following table instead of including it as part of the hydro-seeding operations. In areas where the compost is dry applied, all compost for that area shall be applied before the next operation.
- C. Straw shall be applied at the rate of 4.5 tonnes per hectare {2.0 tons per acre} based on slope measurements. Incorporation of straw will not be required. Straw shall be distributed evenly without clumping or piling.
- D. The following mixture in the proportions indicated shall be applied with hydro-seeding equipment:

Material	Kilograms Per Hectare { Pounds Per Acre} (Slope Measurement)
Fiber	200
Compost	800
Stabilizing Emulsion (Solids)	150

The ratio of total water to total stabilizing emulsion in the mixture shall be as recommended by the manufacturer.

Once straw work is started in an area, stabilizing emulsion applications shall be completed in that area on the same working day.

The proportions of erosion control materials may be changed by the Engineer to meet field conditions.

#### MEASUREMENT AND PAYMENT

Compost (erosion control) will be measured by the kilogram {pound} or tonne {ton}, whichever unit is designated in the Engineer's Estimate. The weight will be as determined by the Engineer from marked mass and sack count or from scale weighings.

The contract price paid per kilogram {pound} or tonne {ton} for compost (erosion control) shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in applying compost for erosion control, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

#### 10-1.10 AGGREGATE BASE

Aggregate base shall be Class 2 and shall conform to the provisions in Section 26, "Aggregate Bases," of the Standard Specifications and these special provisions.

The restriction that the amount of reclaimed material included in Class 2 aggregate base not exceed 50 percent of the total volume of the aggregate used shall not apply. Aggregate for Class 2 aggregate base may include reclaimed glass. Aggregate base incorporating reclaimed glass shall not be placed at locations where surfacing will not be placed over the aggregate base.

#### 10-1.11 ASPHALT CONCRETE

##### GENERAL

Asphalt concrete shall be Type B and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

The grade of asphalt binder to be mixed with aggregate for Type B asphalt concrete shall be Grade PG 64-16 conforming to the provisions in Section 92, "Asphalts," of the Standard Specifications.

The asphalt content of the asphalt mixture will be determined in conformance with the requirements in California Test 379, or in conformance with the requirements in California Test 382.

The amount of asphalt binder used in asphalt concrete placed in dikes, gutters, gutter flares, overside drains and aprons at the ends of drainage structures shall be increased one percent by weight of the aggregate over the amount of asphalt binder determined for use in asphalt concrete placed on the traveled way.

The aggregate for Type B asphalt concrete shall conform to the ½" maximum, medium grading specified in Section 39-2.02, "Aggregate," of the Standard Specifications.

##### PAINT BINDER (TACK COAT)

Paint binder (tack coat) shall be applied to existing surfaces to be surfaced and between layers of asphalt concrete, except when eliminated by the Engineer.

Paint binder (tack coat) shall be, at the option of the Contractor, either slow-setting asphaltic emulsion, rapid-setting asphaltic emulsion or paving asphalt. Slow-setting asphaltic emulsion and rapid-setting asphaltic emulsion shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 94, "Asphaltic Emulsions," of the Standard Specifications. When paving asphalt is used for paint binder, the grade will be determined by the Engineer. Paving asphalt shall conform to the provisions in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," and the provisions in Section 92, "Asphalts," of the Standard Specifications.

Paint binder (tack coat) shall be applied in the gallon per square yard range limits specified for the surfaces to receive asphalt concrete in the tables below. The exact application rate within the range will be determined by the Engineer.

Application Rates for Asphaltic Emulsion Paint Binder (Tack Coat) on Asphalt Concrete (except Open Graded) and on Portland Cement Concrete Pavement (PCCP)		
Type of surface to receive paint binder (tack coat)	Slow-Setting Asphaltic Emulsion gal/sq yd (Note A)	Rapid-Setting Asphaltic Emulsion gal/sq yd (Note B)
Dense, compact surfaces, between layers, and on PCCP	0.04 - 0.08	0.02 - 0.04
Open textured, or dry, aged surfaces	0.08 - 0.20	0.04 - 0.09

Note A: Slow-setting asphaltic emulsion is asphaltic emulsion diluted with additional water. Water shall be added and mixed with the asphaltic emulsion (containing up to 43 percent water) so the resulting mixture contains one part asphaltic emulsion and not more than one part added water. The water shall be added by the emulsion producer or at a facility that has the capability to mix or agitate the combined blend.

Note B: Undiluted rapid-setting asphaltic emulsion.

Application Rates for Paint Binder (Tack Coat) on Asphalt Concrete (except Open Graded) and on Portland Cement Concrete Pavement (PCCP)	
Type of surface to receive paint binder (tack coat)	Paving Asphalt gal/sq yd
Dense, compact surfaces, between layers, and on PCCP	0.01 - 0.02
Open textured, or dry, aged surfaces	0.02 - 0.06

Application Rates for Asphaltic Emulsion Paint Binder (Tack Coat) on Open Graded Asphalt Concrete		
Type of surface to receive paint binder (tack coat)	Slow-Setting Asphaltic Emulsion gal/sq yd (Note A)	Rapid-setting Asphaltic Emulsion gal/sq yd (Note B)
Dense, compact surfaces and between layers	0.06 - 0.11	0.02 - 0.06
Open textured, or dry, aged surfaces	0.11 - 0.24	0.06 - 0.12

Note A: Slow-setting asphaltic emulsion is asphaltic emulsion diluted with additional water. Water shall be added and mixed with the asphaltic emulsion (containing up to 43 percent water) so the resulting mixture contains one part asphaltic emulsion and not more than one part added water. The water shall be added by the emulsion producer or at a facility that has the capability to mix or agitate the combined blend.

Note B: Undiluted rapid-setting asphaltic emulsion.

Application Rates for Paint Binder (Tack Coat) on Open Graded Asphalt Concrete	
Type of surface to receive paint binder (tack coat)	Paving Asphalt gal/sq yd
Dense, compact surfaces and between layers	0.01 - 0.03
Open textured, or dry, aged surfaces	0.03 - 0.07

When asphaltic emulsion is used as paint binder (tack coat), asphalt concrete shall not be placed until the applied asphaltic emulsion has completely changed color from brown to black.

### **10-1.12 ROADSIDE SIGNS**

Roadside signs shall be furnished and installed at the locations shown on the plans or where designated by the Engineer and in conformance with the provisions in Section 56-2, "Roadside Signs," of the Standard Specifications and these special provisions.

The Contractor shall furnish roadside sign panels in conformance with the provisions in "Furnish Sign" of these special provisions.

Wood posts shall be pressure treated after fabrication in conformance with the provisions in Section 58, "Preservative Treatment of Lumber, Timber and Piling," of the Standard Specifications and AWP A Use Category System: UC4A, Commodity Specification A or B.

### **10-1.13 FURNISH SIGN**

Signs shall be fabricated and furnished in accordance with details shown on the plans, the Traffic Sign Specifications, and these special provisions.

Traffic Sign Specifications for California sign codes are available for review at:

<http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm>

Traffic Sign Specifications for signs referenced with Federal MUTCD sign codes can be found in Standard Highway Signs Book, administered by the Federal Highway Administration, which is available for review at:

[http://mutcd.fhwa.dot.gov/ser-shs\\_millennium.htm](http://mutcd.fhwa.dot.gov/ser-shs_millennium.htm)

Information on cross-referencing California sign codes with the Federal MUTCD sign codes is available at:

<http://www.dot.ca.gov/hq/traffops/signtech/signdel/specs.htm>

Temporary or permanent signs shall be free from blemishes that may affect the serviceability and detract from the general sign color and appearance when viewing during daytime and nighttime from a distance of 25 feet. The face of each finished sign shall be uniform, flat, smooth, and free of defects, scratches, wrinkles, gel, hard spots, streaks, extrusion marks, and air bubbles. The front, back, and edges of the sign panels shall be free of router chatter marks, burns, sharp edges, loose rivets, delaminated skins, excessive adhesive over spray and aluminum marks.

### **QUALITY CONTROL FOR SIGNS**

The requirements of "Quality Control for Signs" in this section shall not apply to construction area signs.

No later than 14 days before sign fabrication, the Contractor shall submit a written copy of the quality control plan for signs to the Engineer for review. The Engineer will have 10 days to review the quality control plan. Sign fabrication shall not begin until the Engineer approves the Contractor's quality control plan in writing. The Contractor shall submit to the Engineer at least 3 copies of the approved quality control plan. The quality control plan shall include, but not be limited to the following requirements:

- A. Identification of the party responsible for quality control of signs,
- B. Basis of acceptance for incoming raw materials at the fabrication facility,
- C. Type, method and frequency of quality control testing at the fabrication facility,
- D. List (by manufacturer and product name) of process colors, protective overlay film, retroreflective sheeting and black non-reflective film,
- E. Recommended cleaning procedure for each product, and
- F. Method of packaging, transport and storage for signs.

No legend shall be installed at the project site. Legend shall include letters, numerals, tildes, bars, arrows, route shields, symbols, logos, borders, artwork, and miscellaneous characters. The style, font, size, and spacing of the legend shall conform to the Standard Alphabets published in the FHWA Standard Highway Signs Book. The legend shall be

oriented in the same direction in accordance with the manufacturer's orientation marks found on the retroreflective sheeting.

On multiple panel signs, legend shall be placed across joints without affecting the size, shape, spacing, and appearance of the legend. Background and legend shall be wrapped around interior edges of formed panel signs as shown on plans to prevent delamination.

The following notation shall be placed on the lower right side of the back of each sign where the notation will not be blocked by the sign post or frame:

- A. PROPERTY OF EL DORADO COUNTY,
- B. Name of the sign manufacturer,
- C. Month and year of fabrication,
- D. Type of retroreflective sheeting, and
- E. Manufacturer's identification and lot number of retroreflective sheeting.

The above notation shall be applied directly to the aluminum sign panels in 1/4-inch upper case letters and numerals by die-stamp and applied by similar method to the fiberglass reinforced plastic signs. Painting, screening, or engraving the notation will not be allowed. The notation shall be applied without damaging the finish of the sign.

Signs with a protective overlay film shall be marked with a dot of 3/8 inch in diameter. The dot placed on white border shall be black, while the dot placed on black border shall be white. The dot shall be placed on the lower border of the sign before application of the protective overlay film and shall not be placed over the legend and bolt holes. The application method and exact location of the dot shall be determined by the manufacturer of the signs.

For sign panels that have a minor dimension of 48 inches or less, no splice will be allowed in the retroreflective sheet except for the splice produced during the manufacturing of the retroreflective sheeting. For sign panels that have a minor dimension greater than 48 inches, only one horizontal splice will be allowed in the retroreflective sheeting.

Unless specified by the manufacturer of the retroreflective sheeting, splices in retroreflective sheeting shall overlap by a minimum of one inch. Splices shall not be placed within 2 inches from edges of the panels. Except at the horizontal borders, the splices shall overlap in the direction from top to bottom of the sign to prevent moisture penetration. The retroreflective sheeting at the overlap shall not exhibit a color difference under the incident and reflected light.

Signs exhibiting a significant color difference between daytime and nighttime shall be replaced immediately.

Repairing sign panels will not be allowed except when approved by the Engineer.

The Department will inspect signs at the Contractor's facility and delivery location, and in accordance with Section 6, "Control of Materials," of the Standard Specifications. The Engineer will inspect signs for damage and defects before and after installation.

Regardless of kind, size, type, or whether delivered by the Contractor or by a common carrier, signs shall be protected by thorough wrapping, tarping, or other methods to ensure that signs are not damaged by weather conditions and during transit. Signs shall be dry during transit and shipped on pallets, in crates, or tier racks. Padding and protective materials shall be placed between signs as appropriate. Finished sign panels shall be transported and stored by method that protects the face of signs from damage. The Contractor shall replace wet, damaged, and defective signs.

Signs shall be stored in dry environment at all times. Signs shall not rest directly on the ground or become wet during storage. Signs, whether stored indoor or outdoor, shall be free standing. In areas of high heat and humidity signs shall be stored in enclosed climate-controlled trailers or containers. Signs shall be stored indoor if duration of the storage will exceed 30 days.

Screen processed signs shall be protected, transported and stored as recommended by the manufacturer of the retroreflective sheeting.



When requested, the Contractor shall provide the Engineer test samples of signs and materials used at various stages of production. Sign samples shall be 12" x 12" in size with applied background, letter or numeral, and border strip.

The Contractor shall assume the costs and responsibilities resulting from the use of patented materials, equipment, devices, and processes for the Contractor's work.

Full compensation for furnishing sign panels shall be considered as included in the prices paid for roadside signs and no separate payment will be made therefore.

#### **10-1.14 ALTERNATIVE PIPE**

Alternative pipe culverts shall conform to the provisions in Section 62, "Alternative Culverts," of the Standard Specifications and these special provisions.

#### **10-1.15 PLASTIC PIPE**

Plastic pipe shall conform to the provisions in Section 64, "Plastic Pipe," of the Standard Specifications .

#### **10-1.16 MISCELLANEOUS FACILITIES**

Flared end sections and inlets shall conform to the provisions in Section 70, "Miscellaneous Facilities," of the Standard Specifications and these special provisions.

#### **10-1.17 SLOPE PROTECTION**

Slope protection shall be placed or constructed in conformance with the provisions in Section 72, "Slope Protection," of the Standard Specifications.

#### **10-1.18 FENCE**

Fence shall be placed or constructed in conformance with the details shown on the plans and the provisions in Section 90-10, "Minor Concrete," of the Standard Specifications.

Quantities of fence to be paid for will be measured by the linear foot from actual measurements of the completed fence, the measurements to be made parallel to the ground slope along the line of completed runs of fence, deducting the widths of openings.

The contract price paid per linear foot of fence shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing fence complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

#### **10-1.19 CABLE RAILING**

Cable railing shall conform to the provisions in Section 83-1, "Railings," of the Standard Specifications.

#### **10-1.20 THERMOPLASTIC TRAFFIC STRIPE AND PAVEMENT MARKING**

Thermoplastic traffic stripes (traffic lines) and pavement markings shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

Thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification PTH-02ALKYD.

Retroreflectivity of the thermoplastic traffic stripes and pavement markings shall conform to the requirements in ASTM Designation: D 6359-99. White thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 250 mcd m<sup>-2</sup> lx<sup>-1</sup>. Yellow thermoplastic traffic stripes and pavement markings shall have a minimum initial retroreflectivity of 150 mcd m<sup>-2</sup> lx<sup>-1</sup>.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Thermoplastic traffic stripes shall be applied at the minimum thickness and application rate as specified below. The minimum application rate is based on a solid stripe of 4 inches in width.

Minimum Stripe Thickness (inch)	Minimum Application Rate (lb/ft)
0.079	0.27

Thermoplastic traffic stripes and pavement markings shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

At the option of the Contractor, permanent traffic striping and pavement marking tape conforming to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions may be placed instead of the thermoplastic traffic stripes and pavement markings specified herein. Permanent tape, if used, shall be installed in conformance with the manufacturer's specifications.

If permanent tape is placed instead of thermoplastic traffic stripes and pavement markings, the tape will be measured and paid for by the linear foot as thermoplastic traffic stripe and by the square foot as thermoplastic pavement marking.

**10-1.21 THERMOPLASTIC TRAFFIC STRIPE (SPRAYABLE)**

Sprayable thermoplastic traffic stripes (traffic lines) shall be applied in conformance with the provisions in Section 84, "Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

Sprayable thermoplastic material shall be free of lead and chromium, and shall conform to the requirements in State Specification No. PTH-02SPRAY.

Retroreflectivity of the sprayable traffic stripes shall conform to the requirements in ASTM Designation: D 6359-99. White sprayable thermoplastic traffic stripes shall have a minimum initial retroreflectivity of 250 mcd m<sup>-2</sup> lx<sup>-1</sup>. Yellow sprayable thermoplastic traffic stripes shall have a minimum initial retroreflectivity of 150 mcd m<sup>-2</sup> lx<sup>-1</sup>.

At the option of the Contractor, permanent traffic striping and pavement marking tape conforming to the provisions in "Prequalified and Tested Signing and Delineation Materials" of these special provisions may be placed instead of the sprayable thermoplastic traffic stripes. Permanent tape, if used, shall be installed in conformance with the manufacturer's specifications.

Where striping joins existing striping, as shown on the plans, the Contractor shall begin and end the transition from the existing striping pattern into or from the new striping pattern a sufficient distance to ensure continuity of the striping pattern.

Sprayable thermoplastic material shall be applied to the pavement at a minimum thickness of 0.039-inch and a minimum rate of 0.13-lb/ft. The minimum application rate is based on a solid stripe of 4 inches in width.

Sprayable thermoplastic material shall be applied to the pavement at a temperature between 351° F and 401° F, unless a different temperature is recommended by the manufacturer.

Sprayable thermoplastic traffic stripes shall be free of runs, bubbles, craters, drag marks, stretch marks, and debris.

If permanent tape is placed instead of sprayable thermoplastic traffic stripes, the tape will be measured and paid for by the linear foot as thermoplastic traffic stripe (sprayable).

Sprayable thermoplastic traffic stripes will be measured by the meter along the line of the traffic stripes, without deductions for gaps in broken traffic stripes. A double traffic stripe, consisting of two 4-inch wide yellow stripes, will be measured as one traffic stripe.

The contract price paid per linear foot for thermoplastic traffic stripe (sprayable) shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in applying sprayable thermoplastic traffic stripes (regardless of the number, widths, and patterns of individual stripes involved in each traffic stripe) including establishing alignment for stripes, and layout work, complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

#### **10-1.22 BOLLARDS**

Bollards and removable bollards shall conform to the detail shown on the plans and to the provisions for miscellaneous bridge metal in Section 75, "Miscellaneous Metal" of the Standard Specifications.

The contract unit price paid for bollards and removable bollards shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and installing bollards complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

**SECTION 10-2. (BLANK)**

**SECTION 10-3. (BLANK)**

### **AMENDMENT TO STANDARD SPECIFICATIONS**

### **STANDARD PLAN LIST**