SECTION D - CONSTRUCTION DETAILS

1. MATERIALS

Attention is directed to Section 6, "Control of Materials," of the Standard Specifications and these special provisions.

The Contractor shall furnish all materials required to complete the work under this contract.

A. Weighing and Measuring Devices

The Contractor and/or suppliers shall bear the expense of all service fees for testing and approving of commercial and non-commercial weighing, measuring and metering devices. The cost of the equipment, labor, and materials furnished by the Contractor to assist in the testing of the weighing, measuring or metering devices will be considered as included in the contract prices paid for the various items of work requiring said weighing, measuring or metering and no separate payment will be made therefor.

B. Aggregates

Attention is directed to 26-1.02, "Materials," and 39-2.02, "Aggregate," respectively, of the Standard Specifications.

If the results of either or both the aggregate grading and Sand Equivalent tests do not meet the requirements specified for "Contract Compliance," the material, which is represented by these tests, shall be removed. However, if requested by the Contractor and approved by the Engineer, said material may remain in place and the Contractor shall pay to the State (County) the following amounts for all such material left in place:

Item	Adjustment
Aggregate Base	**$1.00/Ton**
Asphalt Concrete	**$1.75/Ton**

The Department may deduct such amounts from any moneys due, or that may become due, to the Contractor under the contract.

C. Surface Mining and Reclamation Act

Attention is directed to the Surface Mining and Reclamation Act of 1975, commencing in Public Resources Code, Mining and Geology, Section 2710, which establishes regulations pertinent to surface mining operations.

Material from the mining operations furnished for this project shall only come from permitted sites in compliance with the Surface Mining Reclamation Act of 1975.

1. MATERIALS (Continued)

The requirements of this section shall apply to all materials furnished for the project, except for acquisition of materials in conformance with Section 4-1.05, "Use of Materials Found on the Work," of the Standard Specifications.

D. Prequalified & Tested Signing & Delineation Materials

The California Department of Transportation maintains a list of Pre-qualified and Tested Signing and Delineation materials. The Engineer shall not be precluded from sampling and testing products on the list of Pre-qualified and Tested Signing and Delineation Materials.

The manufacturer of products on the list of Pre-qualified and Tested Signing and Delineation materials shall furnish the Engineer a Certificate of Compliance in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications for each type of traffic product supplied.

For those categories of materials included in the list of Pre-qualified and Tested Signing and Delineation Materials, only those products shown within the listing may be used in the work. Other categories of products not included in the list of Pre-qualified and Tested Signing and Delineation Materials may be used in the work, provided they conform to the requirements of the Standard Specifications.

Materials and products may be added to the list of Pre-qualified and Tested Signing and Delineation Materials if the manufacture submits a New Product Information Form to the New Product Coordinator at the Transportation Laboratory. Upon a Departmental request for samples, sufficient samples shall be submitted to permit performance of required tests. Approval of materials or products will depend upon compliance with the specifications, and tests the Department may elect to perform.

The following is a partial listing of previously approved pre-qualified and tested delineation materials and products:

MATERIALS AND PRODUCTS

Pavement markers, retroreflective
Pavement markers, Temporary Type
Retroreflective sheeting for markers and delineators
Retroreflective sheeting for traffic cone sleeves

PAVEMENT MARKERS, PERMANENT TYPE
Retroreflective With Abrasion Resistant Surface (ARS)
1. Apex, Model 921AR (4" x 4")
2. Ennis Paint, Models C88 (4" x 4"), 911 (4" x 4") and C80FH
3. Ray-O-Lite, Models "AA" ARC II (4" x 4") and ARC Round Shoulder (4" x 4")
4. 3M Series 290 (3.5" x 4")
5. 3M Series 290 PSA
6. Glowlite, Inc Model 988AR (4" x 4")

Retroreflective With Abrasion Resistant Surface (ARS)
(for recessed applications only)

1. MATERIALS (Continued)

1. Ennis Paint, Model 948 (2.3" x 4.7")
2. Ennis Paint, Model 944SB (2" x 4")*
3. Ray-O-Lite, Model 2002 (2" x 4.6")
4. Ray-O-Lite, Model 2004 (2" x 4")*

*For use only in 4.5 inch wide (older) recessed slots

Non-Reflective, 4-inch Round

1. Apex Universal (Ceramic)
2. Apex Universal, Models 929 (ABS) and 929PP (Polypropylene)
3. Glowlite, Inc. (Ceramic) and PP(Polypropylene)
4. Hi-Way Safety, Inc., Models P20-2000W and 2001Y (ABS)
5. Interstate Sales, "Diamond Back" (Polypropylene)
6. Novabrite Models Cdot (White) Cdot-y (Yellow), Ceramic
7. Novabrite Models Pdot-w (White) Pdot-y (Yellow), Polypropylene
8. Three D Traffic Works TD10000 (ABS), TD10500 (Polypropylene)

PAVEMENT MARKERS, TEMPORARY TYPE

Temporary Markers For Long Term Day/Night Use (180 days or less)

1. Vega Molded Products "Temporary Road Marker" (3" x 4")
2. Filtrona Extrusion, Halftrack model 25, 26 and RPM 35

Temporary Markers For Short Term Day/Night Use (14 days or less)

(For seal coat or chip seal applications, clear protective covers are required)

1. Apex Universal, Model 932
2. Filtrona Extrusion, Models T.O.M., T.R.P.M., and "HH" (High Heat)
3. Hi-Way Safety, Inc., Model 1280/1281
4. Glowlite, Inc., Model 932

STRIPING AND PAVEMENT MARKING MATERIAL

Permanent Traffic Striping and Pavement Marking Tape

1. Advanced Traffic Marking, Series 300 and 400
2. Brite-Line, Series 1000
3. Brite-Line, "DeltaLine XRP"
4. Swarco Industries, "Director 35" (For transverse application only)
5. Swarco Industries, "Director 60"
6. 3M, "Stamark" Series 380 and 5730
7. 3M, "Stamark" Series 420 (For transverse application only)

Temporary (Removable) Striping and Pavement Marking Tape (180 days or less)

1. Advanced Traffic Marking, Series 200
2. Brite-Line, Series 100
3. Garlock Rubber Technologies, Series 2000
4. P.B. Laminations, Aztec, Grade 102
5. Swarco Industries, "Director-2"
6. Trelleborg Industries, R140 Series
7. 3M Series 620 "CR", and Series A750
8. 3M Series A145, Removable Black Line Mask
(Black Tape: for use only on Hot mix asphalt surfaces)
9. Advanced Traffic Marking Black "Hide-A-Line"
(Black Tape: for use only on Hot mix asphalt surfaces)

1. <u>MATERIALS</u> (Continued)

10. Brite-Line "BTR" Black Removable Tape
(Black Tape: for use only on Hot mix asphalt surfaces)
11. Trelleborg Industries, RB-140
(Black Tape: for use only on Hot mix asphalt surfaces)

Preformed Thermoplastic (Heated in place)
1. Flint Trading Inc., "Hot Tape"
2. Flint Trading Inc., "Premark Plus"
3. Ennis Paint Inc., "Flametape"

Ceramic Surfacing Laminate, 6" x 6"
1. Highway Ceramics, Inc.

CLASS 1 DELINEATORS
One Piece Driveable Flexible Type, 66-inch
1. Filtrona Extrusion, "Flexi-Guide Models 400 and 566"
2. Carsonite, Curve-Flex CFRM-400
3. Carsonite, Roadmarker CRM-375
4. FlexStake, Model 654 TM
5. GreenLine Model CGD1-66

Special Use Type, 66-inch
1. Filtrona Extrusion, Model FG 560 (with 18-inch U-Channel base)
2. Carsonite, "Survivor" (with 18-inch U-Channel base)
3. Carsonite, Roadmarker CRM-375 (with 18-inch U-Channel base)
4. FlexStake, Model 604
5. GreenLine Model CGD (with 18-inch U-Channel base)
6. Impact Recovery Model D36, with #105 Driveable Base
7. Safe-Hit with 8-inch pavement anchor (SH248-GP1)
8. Safe-Hit with 15-inch soil anchor (SH248-GP2) and with 18-inch soil anchor (SH248-GP3

Surface Mount Type, 48-inch
1. Bent Manufacturing Company, Masterflex Model MFEX 180-48
2. Carsonite, "Channelizer"
3. FlexStake, Models 704, 754 TM, and EB4
4. Impact Recovery Model D48, with #101 Fixed (Surface-Mount) Base
5. Three D Traffic Works "Channelflex" ID No. 522248W

CHANNELIZERS
Surface Mount Type, 36-inch
1. Bent Manufacturing Company, Masterflex Models MF-360-36 (Round) and MF-180-36 (Flat)&MFEX 180-36
2. Filtrona Extrusion, Flexi-Guide Models FG300PE, FG300UR, and FG300EFX
3. Carsonite, "Super Duck" (Round SDR-336)
4. Carsonite, Model SDCF03601MB "Channelizer"
5. FlexStake, Models 703, 753 TM, and EB3
6. GreenLine, Model SMD-36
7. Hi-way Safety, Inc. "Channel Guide Channelizer" Model CGC36
8. Impact Recovery Model D36, with #101 Fixed (Surface-Mount) Base
9. Safe-Hit, Guide Post, Model SH236SMA and Dura-Post, Model SHL36SMA
10. Three D Traffic Works "Boomerang" 5200 Series

1. MATERIALS (Continued)

Lane Separation System
1. Filtrona Extrusion, "Flexi-Guide (FG) 300 Curb System"
2. Qwick Kurb, "Klemmfix Guide System"
3. Dura-Curb System
4. Tuff Curb

CONICAL DELINEATORS, 42-inch
(For 28-inch Traffic Cones, see Standard Specifications)
1. Bent Manufacturing Company "T-Top"
2. Plastic Safety Systems "Navigator-42"
3. TrafFix Devices "Grabber"
4. Three D Traffic Works "Ringtop" TD7000, ID No. 742143
5. Three D Traffic Works, TD7500
6. Work Area Protection Corp. C-42

OBJECT MARKERS
Type "K", 18-inch
1. Filtrona Extrusion, Model FG318PE
2. Carsonite, Model SMD 615
3. FlexStake, Model 701 KM
4. Safe-Hit, Model SH718SMA

Type "Q" Object Markers, 24-inch
1. Bent Manufacturing "Masterflex" Model MF-360-24
2. Filtrona Extrusion, Model FG324PE
3. Carsonite, "Channelizer"
4. FlexStake, Model 701KM
5. Safe-Hit, Models SH824SMA_WA and SH824GP3_WA
6. Three D Traffic Works ID No. 531702W and TD 5200
7. Three D Traffic Works ID No. 520896W

CONCRETE BARRIER MARKERS AND
TEMPORARY RAILING (TYPE K) REFLECTORS

Impactable Type
1. ARTUK, "FB"
2. Filtrona Extrusion, Models PCBM-12 and PCBM-T12
3. Duraflex Corp., "Flexx 2020" and "Electriflexx"
4. Hi-Way Safety, Inc., Model GMKRM100
5. Plastic Safety Systems "BAM" Models OM-BARR and OM-BWAR
6. Three D Traffic Works "Roadguide" Model TD 9300

Non-Impactable Type
1. ARTUK, JD Series
2. Plastic Safety Systems "BAM" Models OM-BITARW and OM-BITARA
3. Vega Molded Products, Models GBM and JD
4. Plastic Vacuum Forming, "Cap-It C400"

METAL BEAM GUARD RAIL POST MARKERS
(For use to the left of traffic)

1. MATERIALS (Continued)

1. Filtrona Extrusion, "Mini" (3" x 10")
2. Creative Building Products, "Dura-Bull, Model 11201"
3. Duraflex Corp., "Railrider"
4. Plastic Vacuum Forming, "Cap-It C300"

CONCRETE BARRIER DELINEATORS, 16-inch
(For use to the right of traffic)
1. Filtrona Extrusion, Model PCBM T-16
2. Safe-Hit, Model SH216RBM
3. Three D Traffic Works "Roadguide" Model 9400

CONCRETE BARRIER-MOUNTED MINI-DRUM (10" x 14" x 22")
1. Stinson Equipment Company "SaddleMarker"

GUARD RAILING DELINEATOR
(Place top of reflective element at 48 inches above plane of roadway)
Wood Post Type, 27-inch
1. Filtrona Extrusion, FG 427 and FG 527
2. Carsonite, Model 427
3. FlexStake, Model 102 GR
4. GreenLine GRD 27
5. Safe-Hit, Model SH227GRD
6. Three D Traffic Works "Guardflex" TD9100
7. New Directions Mfg, NDM27

Steel Post Type
1. Carsonite, Model CFGR-327

RETROREFLECTIVE SHEETING

Channelizers, Barrier Markers, and Delineators
1. Avery Dennison T-6500 Series (For rigid substrate devices only)
2. Avery Dennison WR-7100 Series
3. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
4. Reflexite, PC-1000 Metalized Polycarbonate
5. Reflexite, AC-1000 Acrylic
6. Reflexite, AP-1000 Metalized Polyester
7. Reflexite, Conformalight, AR-1000 Abrasion Resistant Coating
8. 3M, High Intensity

Traffic Cones, 4-inch and 6-inch Sleeves
1. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
2. Reflexite, Vinyl, "TR" (Semi-transparent) or "Conformalight"
3. 3M Series 3840
4. Avery Dennison S-9000C

Drums
1. Avery Dennison WR-6100
2. Nippon Carbide Industries, Flexible Ultralite Grade (ULG) II
3. Reflexite, "Conformalight", "Super High Intensity" or "High Impact Drum Sheeting"

1. <u>MATERIALS</u> (Continued)

4. 3M Series 3810

Barricades: Type I, Medium-Intensity (Typically Enclosed Lens, Glass-Bead Element)
1. Nippon Carbide Industries, CN8117
2. Avery Dennison, W 1100 series 3. 3M Series CW 44
3. 3M Series CW 44

Barricades: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)
1. Avery Dennison, W-2100 Series

Signs: Type II, Medium-High-Intensity (Typically Enclosed Lens, Glass-Bead Element)
1. Avery Dennison, T-2500 Series
2. Nippon Carbide Industries, Nikkalite 18000

Signs: Type III, High-Intensity (Typically Encapsulated Glass-Bead Element)
1. Avery Dennison, T-5500A and T-6500 Series
2. Nippon Carbide Industries, Nikkalite Brand Ultralite Grade II
3. 3M 3870 and 3930 Series

Signs: Type IV, High-Intensity (Typically Unmetallized Microprismatic Element)
1. Avery Dennison, T-6500 Series
2. Nippon Carbide Industries, Crystal Grade, 94000 Series
3. Nippon Carbide Industries, Model No. 94847 Fluorescent Orange
4. 3M Series 3930 and Series 3924S

Signs: Type VI, Elastomeric (Roll-Up) High-Intensity, without Adhesive
1. Avery Dennison, WU-6014
2. Novabrite LLC, "Econobrite"

3. Reflexite "Vinyl"
4. Reflexite "SuperBright"
5. Reflexite "Marathon"
6. 3M Series RS20

Signs: Type VII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)
1. 3M Series 3924S, Fluorescent Orange
2. 3M LDP Series 3970

Signs: Type VIII, Super-High-Intensity (Typically Unmetallized Microprismatic Element)
1. Avery Dennison, T-7500 Series
2. Avery Dennison, T-7511 Fluorescent Yellow
3. Avery Dennison, T-7513 Fluorescent Yellow Green
4. Avery Dennison, W-7514 Fluorescent Orange
5. Nippon Carbide Industries, Nikkalite Crystal Grade Series 92800
6. Nippon Carbide Industries, Nikkalite Crystal Grade Model 92847 Fluorescent Orange

Signs: Type IX, Very-High-Intensity (Typically Unmetallized Microprismatic Element)
1. 3M VIP Series 3981 Diamond Grade Fluorescent Yellow
2. 3M VIP Series 3983 Diamond Grade Fluorescent Yellow/Green
3. 3M VIP Series 3990 Diamond Grade

1. MATERIALS (Continued)

4. Avery Dennison T-9500 Series
5. Avery Dennison, T9513, Fluorescent Yellow Green
6. Avery Dennison, W9514, Fluorescent Orange
7. Avery Dennison, T-9511 Fluorescent Yellow

SPECIALTY SIGNS

1. Reflexite "Endurance" Work Zone Sign (with Semi-Rigid Plastic Substrate)

ALTERNATIVE SIGN SUBSTRATES

Fiberglass Reinforced Plastic (FRP) and Expanded Foam PVC

1. Fiber-Brite (FRP)
2. Sequentia, "Polyplate" (FRP)
3. Inteplast Group "InteCel" (0.5 inch for Post-Mounted CZ Signs, 48-inch or less)(PVC)

Aluminum Composite, Temporary Construction Signs and Permanent Signs up to 4 foot,7Inches

1. Alcan Composites "Dibond Material, 80 mils"
2. Mitsubishi Chemical America, Alpolic 350
3. Bone Safety Signs, Bone Light ACM

Note: For questions regarding this listing contact the:
Division of Signs & Delineation, Traffic Operations, (916) 654-5869
CALNET 8-464-5869 Chemical Testing Branch,
Transportation Laboratory, (916) 227-7289, 8-498-7289

2. ORDER OF WORK

Order of work shall conform to the provisions in Section 5-1.05, “Order of Work,” of the Standard Specifications and these Special Provisions.

3. COOPERATION

Attention is directed to Sections 7-1.14, "Cooperation," and 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications and these special provisions.

Work by public utility forces and/or Butte County crews may be underway within and/or adjacent to the limits of this contract at the time work under these special provisions is being performed. The Contractor, for the work herein specified, shall cooperate with all forces engaged in performing other work as above described. Such forces may conduct their operations with as little inconvenience and delay as possible. The Contractor shall permit such forces passage through the work to transport materials and equipment to the site of their operations.

In lieu of the conflicting provisions in Section 8-1.10, full compensation for conforming to the above requirements or for any delay or inconvenience to the Contractor's operations by reason of his conformance with such requirements, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

4. OBSTRUCTIONS

Attention is directed to Sections 8-1.10, "Utility and Non-Highway Facilities," and 15, "Existing Highway Facilities," of the Standard Specifications and these special provisions. The Contractor shall notify the Engineer and the appropriate regional notification center for operators of subsurface installations at least 2 working days, but not more than 14 calendar days, prior to performing any excavation or other work close to any underground pipeline, conduit, duct, wire or other structure. Regional notification centers include but are not limited to the following:

NOTIFICATION CENTER	TELEPHONE
Underground Service Alert Northern California	**1-800-227-2600**
(USA)	**1-800-642-2444**

The contract work shall be so conducted as to permit utility companies to maintain their services without interruption. Abandoned utility pipelines, telephone cables, and conduits, if encountered, shall be removed and disposed of off the job site. Attention is directed to the existence of storm drain and utility facilities, which are to remain and which are located within the area of work. The Contractor shall locate these facilities, work around them and protect them from damage during the course of his construction. Should the Contractor damage any of the existing facilities, they will be repaired and/or replaced immediately, any costs for repair and/or replacement shall be borne by the Contractor.

4. OBSTRUCTIONS (Continued)

In lieu of conflicting provisions of Section 8-1.10, full compensation for conforming to the above requirements or for delay or inconvenience to the Contractor's operations by reason of his conformance with such requirements, shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefor.

5. MAINTAINING TRAFFIC

Attention is directed to Sections 7-1.08, “Public Convenience,” 7-1.09, “Public Safety,” and 12, “Construction Area Traffic Control Devices,” of the Standard Specifications and these special provisions. Nothing in these special provisions shall be construed as relieving the Contractor from his responsibility as provided in said Section 7-1.09.

The Contractor will be allowed to intermittently close sections of the roadway to through traffic only for various safety issues and construction operations. The Contractor shall submit to the Engineer for approval a Traffic Control Plan that includes the proposed times and lengths of road closures. The Traffic Control Plan shall be submitted to the Engineer at the pre-job conference. The Traffic Control Plan shall be considered as included in the contract lump sum price paid for the item “Traffic Control” and no additional compensation will be allowed therefor.

Illuminated traffic cones when used during the hours of darkness shall be affixed or covered with reflective cone sleeves as specified in Section 12-3.10, “Traffic Cones,” of the Standard Specifications.

5. MAINTAINING TRAFFIC (Continued)

In addition to the existing warning and directional signs, the Contractor shall furnish the posts, mounting hardware and erect, within or adjacent to the limits of work, such construction supplemental warning and directional signs as ordered by the Engineer. These signs will be furnished by the County of Butte and stored in the maintenance warehouse in Oroville. The Contractor shall haul them from storage to the site of the work, frame and erect them. After erection, the Contractor shall maintain these and the existing signs and keep them in good repair until he has returned them to the storage location in Oroville at the completion of the Contract.

Except as provided above for County-furnished signs, the Contractor, at his/her own expense, shall furnish and maintain all lights, signs, barricades, Type III barricades or other devices necessary for the protection of public traffic. In lieu of payment as extra work as specified in Section 7-1.08, "Public Convenience," the cost of installing and removing signs and sign covers, the cost of accommodating public traffic prior to commencing and during construction operations, the cost of furnishing pilot cars, drivers and flagmen, the cost of furnishing, installing and maintaining signs, lights, flares, barricades, Type III barricades and other facilities for the safety, sole convenience and direction of public traffic through and around the work area, the cost of loading, hauling, unloading, erecting, maintaining and returning County-furnished signs, all as determined by the Engineer shall be considered as included in the contract lump sum price paid for the item "Traffic control," and no additional compensation will be allowed therefor.

In lieu of Section 12-2.02, "Flagging Costs," the cost of furnishing all flagmen and guards to provide for passage of public traffic through the work under the provisions in Section 7-1.08, "Public Convenience," and Section 7-1.09, 'Public Safety," shall be considered as included in the contract lump sum price paid for the item "Traffic Control," and no additional compensation will be allowed therefor.

Construction operations shall be performed in such a manner that there will be at least one 11-foot-wide lane open to public traffic at times of allowable traffic flow. At the end of the day's work and when construction operations are suspended, a passageway shall be maintained through the work of sufficient width to provide for a minimum of two 11-foot-wide traffic lanes for public traffic.

Full compensation for conforming to the requirements of the article shall be considered as included in the contract lump sum price paid for the item "Traffic Control," and no additional compensation will be allowed therefor.

A. Traffic Control System for Lane Closure

A traffic control system shall consist of closing traffic lanes in accordance with the provisions of Section 12, "Construction Area Traffic Control Devices," of the Standard Specifications and the provisions under "Maintaining Traffic," elsewhere in these special provisions. If any component in the traffic control system is displaced, or ceases to operate or function as specified, from any cause, during the progress of the work, the Contractor shall immediately repair the component to its original condition or replace the component and shall restore the component to its original location.

STATIONARY TYPE LANE CLOSURE

When lane closures are made for work periods only, at the end of each work period, all components of the traffic control system shall be removed from the traveled way and shoulder. If the Contractor so elects, the components may be stored at selected central locations, approved by the Engineer, within the limits of the highway right-of-way.

Utilizing a pilot car will be at the option of the Contractor. If the Contractor elects to use a pilot car, cones along the centerline need not be placed. The pilot car shall have radio contact with personnel in the work area, and the maximum speed of the pilot car through the traffic control zone shall be 25 miles per hour.

MOVING TYPE LANE CLOSURE

Flashing arrow signs used in moving lane closures shall be truck-mounted. Flashing arrow signs shall be in the caution display mode when used on two-lane highways. Changeable message signs used in moving lane closure operations shall conform to Section 12-3.12, "Portable Changeable Message Signs," of the Standard Specifications, except the signs shall be truck-mounted and the full operation height of the bottom of the sign may be less than 7 feet above the ground, but should be as high as practicable.

Truck-mounted crash cushions (TMCC) for use in moving lane closures shall be any of the following approved models, or equal:

(1) Hexfoam TMA Series 3000 and

Alpha 1000 TMA Series 1000 and
Alpha 2001 TMA Series 2001

Manufacturer

Energy Absorption Systems, Inc.
One East Wacker Drive
Chicago, IL 60601-2076
Phone (312) 467-6750
Phone (800) 884-8274

Distributor (Northern)

Traffic Control Service, Inc.
8585 Thys Court
Sacramento, CA 95828

FAX (916) 387-9734

Distributor (Southern)

Traffic Control Service, Inc
1881 Betmor Lane
Anaheim, CA 92805
Phone (800) 222-8274

(2) Cal T-001 Model 2 or Model 3:

Manufacturer **Distributor**

Hexcel Corporation 11711 Dublin Boulevard P.O. Box 2312 Dublin, CA 94568 Phone: (510) 828-4200	Hexcel Corporation 11711 Dublin Boulevard P.O. Box 2312 Dublin, CA 94568 Phone: (510) 828-4200

(3) Renco Rengard Model Nos. CAM 8-815 and RAM 8-815

Manufacturer	**Distributor**
Renco, Inc. 1582 Pflugerville Loop Road P.O. Box 730 Pflugerville, TX 78660-0703 Phone (800) 654-8182	Renco, Inc. 1582 Pflugerville Loop Road P.O. Box 730 Pflugerville, TX 78660-0703 Phone (800) 654-8182

Each TMCC shall be individually identified with the manufacturer's name, address, TMCC model number, and a specific serial number. The names and numbers shall each be a minimum ½ inch high, and located on the left (street) side at the lower front corner. The TMCC shall have a message next to the name and model number in ½ inch high letters that states, "The bottom of this TMCC shall be ____ inches ± __ inches above the ground at all points for proper impact performance." Any TMCC, which is damaged or appears to be in poor condition, shall not be used unless recertified by the manufacturer. The Engineer shall be the sole judge as to whether used TMCCs supplied under this contract need recertification. The manufacturer shall determine that each unit meets the requirements for TMCCs in accordance with the standards established by the Transportation Laboratory Structures Research Section.

Approvals for new TMCC designs proposed as equal to the above-approved models shall be in accordance with the procedures, (including crash testing), established by the Transportation Laboratory Structures Research Section. For information regarding submittal of new designs for evaluation contact:

Transportation Laboratory
Structures Research Section
P. O. Box 19128
5900 Folsom Boulevard
Sacramento, CA 95819

New TMCCs proposed as equal to approved TMCCs or approved TMCCs determined by the Engineer that need recertification shall not be used until approved or recertified by the Transportation Laboratory Structures Research Section.

B. Temporary Laneline and Centerline Delineation

Whenever the existing roadway is obliterated, the minimum laneline and centerline delineation to be provided shall consist entirely of temporary reflective raised pavement markers placed at longitudinal intervals of not more than 24 feet. The temporary pavement delineation to

be provided shall be equivalent to the pattern specified for the permanent pavement delineation for the area, as determined by the Engineer.

Temporary reflective raised pavement markers shall be placed in accordance with the manufacturer's instructions and shall be cemented to the surfacing with the adhesive recommended by the manufacturer, except epoxy adhesive shall not be used to place pavement markers.

Temporary reflective raised pavement markers shall be one of temporary pavement markers listed for short term day/night use (14 days or less) in "Prequalified and Tested Signing and Delineation Materials," mentioned elsewhere in these special provisions.

Full compensation for furnishing, placing, and maintaining the temporary reflective raised pavement markers used for temporary laneline and/or centerline delineation shall be considered as included in the contract prices paid for the item "Traffic Control," and no additional compensation will be made therefor.

Full compensation for furnishing, placing and maintaining warning lights will be considered as included in the contract lump sum price paid for, "Traffic Control," and no additional allowance will be made therefor.

6. 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. Existing roadside traffic signs that are in conflict with construction operations shall be removed and placed at the right-of-way line adjacent to the location where removed or at a location determined by the Engineer. Full payment for the removal of the traffic signs shall be included in the contract lump sum price paid for the item "Clearing and Grubbing," and no additional payment will be made therefor.

Full payment for the removal of the stop signs and the furnishing of portable stop signs shall be included in the contract lump sum price paid for the item "Traffic Control," and no additional payment will be made therefor.

A. Pavement Grinding

Pavement grinding shall be done at the locations as shown on the plans and as determined by the Engineer. Pavement grinding shall be in accordance with Section 42-2, "Grinding" of the Standard Specifications and these special provisions.

Unless otherwise determined by the Engineer, the pavement grinding residue shall be disposed of off of the roadway right-of-way. However, upon approval by the Engineer, the residue can be used in roadway embankment construction and/or for shoulder backing material.

Pavement grinding residue used as shoulder backing material shall not be larger than 1½ inches in any dimension.

The contract lump sum price paid for the item "Pavement Grinding", as specified herein, shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals

for doing all the work involved in grinding the existing pavement as well as removing and relocating the residue.

7. 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. Clearing limits shall be as determined by the Engineer.

Clearing and grubbing shall also include but not be limited to; cleaning and re-grading the roadside ditches to drain and shoulders after reconstruction, removing existing fences, removing existing concrete; sidewalks, pedestrian ramps, curb & gutter, and rip-rap, removing and/or salvaging existing culverts and flared end sections, removing existing asphalt, asphalt and concrete driveways, grinding existing thermoplastic markings or striping prior to placing asphalt overlay, grading, preparing sub-grade, and finishing driveways before and after construction, as shown on the plans and as determined by the Engineer.

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

Full compensation for furnishing all the labor, materials, tools, and equipment needed for; removing and disposing of concrete curb, gutter, & sidewalk, vegetation, grinding and removing existing asphalt, cleaning and re-grading ditches and shoulders, removing existing storm drain pipes and culverts, salvaging existing pipes and flared end sections, and grinding any existing thermoplastic striping or markings from the roadway, as specified herein and as determined by the Engineer, shall be considered as included in the contract lump sum price paid for the item “Clearing and Grubbing,” and no additional payment will be made therefor.

8. WATER POLLUTION CONTROL

GENERAL

Water pollution control work shall conform to the provisions in Section 7-1.01G, "Water Pollution," of the Standard Specifications, section of these special provisions entitled "Relations with California Regional Water Quality Control Board," and these special provisions.

The Contractor shall perform water pollution control work in conformance with the requirements in the "Storm Water Pollution Prevention Plan (SWPPP) and Water Pollution Control Program (WPCP) Preparation Manual" and its addenda in effect on the day the Notice to Contractors is dated. This manual is referred to as the "Preparation Manual." Copies of the Preparation Manual may be obtained from:

State of California
Department of Transportation
Publication Distribution Unit
1900 Royal Oaks Drive
Sacramento, California 95815

8. WATER POLLUTION CONTROL(Continued)

Telephone: (916) 445-3520

The Preparation Manual and other references for performing water pollution control work are available from the Department's Construction Storm Water and Water Pollution Control web site at:

http://www.dot.ca.gov/hq/construc/stormwater/stormwater1.htm

Before the start of job site activities, the Contractor shall provide training for project managers, supervisory personnel, and employees involved with water pollution control work. The training shall include:

A. Rules and regulations
B. Implementation and maintenance for:

1. Temporary Soil Stabilization
2. Temporary Sediment Control
3. Tracking Control
4. Wind Erosion Control

The Contractor shall designate in writing a Water Pollution Control Manager (WPCM). The Contractor shall submit a statement of qualifications describing the training, work history, and expertise of the proposed WPCM. The qualifications shall include either:

A. A minimum of 24 hours of Department approved storm water management training described at Department's Construction Storm Water and Water Pollution Control web site.
B. Certification as a Certified Professional in Erosion and Sediment Control (CPESC).

The WPCM shall be:

A. Responsible for water pollution control work.
B. The primary contact for water pollution control work.
C. Have authority to mobilize crews to make immediate repairs to water pollution control practices.

The Contractor may designate one manager to prepare the SWPPP and a different manager to implement the plan. The SWPPP preparer shall meet the training requirements for the WPCM.

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

The Contractor shall submit a Storm Water Pollution Prevention Plan (SWPPP) to the Engineer for approval. The SWPPP shall conform to the requirements in the Preparation Manual the NPDES permit, and these special provisions. The SWPPP shall be submitted in place of the water pollution control program required by the provisions in Section 7-1.01G, “Water Pollution”, of the Standard Specifications.

The SWPPP shall include water pollution control practices:

8. WATER POLLUTION CONTROL(Continued)

A. For storm water and non-storm water from areas outside of the job site related to construction activities for this contract such as:

1. Staging areas.
2. Storage yards.
3. Access roads.

B. Appropriate for each season as described in "Implementation Requirements" of these special provisions.

The SWPPP shall include a schedule that:

A. Describes when work activities that could cause water pollution will be performed.
B. Identifies soil stabilization and sediment control practices for disturbed soil area.
C. Includes dates when these practices will be 25, 50, and 100 percent complete.
D. Shows 100 percent completion of these practices before the rainy season.

The SWPPP shall include the following temporary water pollution control practices and their associated contract items of work as shown on the plans or specified in these special provisions:

A. Temporary Soil Stabilization

1. Temporary Straw Mulch

B. Temporary Sediment Control

1. Temporary Fiber Rolls
2. Street Sweeping

C. Tracking Control

1. Street Sweeping

D. Wind Eroion Control

1. Wind Erosion Control

E. Non-Storm Water Management

1. Construction Site Management

F. Waste Management and Materials Pollution Control

1. Construction Site Management

The SWPPP shall include the following contract items of work for permanent water pollution control as shown on the plans or as specified in these special provisions:

A. Erosion Control (Type D)

8. WATER POLLUTION CONTROL(Continued)

Within 20 days after contract award, the Contractor shall submit 3 copies of the SWPPP to the Engineer. The Contractor shall allow 15 days for the Engineer's review. If revisions are required, the Engineer will provide comments and specify the date that the review stopped. The Contractor shall revise and resubmit the SWPPP within 7 days of receipt of the Engineer's comments. The Engineer's review will resume when the complete SWPPP is resubmitted. When the Engineer approves the SWPPP, the Contractor shall submit 3 copies of the approved SWPPP to the Engineer. The Contractor may proceed with construction activities if the Engineer conditionally approves the SWPPP while minor revisions are being completed. After approval, the Engineer will submit one copy of the approved SWPPP to the RWQCB for their review and comment. If the RWQCB provides comments to the SWPPP, the Contractor shall amend the SWPPP. Construction activities shall begin no sooner than 30 days after the Engineer approves the SWPPP. If 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 because of the Engineer's or the RWQCB's review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The SWPPP shall include a copy of the California Water Quality Board, Central Valley Region Permit, California Department of Fish & Game Permit, and the Army Corps of Engineers Permit.

The Contractor shall not perform work that may cause water pollution until the SWPPP has been approved by the Engineer. The Engineer's review and approval shall not waive any contract requirements and shall not relieve the Contractor from complying with Federal, State and local laws, regulations, and requirements.

If there is a change in construction schedule or activities, the Contractor shall prepare an amendment to the SWPPP to identify additional or revised water pollution control practices. The Contractor shall submit the amendment to the Engineer for review within a time agreed to by the Engineer not to exceed the number of days specified for the initial submittal of the SWPPP. The Engineer will review the amendment within the same time allotted for the review of the initial submittal of the SWPPP.

If directed by the Engineer or requested in writing by the Contractor and approved by the Engineer, changes to the water pollution control work specified in these special provisions will be allowed. Changes may include addition of new water pollution control practices. The Contractor shall incorporate these changes in the SWPPP. Additional water pollution control work will be paid for as extra work in accordance with Section 4-1.03D, "Extra Work," of the Standard Specifications.

The Contractor shall keep a copy of the approved SWPPP at the job site. The SWPPP shall be made available when requested 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 from the public shall be directed to the Engineer.

8. WATER POLLUTION CONTROL(Continued)

IMPLEMENTATION REQUIREMENTS

The Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work ordered in conformance with the provisions in Section 8-1.05, "Temporary Suspension of Work," of the Standard Specifications.

If the Contractor or the Engineer identifies a deficiency in the implementation of the approved SWPPP, the deficiency shall be corrected immediately, unless an agreed date for correction is approved in writing by the Engineer. The deficiency shall be corrected before the onset of precipitation. If the Contractor fails to correct the deficiency by the agreed date or before the onset of precipitation, the Department may correct the deficiency and deduct the cost of correcting deficiencies from payments.

The Contractor shall construct permanent water pollution control items identified in the SWPPP as specified in "Order of Work" of these special provisions. The Contractor shall maintain the permanent water pollution control items in the locations and condition shown on the plans throughout the duration of the project.

Year-Round

The Contractor shall monitor the National Weather Service weather forecast on a daily basis during the contract. The Contractor may use an alternative weather forecasting service if approved by the Engineer. Appropriate water pollution control practices shall be in place before precipitation.

The Contractor may discontinue earthwork operations for a disturbed area for up to 21 days and the disturbed soil area will still be considered active. When earthwork operations in the disturbed area have been completed, the Contractor shall implement appropriate water pollution control practices within 15 days or before predicted precipitation, whichever occurs first.

Rainy Season

The project has no defined rainy season.

Soil stabilization and sediment control practices conforming to these special provisions shall be in place during the rainy season between __October 15th__ and __April 15th__ .

The Contractor shall implement soil stabilization and sediment control practices a minimum of 10 days before the start of the rainy season.

Winter Shutdown

The Contractor shall not remove vegetation or disturb existing ground surface conditions between October 15 and May 1.

8. WATER POLLUTION CONTROL(Continued)

INSPECTION AND MAINTENANCE

The WPCM shall inspect the water pollution control practices identified in the SWPPP as follows:

A. Before a forecasted storm,
B. After precipitation that causes site runoff,
C. At 24-hour intervals during extended precipitation,
D. On a predetermined schedule, a minimum of once every 2 weeks outside of the defined rainy season.
E. On a predetermined schedule, a minimum of once a week during the defined rainy season.

The WPCM shall oversee the maintenance of the water pollution control practices.

The WPCM shall use the Storm Water Quality Construction Site Inspection Checklist provided in the Preparation Manual or an alternative inspection checklist provided by the Engineer. A copy of the completed site inspection checklist shall be submitted to the Engineer within 24 hours of finishing the inspection.

The Contractor may suspend inspections of water pollution control practices during plant establishment work upon written approval from the Engineer.

REPORTING REQUIREMENTS

If the Contractor identifies discharges into surface waters or drainage systems causing or potentially causing 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 7 days of the discharge, notice, or order. The report shall include the following information:

A. The date, time, location, and nature of the operation, type of discharge and quantity, and the cause of the notice or order.
B. The water pollution control practices used before the discharge, or before receiving the notice or order.
C. The date of placement and type of additional or altered water pollution control practices placed after the discharge or after receiving the notice or order.
D. A maintenance schedule for affected water pollution control practices.

PAYMENT

During each estimate period the Contractor fails to conform to the provisions in this section, "Water Pollution Control," or fails to implement the water pollution control practices shown on the plans or specified elsewhere in these special provisions as items of work, the Department will withhold 25 percent of the progress payment.

Withholds for failure to perform water pollution control work will be in addition to all other withholds provided for in the contract. The Department will return performance-failure withholds in the progress payment following the correction for noncompliance.

8. WATER POLLUTION CONTROL(Continued)

The contract lump sum price paid for prepare water pollution control program shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in preparing, obtaining approval of, and amending the WPCP and inspecting water pollution control practices as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Payments for prepare water pollution control program will be made as follows:

A. After the SWPPP has been approved by the Engineer, up to 75 percent of the contract item price for prepare water pollution control program will be included in the monthly progress estimate.
B. After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, payment for the remaining percentage of the contract item price for prepare water pollution control program will be made in conformance with the provisions in Section 9-1.07A, "Payment Prior to Proposed Final Estimate."

Implementation of water pollution control practices in areas outside the highway right of way not specifically provided for in the WPCP or in these special provisions will not be paid for.

Water pollution control practices for which there are separate contract items of work will be measured and paid for as those contract items of work.

9. CONSTRUCTION SITE MANAGEMENT

Construction site management shall consist of controlling potential sources of water pollution before they come in contact with storm water systems or watercourses. The Contractor shall control material pollution and manage waste and non-storm water existing at the construction site by implementing effective handling, storage, use, and disposal practices.

Attention is directed to "Water Pollution Control" of these special provisions regarding the Contractor's appointment of a water pollution control manager (WPCM) for the project.

The Contractor shall train all employees and subcontractors regarding:

A. Material pollution prevention and control;
B. Waste management;
C. Non-storm water management;
D. Identifying and handling hazardous substances; and
E. Potential dangers to humans and the environment from spills and leaks or exposure to toxic or hazardous substances.

Training shall take place before starting work on this project. New employees shall receive the complete training before starting work on this project. The Contractor shall have regular meetings to discuss and reinforce spill prevention and control; material delivery, storage, use, and disposal; waste management; and non-storm water management procedures.

9. CONSTRUCTION SITE MANAGEMENT(Continued)

Instructions for material and waste handling, storage, and spill reporting and cleanup shall be posted at all times in an open, conspicuous, and accessible location at the construction site.

Nonhazardous construction site waste and excess material shall be recycled when practical or disposed of in accordance with the provisions in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications, unless otherwise specified.

Vehicles and equipment at the construction site shall be inspected by the WPCM on a frequent, predetermined schedule, and by the operator each day of use. Leaks shall be repaired immediately, or the vehicle or equipment shall be removed from the construction site.

SPILL PREVENTION AND CONTROL

The Contractor shall implement spill and leak prevention procedures when chemicals or hazardous substances are stored. Spills of petroleum products; substances listed under CFR Title 40, Parts 110, 117, and 302; and sanitary and septic waste shall be contained and cleaned up as soon as is safe.

Minor spills involve small quantities of oil, gasoline, paint, or other material that can be controlled by the first responder upon discovery of the spill. Cleanup of minor spills includes:

A. Containing the spread of the spill,
B. Recovering the spilled material using absorption,
C. Cleaning the contaminated area, and
D. Disposing of contaminated material promptly and properly.

Semi-significant spills are those that can be controlled by the first responder with the help of other personnel. Cleanup of semi-significant spills shall be immediate. Cleanup of semi-significant spills includes:

A. Containing the spread of the spill;
B. Recovering the spilled material using absorption if the spill occurs on paved or an impermeable surface;
C. Containing the spill with an earthen dike and digging up contaminated soil for disposal if the spill occurs on dirt;
D. Covering the spill with plastic or other material to prevent contaminating runoff if the spill occurs during precipitation; and
E. Disposing of contaminated material promptly and properly.

Significant or hazardous spills are those that cannot be controlled by construction personnel. Notifications of these spills shall be immediate. The following steps shall be taken:

A. Construction personnel shall not attempt to cleanup the spill until qualified staff have arrived;
B. Notify the Engineer and follow up with a written report;
C. Obtain the services of a spills contractor or hazardous material team immediately;
D. Notify the local emergency response team by dialing 911 and county officials at the emergency phone numbers kept on the construction site;

E. Notify the Governor's Office of Emergency Services Warning Center at (805) 852-7550;
F. Notify the National Response Center at (800) 424-8802 regarding spills of Federal reportable quantities in conformance with CFR Title 40, Parts 110, 119, and 302;
G. Notify other agencies as appropriate, including:

1. Fire Department,
2. Public Works Department,
3. Coast Guard,
4. Highway Patrol,
5. City Police or County Sheriff Department,
6 Department of Toxic Substances,
7. California Division of Oil and Gas,
8. Cal OSHA, or
9. Regional Water Resources Control Board.

The WPCM shall oversee and enforce proper spill prevention and control measures. Minor, semi-significant, and significant spills shall be reported to the Contractor's WPCM who shall notify the Engineer immediately.

The Contractor shall prevent spills from entering storm water runoff before and during cleanup. Spills shall not be buried or washed with water.

The Contractor shall keep material or waste storage areas clean, well organized, and equipped with enough cleanup supplies for the material being stored. Plastic shall be placed under paving equipment when not in use to catch drips.

MATERIAL MANAGEMENT

Material shall be delivered, used, and stored for this contract in a manner that minimizes or eliminates discharge of material into the air, storm drain systems, or watercourses.

The Contractor shall implement the practices described in this section when taking delivery of, using, or storing the following materials:

A. Hazardous chemicals including:

1. Acids,
2. Lime,
3. Glues,
4. Adhesives,
5. Paints,
6. Solvents, and
7. Curing compounds;

B. Soil stabilizers and binders;
C. Fertilizers;
D. Detergents;

E. Plaster;
F. Petroleum products including:

1. Fuel,
2. Oil, and
3. Grease;

G. Asphalt components and concrete components; and
H. Pesticides and herbicides.

The Contractor shall supply the Material Safety Data Sheet to the Engineer for material used or stored. The Contractor shall keep an accurate inventory of material delivered and stored at the construction site.

Employees trained in emergency spill cleanup procedures shall be present when hazardous materials or chemicals are unloaded.

The Contractor shall use recycled or less hazardous products when practical.

Material Storage

The Contractor shall store liquids, petroleum products, and substances listed in CFR Title 40, Parts 110, 117, and 302 in containers or drums approved by the United States Environmental Protection Agency, and place them in secondary containment facilities.

Secondary containment facilities shall be impervious to the materials stored there for a minimum contact time of 72 hours.

Throughout the rainy season secondary containment facilities shall be covered during non-working days and when precipitation is predicted. Secondary containment facilities shall be adequately ventilated.

The Contractor shall keep the secondary containment facility free of accumulated rainwater or spills. After precipitation, or in the event of spills or leaks, accumulated liquid shall be collected and placed into drums within 24 hours. These liquids shall be handled as hazardous waste in accordance with the provisions in "Hazardous Waste" of these special provisions, unless testing determines them to be nonhazardous.

Incompatible materials, such as chlorine and ammonia, shall not be stored in the same secondary containment facility.

Materials shall be stored in the original containers with the original product labels maintained in legible condition. Damaged or illegible labels shall be replaced immediately.

The secondary containment facility shall have the capacity to contain precipitation from a 24-hour-long, 25-year storm; and 10 percent of the aggregate volume of all containers, or all of the volume of the largest container within the facility, whichever is greater.

The Contractor shall store bagged or boxed material on pallets. Throughout the rainy season, bagged or boxed material shall be protected from wind and rain during non-working days and when precipitation is predicted.

The Contractor shall provide sufficient separation between stored containers to allow for spill cleanup or emergency response access. Storage areas shall be kept clean, well organized, and equipped with cleanup supplies appropriate for the materials being stored.

The Contractor shall repair or replace perimeter controls, containment structures, covers, and liners as needed. Storage areas shall be inspected before and after precipitation, and at least weekly during other times.

Stockpile Management

The Contractor shall reduce or eliminate potential air and water pollution from stockpiled material including soil, paving material, or pressure treated wood. Stockpiles shall be located out of floodplains when possible, and at least 50 feet from concentrated flows of storm water, drainage courses, or inlets unless written approval is obtained from the Engineer.

The Contractor may discontinue adding or removing material for up to 21 days and a stockpile will still be considered active.

The Contractor shall protect active stockpiles with plastic or geotextile cover, soil stabilization measures, or with linear sediment barrier when precipitation is predicted. Active stockpiles of cold mix asphalt concrete shall be placed on an impervious surface and covered with plastic when precipitation is predicted.

The Contractor shall protect inactive soil stockpiles with a plastic or geotextile cover, or with soil stabilization measures at all times during the rainy season. A linear sediment barrier around the perimeter of the stockpile shall also be used. During the non-rainy season soil stockpiles shall be covered and protected with a linear sediment barrier when precipitation is predicted. The Contractor shall control wind erosion during dry weather as provided in Section 10, "Dust Control," of the Standard Specifications.

Stockpiles of portland cement concrete rubble, asphalt concrete (AC), hot mix asphalt (HMA), AC and HMA rubble, aggregate base, or aggregate subbase shall be covered with plastic or geotextile, or protected with a linear sediment barrier at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of cold mix asphalt concrete shall be placed on and covered with impermeable material at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

Stockpiles of pressure treated wood shall be covered with impermeable material and placed on pallets at all times during the rainy season, and when precipitation is predicted during the non-rainy season.

The Contractor shall repair or replace linear sediment barriers and covers as needed or as directed by the Engineer to keep them functioning properly. Sediment shall be removed when it accumulates to 1/3 of the linear sediment barrier height.

WASTE MANAGEMENT

Solid Waste

The Contractor shall not allow litter or debris to accumulate anywhere on the construction site, including storm drain grates, trash racks, and ditch lines. The Contractor shall pick up and remove trash and debris from the construction site at least once a week. The WPCM shall monitor solid waste storage and disposal procedures on the construction site. The Contractor shall provide enough dumpsters of sufficient size to contain the solid waste generated by the project. Dumpsters shall be emptied when refuse reaches the fill line. Dumpsters shall be watertight. The Contractor shall not wash out dumpsters on the construction site. The Contractor shall provide additional containers and more frequent pickup during the demolition phase of construction

Solid waste includes:

A. Brick,
B. Mortar,
C. Timber,
D. Metal scraps,
E. Sawdust,
F. Pipe,
G. Electrical cuttings,
H. Non-hazardous equipment parts,
I. Styrofoam and other packaging materials,
J. Vegetative material and plant containers from highway planting, and
K. Litter and smoking material, including litter generated randomly by the public.

Trash receptacles shall be provided and used in the Contractor's yard, field trailers, and locations where workers gather for lunch and breaks.

Hazardous Waste

The Contractor shall implement hazardous waste management practices when waste is generated on the construction site from the following substances:

A. Petroleum products,
B. Asphalt products,
C. Concrete curing compound,
D. Pesticides,
E. Acids,
F. Paints,
G. Stains,
H. Solvents,
I. Wood preservatives,
J. Roofing tar, and

K. Materials classified as hazardous by California Code of Regulations, Title 22, Division 4.5; or listed in CFR Title 40, Parts 110, 117, 261, or 302.

Nothing in these special provisions shall relieve the Contractor of the responsibility for compliance with Federal, State, and local laws regarding storage, handling, transportation, and disposal of hazardous wastes.

The WPCM shall oversee and enforce hazardous waste management practices. Production of hazardous materials and hazardous waste on the construction site shall be kept to a minimum. Perimeter controls, containment structures, covers, and liners shall be repaired or replaced when damaged.

The Contractor shall have a laboratory certified by the Department of Health Services (DHS) sample and test waste when hazardous material levels are unknown to determine safe methods for storage and disposal.

The Contractor shall segregate potentially hazardous waste from nonhazardous waste at the construction site. Hazardous waste shall be handled, stored, and disposed of as required in California Code of Regulations, Title 22, Division 4.5, Section 66262.34; and in CFR Title 49, Parts 261, 262, and 263.

The Contractor shall store hazardous waste in sealed containers constructed and labeled with the contents and date accumulated as required in California Code of Regulations, Title 22, Division 4.5; and in CFR Title 49, Parts 172, 173, 178, and 179. Hazardous waste containers shall be kept in temporary containment facilities conforming to the provisions in "Material Storage" of these special provisions.

There shall be adequate storage volume and containers shall be conveniently located for hazardous waste collection. Containers of hazardous waste shall not be overfilled and hazardous wastes shall not be mixed. Containers of dry waste that are not watertight shall be stored on pallets. The Contractor shall not allow potentially hazardous waste to accumulate on the ground. Hazardous waste shall be stored away from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall clean water based or oil based paint from brushes or equipment within a contained area and shall not contaminate soil, watercourses, or storm drain systems. Paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste.

The Contractor shall dispose of hazardous waste within 90 days of being generated. Hazardous waste shall be disposed of by a licensed hazardous waste transporter using uniform hazardous waste manifest forms and taken to a Class I Disposal Site. A copy of the manifest shall be provided to the Engineer.

Contaminated Soil

The Contractor shall identify contaminated soil from spills or leaks by noticing discoloration, odors, or differences in soil properties. Soil with evidence of contamination shall be sampled and tested by a laboratory certified by DHS. If levels of contamination are found to be hazardous, the soil shall be handled and disposed of as hazardous waste.

The Contractor shall prevent the flow of water, including ground water, from mixing with contaminated soil by using one or a combination of the following measures:

A. Berms,
B. Cofferdams,
C. Grout curtains,
D. Freeze walls, or
E. Concrete seal course.

If water mixes with contaminated soil and becomes contaminated, the water shall be sampled and tested by a laboratory certified by the DHS. If levels of contamination are found to be hazardous, the water shall be handled and disposed of as hazardous waste.

Concrete Waste

The Contractor shall implement practices to prevent the discharge of portland cement concrete, AC, or HMA waste into storm drain systems or watercourses.

Portland cement concrete, AC, or HMA waste shall be collected at the following locations and disposed of:

A. Where concrete material, including grout, is used;
B. Where concrete dust and debris result from demolition;
C. Where sawcutting, coring, grinding, grooving, or hydro-concrete demolition of portland cement concrete, AC, or HMA creates a residue or slurry; or
D. Where concrete trucks or other concrete-coated equipment is cleaned at the construction site.

Sanitary and Septic Waste

Wastewater from sanitary or septic systems shall not be discharged or buried within the Department right of way. The WPCM shall inspect sanitary or septic waste storage and monitor disposal procedures at least weekly. Sanitary facilities that discharge to the sanitary sewer system shall be properly connected and free from leaks.

The Contractor shall obtain written approval from the local health agency, city, county, and sewer district before discharging from a sanitary or septic system directly into a sanitary sewer system, and provide a copy to the Engineer. The Contractor shall comply with local health agency requirements when using an on-site disposal system.

Liquid Waste

The Contractor shall not allow construction site liquid waste, including the following, to enter storm drain systems or watercourses:

A. Drilling slurries or fluids,
B. Grease-free or oil-free wastewater or rinse water,
C. Dredgings,
D. Liquid waste running off a surface including wash or rinse water, or
E. Other non-storm water liquids not covered by separate permits.

The Contractor shall hold liquid waste in structurally sound, leak proof containers such as:

A. Sediment traps,
B. Roll-off bins, or
C. Portable tanks.

Liquid waste containers shall be of sufficient quantity and volume to prevent spills and leaks. The containers shall be stored at least 50 feet from storm drains, watercourses, moving vehicles, and equipment.

The Contractor shall remove and dispose of deposited solids from sediment traps as provided in "Solid Waste" of these special provisions, unless determined infeasible by the Engineer.

Liquid waste may require testing to determine hazardous material content before disposal.

Drilling fluids and residue shall be disposed of outside the highway right of way. If the Engineer determines that an appropriate location is available, fluids and residue exempt under California Code of Regulations, Title 23, Section 2511(g) may be dried by infiltration and evaporation in a leak proof container. The remaining solid waste may be disposed of as provided in "Solid Waste" of these special provisions.

NON-STORM WATER MANAGEMENT

Water Control and Conservation

The Contractor shall prevent erosion or the discharge of pollutants into storm drain systems or watercourses by managing the water used for construction operations. The Contractor shall obtain the Engineer's approval before washing anything on the construction site with water that could discharge into a storm drain system or watercourse. Discharges shall be reported to the Engineer immediately.

The Contractor shall implement water conservation practices when water is used on the construction site. Irrigation areas shall be inspected and watering schedules shall be adjusted to prevent erosion, excess watering, or runoff. The Contractor shall shut off the water source to broken lines, sprinklers, or valves, and they shall be repaired as soon as possible. When possible, water from waterline flushing shall be reused for landscape irrigation. Paved areas shall be swept and vacuumed, not washed with water.

Construction water runoff, including water from water line repair, shall be directed to areas to infiltrate into the ground and shall not be allowed to enter storm drain systems or watercourses. Spilled water shall not be allowed to escape water truck filling areas. When possible, the Contractor shall direct water from off-site sources around the construction site, or shall minimize contact with the construction site.

Illegal Connection and Discharge Detection and Reporting

The Contractor shall inspect the construction site and the site perimeter before beginning work for evidence of illegal connections, discharges, or dumping. Subsequently, the construction site and perimeter shall be inspected on a frequent, predetermined schedule.

The Contractor shall immediately notify the Engineer when illegal connections, discharges, or dumping are discovered. The Contractor shall take no further action unless directed by the Engineer. Unlabeled or unidentifiable material shall be assumed to be hazardous.

The Contractor shall look for the following evidence of illegal connections, discharges, or dumping:

A. Debris or trash piles,
B. Staining or discoloration on pavement or soils,
C. Pungent odors coming from drainage systems,
D. Discoloration or oily sheen on water,
E. Stains or residue in ditches, channels or drain boxes,
F. Abnormal water flow during dry weather,
G. Excessive sediment deposits,
H. Nonstandard drainage junction structures, or
I. Broken concrete or other disturbances near junction structures.

Vehicle and Equipment Cleaning

The Contractor shall limit vehicle and equipment cleaning or washing on the construction site to that necessary to control vehicle tracking or hazardous waste. Vehicles and equipment shall not be cleaned on the construction site with soap, solvents, or steam until the Engineer has been notified. The resulting waste shall be contained and recycled, or disposed of as provided in "Liquid Waste" or "Hazardous Waste" of these special provisions, whichever is applicable. The Contractor shall not use diesel to clean vehicles or equipment, and shall minimize the use of solvents.

The Contractor shall clean or wash vehicles and equipment in a structure equipped with disposal facilities. If using a structure is not possible, vehicles and equipment shall be cleaned or washed in an outside area with the following characteristics:

A. Located at least 50 feet from storm drainage systems or watercourses,
B. Paved with AC, HMA, or portland cement concrete,
C. Surrounded by a containment berm, and
D. Equipped with a sump to collect and dispose of wash water.

When washing vehicles or equipment with water, the Contractor shall use as little water as possible. Hoses shall be equipped with a positive shutoff valve.

Wash racks shall discharge to a recycle system or to another system approved by the Engineer. Sumps shall be inspected regularly, and liquids and sediments shall be removed as needed.

Vehicle and Equipment Fueling and Maintenance

The Contractor shall fuel or perform maintenance on vehicles and equipment off the construction site whenever practical. When fueling or maintenance must be done at the construction site, the Contractor shall designate a site, or sites, and obtain approval from the Engineer before using. The fueling or maintenance site shall be protected from storm water,shall be on level ground, and shall be located at least 50 feet from drainage inlets or watercourses. The WPCM shall inspect the fueling or maintenance site regularly. Mobile fueling or maintenance shall be kept to a minimum.

The Contractor shall use containment berms or dikes around the fueling and maintenance area. Adequate amounts of absorbent spill cleanup material and spill kits shall be kept in the fueling and maintenance area and on fueling trucks. Spill cleanup material and kits shall be disposed of immediately after use. Drip pans or absorbent pads shall be used during fueling or maintenance unless performed over an impermeable surface.

Fueling or maintenance operations shall not be left unattended. Fueling nozzles shall be equipped with an automatic shutoff control. Vapor recovery fueling nozzles shall be used where required by the Air Quality Management District. Nozzles shall be secured upright when not in use. Fuel tanks shall not be topped-off.

The Contractor shall recycle or properly dispose of used batteries and tires.

Material and Equipment Used Over Water

Drip pans and absorbent pads shall be placed under vehicles or equipment used over water, and an adequate supply of spill cleanup material shall be kept with the vehicle or equipment. Drip pans or plastic sheeting shall be placed under vehicles or equipment on docks, barges, or other surfaces over water when the vehicle or equipment will be idle for more than one hour.

The Contractor shall provide watertight curbs or toe boards on barges, platforms, docks, or other surfaces over water to contain material, debris, and tools. Material shall be secured to prevent spills or discharge into water due to wind.

Structure Removal Over or Adjacent to Water

The Contractor shall not allow demolished material to enter storm water systems or watercourses. The Contractor shall use covers and platforms approved by the Engineer to collect debris. Attachments shall be used on equipment to catch debris on small demolition operations. Debris catching devices shall be emptied regularly and debris shall be handled as provided in "Waste Management" of these special provisions.

The WPCM shall inspect demolition sites within 50 feet of storm water systems or watercourses every day.

Paving, Sealing, Sawcutting, and Grinding Operations

The Contractor shall prevent the following material from entering storm drain systems or water courses:

A. Cementitious material,
B. Asphaltic material,
C. Aggregate or screenings,
D. Grinding or sawcutting residue,
E. Pavement chunks, or
F. Shoulder backing.

The Contractor shall cover drainage inlets and use linear sediment barriers to protect downhill watercourses until paving, sealing, sawcutting, or grinding operations are completed and excess material has been removed. Drainage inlets and manholes shall be covered during the application of seal coat, tack coat, slurry seal, or fog seal.

During the rainy season or when precipitation is predicted, paving, sawcutting, and grinding operations shall be limited to places where runoff can be captured. Seal coat, tack coat, slurry seal, or fog seal operations shall not begin if precipitation is predicted for the application or the curing period. The Contractor shall not excavate material from existing roadways during precipitation.

The Contractor shall vacuum up slurry from sawcutting operations immediately after the slurry is produced. Slurry shall not be allowed to run onto lanes open to public traffic or off the pavement.

The Contractor shall collect residue from portland cement concrete grinding operations with a vacuum attachment on the grinding machine. The residue shall not be left on the pavement or allowed to flow across the pavement.

Material excavated from existing roadways may be stockpiled as provided in "Stockpile Management" of these special provisions if approved by the Engineer. AC or HMA chunks used in embankment shall be placed above the water table and covered by at least one foot of material.

Substances used to coat asphalt trucks and equipment shall not contain soap, foaming agents, or toxic chemicals.

Thermoplastic Striping and Pavement Markers

Thermoplastic striping and preheating equipment shutoff valves shall work properly at all times when on the construction site. The Contractor shall not preheat, transfer, or load thermoplastic within 50 feet of drainage inlets or watercourses. The Contractor shall not fill the preheating container to more than 6 inches from the top. Truck beds shall be cleaned daily of scraps or melted thermoplastic. The Contractor shall not unload, transfer, or load bituminous

material for pavement markers within 50 feet of drainage inlets or watercourses. All pressure shall be released from melting tanks before removing the lid to fill or service. Melting tanks shall not be filled to more than 6 inches from the top. The Contractor shall collect bituminous material from the roadway after marker removal.

Concrete Curing

The Contractor shall not overspray chemical curing compound. Drift shall be minimized by spraying as close to the concrete as possible. Drainage inlets shall be covered before applying curing compound. The Contractor shall minimize the use and discharge of water by using wet blankets or similar methods to maintain moisture when curing concrete.

Concrete Finishing

The Contractor shall collect and dispose of water and solid waste from high-pressure water blasting. Drainage inlets within 50 feet shall be covered before sandblasting. The nozzle shall be kept as close to the surface of the concrete as possible to minimize drift of dust and blast material. Blast residue may contain hazardous material.

Containment structures for concrete finishing operations shall be inspected for damage before each day of use and before predicted precipitation. Liquid and solid waste shall be removed from the containment structure after each work shift.

DEWATERING

Dewatering shall consist of discharging accumulated storm water, ground water, or surface water from excavations or temporary containment facilities. The Contractor shall discharge water within the limits of the project.

Dewatering discharge shall not cause erosion, scour, or sedimentary deposits that impact natural bedding materials.

The Contractor shall conduct dewatering activities in accordance with the Field Guide for Construction Dewatering available at:

http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm

Before dewatering the Contractor shall submit a Dewatering and Discharge Plan to the Engineer in conformance with the provisions in Section 5-1.02, "Plans and Working Drawings," of the Standard Specifications and "Water Pollution Control," of these special provisions. At a minimum, the Dewatering and Discharge Plan shall include the following:

A. A title sheet and table of contents;
B. A description of the dewatering and discharge operations detailing the locations, quantity of water, equipment, and discharge point;
C. The estimated schedule for dewatering and discharge (begin and end dates, intermittent or continuous);

9. CONSTRUCTION SITE MANAGEMENT(Continued)

D. Discharge alternatives such as dust control or percolation; and
E. Visual monitoring procedures with inspection log.

The Contractor shall not discharge storm water or non-storm water that has an odor, discoloration other than sediment, an oily sheen, or foam on the surface and shall notify the Engineer immediately upon discovery.

If water cannot be discharged within the project limits due to site constraints it shall be disposed of in the same manner specified for material in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

PAYMENT

Construction Site Management shall include furnishing all labor, materials, tools, equipment, and incidentals and for doing all the work involved in spill prevention and control, material management, waste management, non-storm water management, and dewatering and identifying, sampling, testing, handling, and disposing of hazardous waste, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer. Full compensation for Construction Site Management shall be considered as included in the item "Water Pollution Control," and no additional compensation will be allowed therefor.

10. DEVELOP WATER SUPPLY

Developing water supply shall conform to the provisions in Section 10, "Dust Control," and Section 17, "Watering," of the Standard Specifications and these special provisions.

Full compensation for applying water for all the various phases of work, including applying water for dust control, all as determined by the Engineer, shall be considered as included in the lump sum price paid for the item "Develop Water Supply," and no additional compensation will be allowed therefor.

11. ROADWAY EXCAVATION

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

The quantity of roadway excavation for payment shall be the "Project Total" quantity for cubic yards of excavation as shown on the plans and as determined by the Engineer.

Subgrade shall be compacted in conformance to the provisions in Section 19-5.03, "Relative Compaction (95 percent)," of the Standard Specifications except that the provisions in the second paragraph of section 19-5.03 will not apply in areas of excavation.

It is anticipated that there will be a surplus of approximately **5,100** cubic yards of excavated material. The surplus excavated material shall become the property of the Contractor and shall be disposed of outside the highway right-of-way in accordance with Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications and as

11. ROADWAY EXCAVATION (Continued)

determined by the Engineer. All excavation quantities are calculated as in situ or "in place" and shall be paid for accordingly. No expansion due to excavation will be considered for excavation payment quantities.

The contract unit price paid per cubic yard for the item "Roadway Excavation," shall include full compensation for furnishing all labor, materials, tools, equipment, incidentals, and for doing all work in removing, hauling and disposal of the excess material as well as grading and compacting the in place material, all as specified herein, and as determined by the Engineer.

12. AGGREGATE BASE

Aggregate base shall be Class 2, 3/4 inch maximum grading, and shall conform to the provisions in Section 26, "Aggregate Bases," of the Standard Specifications and these Special Provisions.

The contract price paid per ton for the item "Aggregate Base" shall include full compensation for doing all the work involved in furnishing, hauling, grading, compacting and moisture conditioning all aggregate base areas referenced on the plans and as determined by the Engineer, and no additional compensation will be allowed therefor.

13. LIQUID ASPHALT PRIME COAT AND SAND COVER

Liquid asphalt prime coat shall be Grade SC-250, or as otherwise determined by the Engineer, and shall conform to the provisions in Section 39, "Liquid Asphalts," and in Section 39-4.02, "Prime Coat and Paint Binder (Tack Coat)," of the Standard Specifications and these special provisions.

At locations where public traffic is being routed over the roadbed to be treated, the prime coat shall not be applied to more than one-half the width of the traveled way at a time, and the remaining width shall be kept free of obstructions and open for use by public traffic until the prime coat first applied is sanded.

Liquid asphalt shall not be applied when the atmospheric temperature is below 50 degrees Fahrenheit.

Full compensation for placing Grade SC-250 liquid asphalt prime coat shall be paid for by the ton and considered as included in the item "Liquid Asphalt, Prime Coat," and no additional compensation will be allowed therefor.

After the application of the liquid asphalt, the surface shall be covered with sand at the time determined by the Engineer and conforming to these special provisions.

Sand cover shall be free from clay and organic material and shall be of such size that from 90 percent to 100 percent will pass through a No. 4 size sieve and not more than 5 percent will pass a No. 200 size sieve and shall be spread uniformly at the approximate rate of 12 to 15 pounds per square yard. The exact spread rate shall be as determined by the Engineer. All loose sand shall be removed from the treated area at a time determined by the Engineer. The treated surface shall be maintained in a smooth and satisfactory condition.

13. LIQUID ASPHALT PRIME COAT AND SAND COVER (Continued)

Full compensation for placing all sand shall be paid for by the ton and considered as included in the item "Sand Cover," and no additional compensation will be allowed therefor.

No adjustment in compensation will be made for any increase or decrease in the quantity of liquid asphalt (prime coat) or sand cover, regardless of the reason for such increase or decrease. The provisions in Section 4-1.03B, "Increased or Decreased Quantities," of the Standard Specifications shall not apply to the contract items "Paving Asphalt Binder," and "Sand Cover," which may be deleted in their entirety.

14. ASPHALT CONCRETE

Asphalt Concrete shall be Type A ½ inch maximum, medium grading and shall conform to the provisions in Section 39, "Asphalt Concrete," of the Standard Specifications and these special provisions.

All leveling courses shall be considered as included with and paid for by the item "Asphalt Concrete" and no additional compensation will be allowed therefor.

The grade of paving asphalt shall be **PG 64-10** or as determined by the Engineer and shall conform to the provisions of Section 92, "Asphalts," of the Standard Specifications.

If the Contractor selects the batch mixing method, asphalt concrete shall be produced by the automatic batch mixing method as provided in Section 39-3.03A(2), "Automatic Proportioning," of the Standard Specifications.

An Asphalt Concrete paint binder shall be required on all existing pavements prior to placing Asphalt Concrete and shall conform to Section 39, "Asphalt Concrete," of the Standard Specifications. Paint binder shall be either paving asphalt grade **PG 64-10** or Asphaltic Emulsion SS-1. The amount of asphalt binder to be mixed with the aggregate shall be determined by the Engineer and shall conform to the provisions of Sections 39-3.03, "Proportioning," and Section 92, "Asphalts," of the Standard Specifications.

Full compensation for furnishing and placing the asphalt paint binder shall be included in the contract price paid per ton for the item "Asphalt Concrete (Type A,1/2" Max. Medium Grading)," and no additional compensation will be allowed therefor.

Longitudinal pavement joints shall be at lanelines established by the Engineer. Driveways and intersections are to be paved as determined by the Engineer. Unless otherwise permitted by the Engineer, mainline paving shall be completed prior to placement of any other paving. Driveway paving shall not be done until placement of the adjacent mainline paving has been completed.

Asphalt Concrete used in the construction of driveways shall be Type A ½" maximum, medium grading. Payment for furnishing and placing the Asphalt Concrete used in the paving of driveways and intersections shall be paid for at the contract price per ton for the item "Asphalt Concrete " and no additional compensation will be allowed therefor.

14. ASPHALT CONCRETE (Continued)

Asphalt Concrete "Miscellaneous Areas" shall conform to the provisions of Section 39-7.01, "Miscellaneous Areas," of the Standard Specifications. Miscellaneous Areas shall include curb ramps at the end of all concrete returns and other areas outside the traveled way which are designated on the plans or areas as determined by the Engineer.

Miscellaneous Asphalt Concrete shall be paid for at the contract price per ton for the item "Asphalt Concrete," and also for placement at the contract price per square yard for the item "Asphalt Concrete (misc. areas)," as included in Section 39-8.02, "Payment," of the Standard Specifications and no additional compensation will be allowed therefor.

In addition to the requirements in Section 39-5.01, "Spreading Equipment," of the Standard Specifications, Asphalt Concrete equipment shall be equipped with automatic screed controls and sensing devices.

When placing the initial mat of Asphalt Concrete, the end of the screed nearest the centerline, shall be controlled by a sensor activated by a ski device not less than twenty nine feet in length. The opposite end of the screed shall be controlled by an automatic transverse slope device set to produce the cross slope to match the existing slope or as otherwise determined by the Engineer.

When paving contiguously with a previously placed mat, the end of the screed adjacent to the previously placed mat shall be controlled by a sensor that responds to the grade of the previously placed mat and will reproduce the grade in the new mat within a 0.02 of a foot tolerance. The opposite end of the screed shall be controlled in the same manner mentioned in the paragraph above.

All paving operations shall be discontinued should the methods and equipment furnished by the Contractor fail to produce a layer of asphalt concrete conforming to the requirements in Section 39-6.03, "Compacting," of the Standard Specifications, these special provisions and as determined by the Engineer. Upon approval by the Engineer, the Contractor may resume paving operations following modifications to the existing equipment, procedures or furnish substitute equipment.

Should the automatic screed controls fail to operate properly during any day's work, the Contractor may use manual control of spreading equipment for the remainder of the day, however, the equipment shall be repaired or replaced with equipment conforming to the requirements in this section before starting another day's work.

The Contractor shall schedule his paving operations such that each layer of Asphalt Concrete is placed on contiguous lanes along the traveled way. At the end of each work shift, the distance between the ends of the layers of asphalt concrete on adjacent lanes shall not be greater than 10 feet nor less than 5 feet. Additional paving shall be placed along the transverse edge at the end of each lane and along the exposed longitudinal edges between adjacent lanes, hand raked and compacted to form temporary conforms. Kraft paper, or other approved bond breaker shall be placed under the conform tapers to facilitate the removal of the taper when paving operations resume.

14. ASPHALT CONCRETE (Continued)

Full compensation for furnishing and placing the Kraft paper or other bond breaking material on the pavement joints shall be included in the contract prices paid for the various items of work and no other compensation will be allowed therefor.

During and after the rolling operations and when ordered by the Engineer, the Asphalt Concrete may be cooled by applying water. Applying water shall conform to the provisions in Section 17, "Watering." of the Standard Specifications. No layer shall be cooled with water unless ordered or permitted by the Engineer.

Full compensation for furnishing and applying water during rolling operations will be considered as included in the contract price paid per ton for "Asphalt Concrete," and no additional compensation will be allowed therefor.

Asphalt Concrete shall be compacted to a relative compaction of not less than 95 percent and shall be finished to the lines and cross sections as shown on the plans and as determined by the Engineer.

Asphalt Concrete shall conform to the straightedge requirements in Section 39-6.03, "Compacting," of the Standard Specifications and these special provisions.

Areas of the top surface of the uppermost layer of Asphalt Concrete that do not meet the specified surface tolerances shall be brought within tolerance by abrasive grinding followed with the application of a fog seal coat on the ground areas. Deviations in excess of 0.03 of a foot which, cannot be brought to the specified tolerances by abrasive grinding shall be corrected by either (1) removal and replacement; or (2) placement of an Asphalt Concrete overlay. The Contractor shall select the corrective method for each area with approval by the Engineer prior to the beginning of corrective work.

Any replacement and/or overlay pavement not meeting the specified tolerances shall be corrected by the aforementioned methods as approved by the Engineer.

The abrasive grinding used to bring the finished surface of the Asphalt Concrete within specified surface tolerances may be expanded in each direction so that the lateral limits of the grinding are at a constant offset from and parallel to the nearest lane line or pavement edge, while the longitudinal grinding limits are normal to the pavement centerline. All ground areas shall be uniform in appearance and rectangular in shape.

Abrasive grinding shall conform to the requirements in the first paragraph and the last four paragraphs in Section 42-2.02, "Construction," of the Standard Specifications.

Full compensation for doing all the work in performing profile checks, supplying all required tools, equipment and materials, performing all corrective work to the pavement surface including abrasive grinding, furnishing and placing Asphalt Concrete for use in removal and replacement as well as the Asphalt Concrete overlay methods of correction shall be borne by the Contractor and no additional payment will be made therefor.

14. ASPHALT CONCRETE (Continued)

Full compensation for placing asphalt concrete shall be paid for by the ton and considered as included in the item "Asphalt Concrete," and no additional compensation will be allowed therefor.

15. CORRUGATED METAL PIPE

Corrugated metal pipe shall be 0.079 inch thick and conform to the provisions in Section 66, "Corrugated Metal Pipe," of the Standard Specifications and these special provisions.

Structure backfill shall have a sand equivalent value of not less than 30.

Culvert joints shall conform to the plans or specifications for standard joints.

The Contractor's attention is directed to the existing corrugated steel culverts shown on the plans and the extensions of those culverts to be installed. The portion of the existing pipe to remain shall be trimmed as determined by the Engineer to provide a clean joint for attachment to the new corrugated steel pipe.

Payment for all excavation required for inlet and outlet ditches for pipe culverts shall be considered as included in the contract price paid per linear foot for such pipe and no additional compensation will allowed therefor.

Furnishing and installing, as well as payment for furnishing and installing, the pipe and couplings shall conform to the provisions in Section 66, "Corrugated Metal Pipe", of the Standard Specifications. Payment for pipe installation shall be by the Linear Foot and no additional compensation will allowed therefor.

16. PLASTIC PIPE (HDPE)

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

Pipe shall be High Density Polyethylene (HDPE) smooth interior wall.

Structure backfill shall have a sand equivalent value of not less than 30.

Items of work, measured as specified in Section 64-1.08, "Measurement", will be paid for at the price per linear foot for the different sizes or types of plastic pipe.

Payment shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in installing the different sizes, or types of plastic pipe, complete in place, including structure excavation and structure backfill and connecting new pipe to existing or new facilities, including concrete collars or concrete tees and reinforcement, as shown on the plans, and as specified in these specifications and these special provisions, and as directed by the Engineer.

17. CONCRETE PEDESTRIAN RAMPS

Concrete returns with curb ramps shall conform to the provisions in Section 73-1 "Concrete Curbs and Sidewalks," of the Standard Specifications and these Special Provisions and as shown on the plans.

The concrete used in the construction of the above mentioned items shall be class 3 and conform to the requirements in these Special Provisions.

17. CONCRETE PEDESTRIAN RAMPS (Continued)

Portland cement concrete facilities shall be constructed at the locations, details and dimensions shown on the attached plan sheets, or as determined by the Engineer, and shall conform to the details and dimensions as shown on the attached plan sheets.

The Contractor shall ensure that any Utility Company relocates and/or adjust all utility boxes to grade, which may be in conflict with the Concrete Pedestrian Ramp, prior to any concrete placement. All costs required to relocate any utility item shall be born by the Utility Company.

No concrete shall be placed until the sub-grade and forms have been reviewed for satisfactory compaction, alignment, and grade, and approved by the Engineer.

No adjustment in compensation will be made for any increase or decrease in the quantity of concrete facilities required, regardless of the reason for such increase or decrease. The provisions in Section 4-1.03B, "Increase or Decrease Quantities", of the Standard Specifications shall not apply to the item of "Concrete Pedestrian Ramp Type A".

The unit price paid for each pedestrian ramp shall include full compensation for furnishing all labor, tools, materials, and equipment, all grading, including backfilling behind sidewalk, placement of aggregate base, and for doing all the work involved in constructing concrete facilities, removal of structural section material, setting forms and grades as shown on the plans, back filling behind pedestrian ramp for final grading, as specified in the Standard Specifications, in these Special Provisions and as shown on the plans or as determined by the Engineer. Pay limits for the item "Concrete Pedestrian Ramp (Type A)" shall be as shown on the plans.

18. CONCRETE SIDEWALK

Concrete Sidewalk conform to the provisions in Section 73-1 "Concrete Curbs and Sidewalks," of the Standard Specifications and these Special Provisions and as shown on the plans.

The unit price paid for the item "Concrete Sidewalk", shall be by the square foot and shall include full compensation for furnishing all labor, tools, materials, and equipment, all grading, compaction, placement of aggregate base, and for doing all the work involved in constructing concrete facilities, setting forms and grades, as specified in the Standard Specifications, in these

Special Provisions and as shown on the plans or as determined by the Engineer. Pay limits for the item "Concrete Sidewalk" shall be as shown on the plans or as directed by the Engineer.

19. CONCRETE CURB & GUTTER

Concrete Curb & Gutter shall conform to the provisions in Section 73-1 "Concrete Curbs and Sidewalks," of the Standard Specifications and these Special Provisions and as shown on the plans.

The unit price paid for the item "Concrete Curb and Gutter", shall be by the linear foot and shall include full compensation for furnishing all labor, tools, materials, and equipment, all grading, placement of aggregate base, and for doing all the work involved in constructing concrete facilities, as specified in the Standard Specifications, in these Special Provisions and as shown on

19. CONCRETE CURB & GUTTER (Continued)

the plans or as determined by the Engineer. Pay limits for the item ”Concrete Curb and Gutter” shall be as shown on the plans or as directed by the Engineer.

20. DRAINAGE INLET (TYPE GOL - CALTRANS D-72 MODIFIED)

The Drainage Inlet (Type GOL- Caltrans D-72 Modified), shall be modified to remove the sweeper section form the original Type GOL Caltrans D-72 detail and utilize only the box section and mirror those dimensions as shown on the opposite side of the sweeper section, as per the Standard Plans Dated May, 2006, Standard Plans Dated and accompanied by all associated plan updates and amendments. All material quality and grade standards shall apply.

Full compensation for furnishing all the labor, materials, tools, equipment and incidentals needed to construct the Drainage Inlet (Type GOL- Caltrans D-72 Modified), all complete and in-place as specified herein or as shown on the plans and as determined by the Engineer, shall be considered as included in the contract pay quantity for the item “Drainage Inlet (Type GOL- Caltrans D-72 Modified)” and no additional payment will be allowed therefor.

21. DRAINAGE INLET S-8 SERIES

All S-8 series drainage inlets shall be installed in accordance with the Butte County Standards S-8 series. All inverts shall be constructed to the grades and material quantity and quality as shown on the plans and as directed by the Engineer.

The contract price paid for constructing all S-8 series drainage inlets shall include full compensation for furnishing all the labor, materials, tools, and equipment needed and shall be included in the contract items “Drainage Inlet(Type GO, Butte Co. Std. S-8)” and “Drainage Inlet(Type GO, Butte Co. Std. S-8-C)”, and no additional compensation will be allowed therefore.

22. STRAINER PLATES

Strainer Plates shall be placed at the designated inverts within the drop inlets as shown on the plans, and as directed by the Engineer. An 18” diameter Strainer shall be placed over the invert out for the upstream S-8 drop inlet of Leach Trench #1. A 36” Diameter Strainer Plate shall be placed over the invert out for the Drainage Inlet Type GOL (Caltrans D-72 Modified) just upstream of Leach Trench #2. Fastening hardware shall be “Red Head” concrete fasteners or approved equal. The diameter of fasteners shall be within 1/8” of mounting hole diameter.

Full compensation for furnishing all the labor, materials, tools, equipment and incidentals needed to construct the various Strainer Plates, all complete and in-place as specified herein, as shown on the plans, and as determined by the Engineer, shall be considered as included in the contract final pay quantity for the item “Leach Trench” for the respective size of strainer plate and no additional payment will be allowed therefor.

23. MANHOLES

All Manholes shall be installed in accordance with the Butte County Standards S-19. Manhole rims and covers shall per Butte County Standard S-24 and shall be adjusted to the finished grade as shown on the plans and as directed by the Engineer.

23. MANHOLES (Continued)

The contract price paid for constructing all manholes and adjusting the rims to finished grade, shall include full compensation for furnishing all the labor, materials, tools, and equipment needed and shall be included in the contract item "Manhole(4-foot Diameter, Butte Co. Std S-19)", and no additional compensation will be allowed therefor.

24. LEACH TRENCH

Leach Trenches shall be installed per Butte County Standard Detail S-38, and to the dimensions and specifications as shown on the plans including plastic perforated pipe. Drain rock shall be 1-1/2" min, washed rock, as shown on the plans. Drain rock shall be wrapped in filter fabric on all sides, top, and bottom with minimum 1-foot overlap at the seams. Filter fabric shall conform to the provisions in Section 88-1.03 of the Standard Specifications and these Special Provisions. Excavation shall be completed using the latest standards for shoring to protect all involved in the trenching process.

Full compensation for furnishing all the labor, materials, tools, equipment and incidentals needed to construct Leach Trenches, all complete and in-place as specified herein, as shown on the plans including plastic perforated pipe, and as determined by the Engineer, shall be considered as included in the contract final pay quantity for the item "Leach Trench" and no additional payment will be allowed therefor.

25. CLEANOUTS

All Cleanouts shall be installed in accordance with the Butte County Standards S-22 & S-23. Cleanout rims and covers shall be adjusted and formed to match the new top of sidewalk grade as shown on the plans and as directed by the Engineer.

The contract price paid for constructing all cleanout assemblies shall include full compensation for furnishing all the labor, materials, tools, and equipment needed and shall be included in the contract item "Cleanouts", and no additional compensation will be allowed therefore.

26. GUARD PANEL

A standard Butte County S-30 Guard Panel shall be constructed at the newly constructed terminus of Speedway Avenue, as shown on the plans and as directed by the Engineer.

Full compensation for furnishing all the labor, materials, tools, equipment and incidentals needed to construct the Guard Panel, all complete and in-place as specified herein, as shown on the plans, and as determined by the Engineer, shall be considered as included in the contract final pay quantity for the item "Guard Panel" and no additional payment will be allowed therefor.

27. THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS

Thermoplastic traffic stripes (traffic lines) and pavement markings shall conform to the provisions in Sections 84-1, "General," and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings," of the Standard Specifications and these special provisions.

Thermoplastic material for traffic stripes shall be applied at a minimum thickness of 0.080 inch.

27. THERMOPLASTIC TRAFFIC STRIPES AND PAVEMENT MARKINGS (Continued)

Measurement of payment for all striping shall be paid for in equivalent 4" width per lineal foot.

Grinding to eliminate existing conflicting striping shall be paid for in the Item "Clearing & Grubbing".

Thermoplastic lettering stencils shall have the same dimensions as the "Hawkins Traffic Safety Supply" M8H Series. A copy of the stencil dimensions is available for review at the office of the Director of Public Works. Traffic arrows shall be of the dimensions pursuant to those shown in the State of California, Department of Transportation's Standard Plans.

Measurement of payment for the contract price paid per square foot of "Thermoplastic Pavement Markings" shall be the square footage for the completed markings as shown in the aforementioned Standard Plans.

The State Specification Number for glass beads in Section 84-2, "Materials," of the Standard Specifications is amended to read "8010-21C-22 (Type II)".

28. PAVEMENT MARKERS (RETRO-REFLECTIVE)

Pavement markers shall conform to the provisions in Section 85, "Pavement Markers," of the Standard Specifications and these special provisions. However, the second paragraph in Section 85-1.02, "Type of Markers," of the Standard Specifications shall not apply. Certificates of compliance shall be furnished for pavement markers as specified in "Pre-qualified and Tested Signing and Delineation Materials" elsewhere in these special provisions.

Pavement markers shall be "3M Series 290" or better. Adhesive shall be "Crafco Hot-Applied Flexible Pavement Marker Adhesive" (Part No. 34270) or approved equal.

When bituminous adhesive is used for pavement marker placement, traffic control during placement operations shall conform to the requirements of "Traffic Control System For Lane Closure," of these special provisions.

The unit price paid for Pavement Markers shall be for each marker, and includes full compensation for furnishing all labor, tools, materials, and equipment, and for doing all the work involved in installing the markers and shall be included in the item "Pavement Markers (Retro-Reflective)" and no additional compensation will be allowed therefor.

29. TEMPORARY STRAW MULCH

GENERAL

Summary

This work includes applying, maintaining, and removing temporary tacked straw. Tacked straw uses a mixture of tackifier, fiber, and water to stabilize active and nonactive disturbed soil areas.

The SWPPP must describe and include the use of temporary tacked straw as a water pollution control practice for soil stabilization.

Submittals

At least 5 business days before applying tacked straw, submit:

1. Material Safety Data Sheet for the tackifier.

2. Product label describing the tackifier as an erosion control product.
3. List of pollutant indicators and potential pollutants for the use of temporary tacked straw. Pollutant indicators are described under "Sampling and Analysis Plan for Non-Visible Pollutants" in the Preparation Manual.
4. Determination of acute and chronic toxicity for aquatic organisms conforming to EPA methods for the tackifier.
5. Composition of ingredients including chemical formulation.

Submit a Certificate of Compliance as specified in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for:

1. Tackifier
2. Fiber

Quality Control and Assurance

Retain and submit records of temporary tacked straw applications including:

1. Compliance with specified rates
2. Application area
3. Application time
4. Quantity

MATERIALS

Tackifier

The tackifier must be:

1. Nonflammable
2. Nontoxic to aquatic organisms
3. Free from growth or germination inhibiting factors
4. Either a plant-based product or a polymeric-emulsion blend

Tackifier classified as a plant-based product must be:

1. A natural high molecular weight polysaccharide
2. A high viscosity hydrocolloid that is miscible in water
3. Functional for at least 180 days
4. Labeled as either guar, psyllium, or starch

Guar must be:

1. A guar gum based product derived from the ground endosperm of the guar plant, cyanmopsis tetragonolobus
2. Treated with dispersant agents for easy mixing
3. Able to be diluted at the rate of 1 to 5 pounds per 100 gallons of water

Psyllium must be:

1. Made of the finely ground muciloid coating of plantago ovata or plantago ispaghula seeds

2. Able to dry and form a firm but rewettable membrane

Starch must be a non-ionic, water-soluble granular material derived from corn, potato, or other plant-based source.

Tackifier classified as polymeric emulsion blend must be:

1. A liquid or dry powder formulation
2. Anionic with a residual monomer content that is at most 0.05 percent by weight
3. Functional for at least 180 days
4. A prepackaged product labeled as containing one of the following as the primary active ingredient of the polymeric emulsion blend:

   4.1 Acrylic copolymers and polymers
   4.2 Polymers of methacrylates and acrylates
   4.3 Copolymers of sodium acrylates and acrylamides
   4.4 Polyacrylamide (PAM) and copolymer of acrylamide
   4.5 Hydrocolloid polymers

Fiber

Fiber must be wood fiber, cellulose fiber, alternate fiber, or a combination of these fibers as specified. Fiber must be:

1. Free from lead paint, printing ink, varnish, petroleum products, seed germination inhibitors, or chlorine bleach
2. Free from synthetic or plastic materials
3. At most 7 percent ash

If wood fiber is specified, wood fiber must be:

1. Long strand, whole wood fibers, thermo-mechanically processed from clean, whole wood chips
2. Not made from sawdust, cardboard, paper, or paper byproducts
3. At least 25 percent of fibers 3/8 inch long
4. At least 40 percent held on a No. 25 sieve

If cellulose fiber is specified, cellulose fiber must be made from natural or recycled pulp fiber, such as wood chips, sawdust, newsprint, chipboard, corrugated cardboard, or a combination of these materials.

If alternate fiber is specified, alternate fiber must be:

1. Long strand, whole natural fibers made from clean straw, cotton, corn, or other natural feed stock
2. At least 25 percent of fibers 3/8 inch long
3. At least 40 percent held on a No. 25 sieve

Coloring Agent

Use a biodegradable, nontoxic coloring agent free from copper, mercury, and arsenic to ensure the tacked straw contrasts with the application area.

Straw

Straw must comply with Section 20-2.06, "Straw," of the Standard Specifications and be:

1. Rice, wheat, or barley. Wheat and barley straw must be derived from irrigated crops.
2. Free of plastic, glass, metal, rocks, and refuse or other deleterious material.

CONSTRUCTION

Application

Apply temporary straw mulch when an area is ready to receive temporary erosion control under "Temporary Straw Mulch"

The quantity of tackifier in the mixture must be as recommended by the manufacturer.

The ratio of water to fiber and tackifier in the mixture must be as recommended by the manufacturer. The proportions of various erosion control materials may be changed by the Engineer to meet field conditions.

Apply tacked straw materials in separate applications in the following sequence:

1. Apply straw:

   1.1. At the rate of 2 tons per acre (slope measurement)
   1.2. To extend to the edge of retaining walls, dikes, paving and to within 4 feet from the flow line of paved and unpaved drainage ditches
   1.3. Using mechanical, pneumatic, or manual methods

2. Apply tackifier and fiber mixture:

   2.1. At application rate indicated:

Material	Application Rate lbs/acre
Wood Fiber	2000
Cellulose Fiber	100
Alternate Fiber	0

   2.2. During dry weather or at least 24 hours before predicted rain.

Do not apply tacked straw if:

1. Water is standing on or moving across the soil surface

29. TEMPORARY STRAW MULCH (Continued)

2. Soil is frozen
3. Air temperature is below 40 ºF during the tackifier curing period unless allowed by the manufacturer and approved by the Engineer

Do not over-spray tacked straw onto the traveled way, sidewalks, lined drainage channels, or existing vegetation.

Maintenance

Reapply tacked straw within 24 hours of discovering visible erosion, unless the Engineer approves a longer period.

Temporary tacked straw disturbed or displaced by the Contractor's vehicles, equipment, or operations must be reapplied at the Contractor's expense.

Cleanup, repair, removal, disposal, or replacement due to improper installation or the Contractor's negligence are not included in the cost for performing maintenance.

Removal

Remove tacked straw by mechanically blending it into the soil with track laying equipment, disking, or other approved method.

MEASUREMENT AND PAYMENT

Temporary tacked straw is measured by the square yard from measurements along the slope of the areas covered by the tacked straw.

The contract item price paid per square yard for temporary straw mulch includes full compensation for furnishing all labor, materials (including straw, tackifier, and fiber), tools, equipment, and incidentals, and for doing all the work involved in applying temporary tacked straw, complete in place, including removal of tacked straw, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

30. TEMPORARY FIBER ROLLS

GENERAL

Summary

This work includes constructing, maintaining, and removing temporary fiber roll.
The SWPPP must describe and include the use of temporary fiber roll as a water pollution control practice for sediment control.

Submittals

Submit a Certificate of Compliance as specified in Section 6-1.07, "Certificates of Compliance" of the Standard Specifications for fiber roll.

30. TEMPORARY FIBER ROLLS (Continued)

MATERIALS

Fiber Roll

Fiber roll must:

1. Last for at least one year after installation
2. Be Type 1 or Type 2

If specified, Type 1 fiber roll must be:

1. Made from an erosion control blanket:

    1.1. Classified by the Erosion Control Technology Council (ECTC) as ECTC 2D
    1.2. With a Universal Soil Loss Equation (USLE) C-Factor of not more than 0.20 at a 2:1 (horizontal:vertical) slope
    1.3. Capable to withstand a maximum shear stress of 1.75 pounds per square foot under ASTM D 6460
    1.4. With a minimum tensile strength of 75 pounds per foot under ASTM D 5035
    1.5. With top and bottom surfaces covered with extruded photodegradable plastic netting or lightweight non-synthetic netting
    1.6. That complies with one of the following:

        1.6.1. Double net straw and coconut blanket with 70 percent straw and 30 percent coconut fiber
        1.6.2. Double net excelsior blanket with 80 percent of the wood excelsior fibers being 6 inches or longer

2. Rolled along the width
3. Secured with natural fiber twine every 6 feet and 6 inches from each end
4. Finished to be either:

    4.1. From 8 to 10 inches in diameter, from 10 to 20 feet long, and at least 0.5 pounds per linear foot
    4.2. From 10 to 12 inches in diameter, at least 10 feet long, and at least 2 pounds per linear foot

If specified, Type 2 fiber roll must:

1. Be filled with rice or wheat straw, wood excelsior, or coconut fiber

2. Be covered with a photodegradable plastic netting or a biodegradable jute, sisal, or coir fiber netting
3. Have the netting secured tightly at each end
4. Be finished to be either:

    4.1. From 8 to 10 inches in diameter, from 10 to 20 feet long, and at least 1.1 pounds per linear foot

4.2. From 10 to 12 inches in diameter, at least 10 feet long, and at least 3 pounds per linear foot

Wood Stakes

Wood stakes must be:

1. Untreated fir, redwood, cedar, or pine and cut from sound timber

2. Straight and free of loose or unsound knots and other defects which would render the stakes unfit for use
3. Pointed on the end to be driven into the ground

For fiber roll, wood stakes must be at least:

1. 1" x 1" x 24" in size for Type 1 installation
2. 1" x 2" x 24" in size for Type 2 installation

Rope

For Type 2 installation, rope must:

1. Be biodegradable, such as sisal or manila
2. Have a minimum diameter of 1/4 inch

CONSTRUCTION

Before placing fiber roll, remove obstructions including rocks, clods, and debris greater than one inch in diameter from the ground.

If fiber roll is to be placed in the same area as erosion control blanket, install the blanket before placing the fiber roll. For other soil stabilization practices such as hydraulic mulch or compost, place the fiber roll and then apply the soil stabilization practice.

Place fiber roll on slopes at the following spacing unless the plans show a different spacing:

1. 10 feet apart for slopes steeper than 2:1 (horizontal:vertical)
2. 15 feet apart for slopes from 2:1 to 4:1 (horizontal:vertical)
3. 20 feet apart for slopes from 4:1 to 10:1 (horizontal:vertical)
4. 50 feet apart for slopes flatter than 10:1 (horizontal:vertical)

Place fiber roll approximately parallel to the slope contour. For any 20 foot section of fiber roll, do not allow the fiber roll to vary more then 5 percent from level.

Type 1 and Type 2 fiber roll may be installed using installation method Type 1, Type 2, or a combination:

For installation method Type 1, install fiber roll by:

1. Placing in a furrow that is from 2 to 4 inches deep
2. Securing with wood stakes every 4 feet along the length of the fiber roll
3. Securing the ends of the fiber roll by placing a stake 6 inches from the end of the roll
4. Driving the stakes into the soil so that the top of the stake is less then 2 inches above the top of the fiber roll

For installation method Type 2, install fiber roll by:

1. Securing with rope and notched wood stakes.
2. Driving stakes into the soil until the notch is even with the top of the fiber roll.
3. Lacing the rope between stakes and over the fiber roll. Knot the rope at each stake.
4. Tightening the fiber roll to the surface of the slope by driving the stakes further into the soil.

MAINTENANCE

Maintain temporary fiber roll to provide sediment holding capacity and to reduce runoff velocities.

Remove sediment deposits, trash, and debris from temporary fiber roll as needed or when directed by the Engineer. If removed sediment is deposited within project limits, it must be stabilized and not subject to erosion by wind or water. Trash and debris must be removed and disposed of as specified in Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

Maintain temporary fiber roll by:

1. Removing sediment from behind the fiber roll when sediment is 1/3 the height of the fiber roll above ground
2. Repairing or adjusting the fiber roll when rills and other evidence of concentrated runoff occur beneath the fiber roll.
3. Repairing or replacing the fiber roll when they become split, torn, or unraveled
4. Adding stakes when the fiber roll slump or sag
5. Replacing broken or split wood stakes

Repair temporary fiber roll within 24 hours of discovering damage unless the Engineer approves a longer period.

If your vehicles, equipment, or activities disturb or displace temporary fiber roll, repair temporary fiber roll at your expense.

The Department does not pay maintenance costs for cleanup, repair, removal, disposal, or replacement due to improper installation or your negligence.

REMOVAL

When the Engineer determines that temporary fiber roll is not required, they must be removed and disposed of under Section 7-1.13, "Disposal of Material Outside the Highway Right of Way," of the Standard Specifications.

30. TEMPORARY FIBER ROLLS (Continued)

Ground disturbance, including holes and depressions, caused by the installation and removal of the temporary fiber roll must be backfilled and repaired under Section 15-1.02, "Preservation of Property," of the Standard Specifications.

MEASUREMENT AND PAYMENT

Temporary fiber roll is measured by the linear foot along the centerline of the installed roll. Where temporary fiber roll is joined and overlapped, the overlap is measured as a single installed roll.

The contract price paid per linear foot for temporary fiber roll includes full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the temporary fiber roll, complete in place, including removal of materials, cleanup and disposal of retained sediment and debris, and backfilling and repairing holes, depressions and other ground disturbance, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer

31. STREET SWEEPING

Street sweeping shall be conducted where sediment is tracked from the job site onto paved roads, as described in the approved Storm Water Pollution Prevention Plan (SWPPP) in accordance with “Water Pollution Control” of these special provisions, and as directed by the Engineer.

Street sweeping shall be one of the water pollution control practices for sediment control. The SWPPP shall include the use of street sweeping. Street sweeping shall be performed in accordance with Section 4, SC-7 in the Construction Site Best Management Practices Manual of the Caltrans Storm Water Quality Handbooks.

The number of street sweepers shall be as designated in the approved SWPPP. The contractor shall maintain at least one sweeper on the site at all times during the period that sweeping work is required. Sweepers shall be self- loading, motorized, and shall have spray nozzles. Sweepers may include a vacuum apparatus.

Street sweeping shall start at the beginning of clearing and grubbing and shall continue until completion of the project, or as directed by the Engineer.

Street Sweeping shall be performed immediately after soil disturbing activities occur or offsite tracking of material is observed. Street sweeping shall be performed so that dust is minimized. If dust generation is excessive or sediment is pickup is ineffective as determined by the Engineer, the use of water vacuum will be required.

At the option of the Contractor, collected material may be temporarily stockpiled in accordance with the approved SWPPP. Collected material shall be disposed of at least once per week. Material collected during street sweeping operations shall be disposed of on in conformance with Section 7-1.13 “Disposal of Material Outside of The Highway Right-of-Way” of the Standard Specifications.

31. STREET SWEEPING (Continued)

The contract lump sum price paid for "Street Sweeping" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in street sweeping, including disposal of collected material, as shown on the plans, as specified in the Standard Specifications, these special provisions, and as directed by the Engineer.

32. WIND EROSION CONTROL

Wind erosion control shall be used to minimize blowing dust and erosion control for any stockpiling including trench stockpiling for storm drains. Wind erosion control shall be accomplished by applying either water or dust palliative, or both, in conformance with Section 10 "Dust Control" of the Standard Specifications, and as determined by the Engineer.

The contract lump sum price paid for "Wind Erosion Control" shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals and for doing all work involved in "Wind Erosion Control", including watering and placing dust palliative, as shown on the plans, as specified in the Standard Specifications, as shown in these special provisions, and as directed by the Engineer.

33. FINAL 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. The areas to receive the erosion control (Type D), but not limited to, are shown on sheet 11 of 11 of the plans and represent a total area of approximately 0.39 acre. Areas disturbed for contractor staging and storage shall be hydro seeded at the contractor's expense and are not included in the 0.38 acre. The areas shown are for estimating purposes only, the exact amount and locations shall be as determined by the Engineer.

If the slope on which the erosion control is to be placed is finished during the month of October or later, 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 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.

33. FINAL EROSION CONTROL (TYPE D) (Continued)

Seed shall be delivered to the project site in unopened separate containers with the seedtag attached. Containers without a seed tag attached will not be accepted. A sample of approximately 30 g 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 2 seed inoculation.

D. Industrial-inoculated seed shall be sown within 180 calendar days after inoculation.

1. Legume seeds shall consist of genetic material collected from Central Valley or Foothills of Northern California below 2000 feet. Legume seed shall consist of the following:

LEGUME SEED

Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre (Slope Measurement)
*Lotus purshianus (Pershings Lotus)	70	5
*Escholzia Californica (California Poppy)	40	1
*Trifolium wildenovii (Tomcat Clover)	40	8

Non-Legume Seed

Non-Legume seeds shall consist of genetic material collected from Central Valley or Foothills of Northern California below 2000 feet. Non-legume seed shall consist of the following:

NON-LEGUME SEED

Botanical Name (Common Name)	Percent Germination (Minimum)	Pounds Pure Live Seed Per Acre (Slope Measurement)
*Leymus triticoides (Creeping Wildrye)	70	12
*Bromus carinatus (California Brome)	70	9
*Elymus glaucus (Blue Wildrye)	70	9
*Nassella pulchra (Purple Needlegrass)	70	9

Commercial Fertilizer

Commercial fertilizer shall conform to the provisions in Section 20-2.02, "Commercial Fertilizer," of the Standard Specifications and shall have a guaranteed chemical analysis of 20 percent nitrogen, 11 percent phosphoric acid and 12 percent water soluble potash.

Straw

Straw shall conform to the provisions in Section 20-2.06, "Straw," of the Standard Specifications and these special provisions. Straw shall be derived from rice and shall be applied at the rate of two (2) tons/acre.

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 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 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 amoisture content of 35 percent. Moist samples of compost on an as received basis shall be dried

in an oven at a temperature between 220°F and 240°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 may 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	Pounds Per Acre (Slope Measurement)
Legume Seed	22
Non-Legume Seed	39
Fiber	357
Commercial Fertilizer	268

Material	Cubic Feet Per Acre (Slope Measurement)
Compost	47

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 2 ton per acre based on slope measurements. Incorporation of straw will not be required. Straw shall be distributed evenly without clumping or piling.

33. FINAL EROSION CONTROL (TYPE D) (Continued)

The following mixture in the proportions indicated shall be applied with hydro-seeding equipment

Material	Pounds Per Acre (Slope Measurement)
Fiber	357
Commercial Fertilizer	268
Stabilizing Emulsion (Solids)	156

Material	Cubic Feet Per Acre (Slope Measurement)
Compost	47

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

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in furnishing and applying compost, stabilizing emulsion, fertilizer, seed and straw for final erosion control, complete in place, as specified in the Standard Specifications, these special provisions, and as determined by the Engineer shall be included in the contract lump sum price paid for the item "Final Erosion Control (Type'D')".

34. FIBER ROLLS

Fiber rolls shall conform to these special provisions. Fiber Rolls are to be installed on all areas where erosion control (type D) is being placed and as determined by the Engineer.

Materials

Fiber rolls shall consist of one of the following:

A. Fiber rolls shall be constructed on the project site with manufactured blankets consisting of one or a combination of wood excelsior, rice, wheat or coconut fibers. The blanket shall measure approximately 12 ft. wide by 85 ft. to 100 ft. in length. Wood excelsior material shall have individual fibers, 80 percent of which shall be 6 inches or longer in fiber length. The blanket shall have a photodegradable plastic netting. The blanket shall be rolled on the blanket's width and secured with jute twine spaced 6 feet apart along the roll for the full length and 6 inches from each end of the individual rolls.

34. FIBER ROLLS (Continued)

The blanket shall be rolled so that the netting is on the outside of the finished roll. The finished roll diameter shall be a minimum of 7 inches and a maximum of 9 inches and shall weigh not less than 2.5 pounds/yard.

B. Fiber rolls shall be pre-manufactured rice or wheat straw, wood excelsior or coconut fiber rolls encapsulated within a photodegradable plastic netting. Each roll shall be a minimum of 7 inches and a maximum of 9 inches in diameter and 23 ft. to 30 ft. in length and shall weigh not less than 2.5 pounds/yard. The netting shall be ultraviolet (UV) degradable plastic. The netting shall have a minimum durability of one year after installation. The netting shall be secured tightly at each end of the individual rolls.

C. Stakes shall be fir or pine and shall be a minimum of 1 inch x 1 inch x 2 ft. in length. Metal stakes may be used as an alternative. The Contractor shall submit a sample of the metal stake to the Engineer prior to installation. The tops of the metal stakes shall be bent over at a 90-degree angle. No additional compensation will be allowed for the use of a metal stake.

Installation

Fiber rolls shall be joined tightly together to form a single linear roll that is installed approximately parallel to the slope contour. Fiber rolls shall be installed prior to the application of other erosion control materials.

Furrows shall be constructed at a slight angle to the slope contour , to a depth of 2 inches to 4 inches, and at a sufficient width to hold the fiber rolls.

Rolls shall be installed at contour intervals of 6 ft. of elevation in the furrows with the first row installed 5 ft. above the toe of slope. Individual rolls shall be placed with adjacent ends butted firmly to each other to create a continuous linear roll.

Stakes shall be installed 3 ft. apart along the total length of the rolls and 5 inches from the end of each individual roll. Stakes shall be driven flush or a maximum of 2 inches above the roll.

Measurement and Payment

Full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in installing fiber rolls, complete in place, including stakes, as specified in the Standard Specifications, these special provisions and as determined by the Engineer shall be included in the contract lump sum price paid for the item “Final Erosion Control (Type’D’)”

35. FINISHING ROADWAY

Finishing roadway shall conform to the provisions in Section 22, "Finishing Roadway," of the Standard Specifications and these Special Provisions.

35. FINISHING ROADWAY (Continued)

Full compensation for finishing roadway shall be considered as included in the prices paid for the various contract items of work and no additional compensation will be allowed therefore.

36. REGULATORY AGENCIES

The Contractor shall conform to the provisions and requirements of the following agencies:

The Contractor shall fully inform himself of all rules, regulations, agreements, mitigation, and conditional requirements that may govern his operations for the project prior to the commencement of any activities on the site.

Permits and Other Mitigation Agreements – Appendix A

1. **401 Clean Water Act Permit and Conditions**
2. **404 Army Corp. of Engineers Permit and Conditions.**
3. **1600 Fish & Game Stream Alteration Permit and Conditions**
4. **Fish & Wildlife Service Permit & Conditions**
5. **Initial Study & Approved Mitigated Negative Declaration**

37. REFERENCED STANDARDS

Except as otherwise indicated, the current editions of the following Specifications and Standards apply to the WORK of this Section:

SSPC Steel Structures Painting Council, 4516 Henry Street, Pittsburgh, PA 15213.

NACE NACE International, the Corrosion Society, 1440 South Creek Drive, Houston, TX 77084.

ASTM American Society for Testing Materials, 100 Barr Harbor Drive, West Conshohocken, PA 19428-2959.

ANSI/AWWA American Water Works Association, 6666 West Quincy Ave., Denver, CO 80235.

TT-S230 type II Federal Specifications

29 CFR Codes of Federal Regulations Title 29, Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

1926.62.1 Safety and Health Regulations for Construction, Lead.

1926.502.1 Fall protection systems criteria and practices.

Occupational Safety and Health Standards.

40 CFR (Code of Federal Regulations) Title 40, Environmental Protection Agency.

37. <u>REFERENCED STANDARDS</u> (Continued)

50 National primary and secondary ambient air quality standards

60 Standards of performance for new stationary sources.

262 Standards applicable to generators of hazardous waste.

263 Standards applicable to transporters of hazardous waste.

264 Standards for owners and operators of hazardous waste treatment, storage, and disposal facilities.

265 Interim status standards for owners and operators of hazardous waste treatment, storage, and disposal facilities.

268 Land disposal restrictions.

300 National Oil and Hazardous Substances Pollution Contingency Plan.
302 Designation, reportable quantities, and notification.

EPA Environmental Protection Agency

Method 1311 Toxicity Characteristic Leaching Procedure (TCLP).

SW 846 Test Methods for Evaluating Solid Waste Physical/Chemical Methods