

**DEPARTMENT OF TRANSPORTATION**  
DIVISION OF ENGINEERING SERVICES  
OFFICE ENGINEER, MS 43  
1727 30<sup>TH</sup> STREET  
P.O. BOX 168041  
SACRAMENTO, CA 95816-8041  
FAX (916) 227-6214  
TTY (916) 227-8454



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**\*\* WARNING \*\* WARNING \*\* WARNING \*\* WARNING \*\***

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April 13, 2007

04-Ala-92,880-7.8/10.9,25.1/28.3  
04-016014

Addendum No. 2

Dear Contractor:

This addendum is being issued to the contract for construction on State highway in ALAMEDA COUNTY IN HAYWARD ON ROUTE 880 FROM 0.3 KM NORTH OF TENNYSON ROAD OVERCROSSING TO 0.5 KM SOUTH OF WINTON AVENUE OVERCROSSING AND ON ROUTE 92 FROM 0.1 KM WEST OF MOUNT EDEN OVERHEAD TO 0.2 KM EAST OF SANTA CLARA STREET.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on May 23, 2007, instead of May 2, 2007.

This addendum is being issued to set a new bid opening date as shown herein, and to revise the Project Plans, the Notice to Contractors and Special Provisions, and the Proposal and Contract.

Project Plan Sheets 1, 4, 22, 24, 29, 32, 41, 65, 84, 105, 119, 132, 145, 147, 149, 163, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 183, 184, 185, 187, 188, 192, 204, 205, 206, 207, 208, 209, 210, 211, 213, 214, 215, 216, 217, 218, 219, 220, 221, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 237, 239, 240, 241, 243, 244, 245, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 301, 305, 306, 307, 310, 314, 316, 317, 318, 319, 339, 342, 343, 344, 347, 348, 350, 351, 353, 354, 355, 356, 357, 359, 360, 364, 365, 366, 369, 370, 372, 373, 376, 377, 383, 391, 394, 397, 398, 400, 401, 404, 405, 408, 410, 411, 414, 417, 419, 426, 429, 434, 437, 440, 442, 443, 448, 452, 479, 480, 485, 490, 496, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 539, 540, 542, 545, 548, 549, 552, 566, 567, 581, 584, 591, 594, 596, 600, 659, 671, 672, 683, 684, 689, 737, 738, 739, 745, 748, 751, 757, 758, 759, 760, 779, 806, 996, 1028, 1030, 1031, 1106, 1108, 1109, 1110, 1111, 1112, 1113, 1123, 1140, 1142, 1193, 1196, 1197, 1211, 1213 and 1217 are revised. Half-sized copies of the revised sheets are attached for substitution for the like-numbered sheets.

Project Plan Sheets 246A, 276A, 276B, 503A, 503B, 503C 503D, 503E, 503F, 503G, 550A, 551A, 552A, and 614A are added. Half-sized copies of the added sheets are attached for addition to the project plans.

Project Plan Sheets 67, 387, 388, 563, 660, 1058, 1059, 1060, 1061, 1062, 1063, 1064, 1065, 1066, 1067, 1068, 1069, 1070 and 1071 are deleted.

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In the Notice to Contractors and Special Provisions, in the "IMPORTANT SPECIAL NOTICES," the third Special Notice is revised as follows:

"A + B SPECIAL NOTICE

The bidder's attention is directed to Section 2, "Proposal Requirements and Conditions," Section 3, "Award and Execution of Contract," and Section 4, "Beginning of Work, Time of Completion and Liquidated Damages," in the special provisions. In addition to the item prices and totals, the proposal shall set forth the number of working days bid to complete the work on the contract. Bids will be compared on the basis of the sum of the item totals on the Engineer's Estimate for the work to be done (TOTAL BID (A)) plus the product of the number of working days bid to complete the work and the cost per day shown on the Engineer's Estimate (TOTAL BID (B)). The lowest bid will be determined on the basis of the "Total Basis for Comparison of Bids (A+B)" set forth in the Engineer's Estimate.

Bids in which the number of working days bid for completion of the work exceed the maximum number of days specified will be considered non-responsive and will be rejected."

In the Special Provisions, "AMENDMENTS TO JULY 1999 STANDARD SPECIFICATIONS," Section 7-1.12B(4)(a), "General," and Section 7-1.12B(4)(b), "Liability Limits/Additional Insureds," are revised as attached.

In the Special Provisions, Section 2-1.01, "GENERAL," the second paragraph is revised as follows:

"The proposal shall set forth in clearly legible figures and in the respective spaces provided:

- A. Unit Prices
- B. Item Totals
- C. TOTAL BID (A)
- D. Number of working days bid for completion of the work
- E. TOTAL BID (B) - product of the working days bid and the cost per day shown on the Engineer's Estimate
- F. TOTAL BASIS FOR COMPARISON OF BIDS (A+B)"

In the Special Provisions, Section 3, "AWARD AND EXECUTION OF CONTRACT," the third and fourth paragraphs are revised and follows:

"Bids will be compared on the basis of the Engineer's Estimate of the quantities of work to be done and the number of working days bid for completion of the work. The award of the contract, if made, will be to the lowest responsible bidder whose proposal complies with all the requirements prescribed and who has met the goal for DVBE participation or has demonstrated, to the satisfaction of the Department, good faith efforts to do so. The lowest bid will be determined on the basis of the "Total Basis for Comparison of Bids (A+B)" set forth in the proposal. The contract price for the awarded contract will be the "Total Bid (A)" set forth in the proposal.

Bids in which the number of working days bid for completion of the work exceed 1000 working days will be considered non-responsive and will be rejected."

In the Special Provisions, Section 4, "BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES," is revised as attached.

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In the Special Provisions, Section 5-1.23, "PRESERVATION OF PROPERTY," the fourth paragraph is revised as follows:

"Replacement planting of injured or damaged trees, shrubs and other plants shall be completed not less than 20 working days prior to acceptance of the contract. Replacement plants shall be watered as necessary to maintain the plants in a healthy condition."

In the Special Provisions, Section 9, "DESCRIPTION OF BRIDGE WORK," the seventh paragraph is deleted.

In the Special Provisions, Section 10-1.01, "ORDER OF WORK," the following paragraph is added after the first paragraph:

"The driveway, servicing Parcel 58339 to and from Route 92 (Jackson Street) as shown on the plans, shall not be closed for a period longer than 15 minutes. The minimum usable width shall be 10.7 meters."

In the Special Provisions, Section 10-1.1211, "TEMPORARY CRASH CUSHION (ADIEM)," is added as attached.

In the Special Provisions, Section 10-1.1212, "TEMPORARY CULVERTS," is added as attached.

In the Special Provisions, Section 10-1.1213, "TEMPORARY INLET," is added as attached.

In the Special Provisions, Section 10-1.1214, "TEMPORARY FLARED END SECTION," is added as attached.

In the Special Provisions, Section 10-1.15, "TIME RELATED OVERHEAD," the twenty-third paragraph is revised as follows:

"After acceptance of the contract in conformance with the provisions in Section 7-1.17, "Acceptance of Contract," of the Standard Specifications, the amount of the contract lump sum price for time-related overhead not yet paid, will be included for payment in the first estimate made after acceptance of the contract in conformance with the provisions in Section 9-1.07, "Payment After Acceptance," of the Standard Specifications."

In the Special Provisions, Section 10-1.16, "OBSTRUCTIONS," is revised as attached.

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In the Special Provisions, Section 10-1.21, "MAINTAINING TRAFFIC," last table of the fifth paragraph is deleted and the other tables are revised as follows:

92 / 880 Separation (Replace)  
 Bridge Number 33-0677

	Number	Width	Height
Vehicle Openings	1 - Rte 880	14	4.6
	1 - Rte 880 + Ramp at J2-line	18.3	4.6
	1 - J6-line	4.5	4.6
Pedestrian Openings	N/A	N/A	N/A
Falsework Pavement Lighting			
	Location	Spacing	
	2 - Rte 880 + J2-line  1 - J6-line	R and L 12 C 12 Staggered ½ space R 9	

(Width and Height in meters)  
 (R = Right side of traffic. L = Left side of traffic)  
 (C = Centered overhead)

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Eastbound Rte 92 / Northbound Rte 880 Connector  
Bridge Number 33-0679G

	Number	Width	Height
Vehicle Openings	1 - TSW1-line @ Span 2	17	4.6
	1 - TSW1 @ Span 4	15	4.6
	1 - Rte 880	14	4.6
	1 - Rte 880	14	4.6
	1 - J2-line + Temp Ramp	13	4.6
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	2 - Rte 880	R and L 12 C 12 Staggered ½ space	
	1 - J2-line	R 9	
	2 - TSW1-line	R 9 Each lane	

(Width and Height in meters)  
(R = Right side of traffic. L = Left side of traffic)  
(C = Centered overhead)

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Westbound Rte 92 / Southbound Rte 880 Connector  
 Bridge Number 33-0678F

	Number	Width	Height
Vehicle Openings	2 - Rte 880 1 - J7-line	14.4 9.5	4.6 4.6
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	2 - Rte 880  1 - J7-line	R and L 12 C 12 Staggered ½ space R 9	

(Width and Height in meters)  
 (R = Right side of traffic. L = Left side of traffic)  
 (C = Centered overhead)

Northbound I-880 / Westbound 92  
 Bridge Number 33-0676G

	Number	Width	Height
Vehicle Openings	N/A	N/A	N/A
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	N/A	N/A	

(Width and Height in meters)  
 (R = Right side of traffic. L = Left side of traffic)  
 (C = Centered overhead)

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Calaroga Avenue Overcrossing  
 Bridge Number 33-0446

	Number	Width	Height
Vehicle Openings	1 - Rte 92	15.8	4.6
	1 - Rte 92	14.8	4.6
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	2 - Rte 92	R and L 12 C 12 Staggered ½ space	

(Width and Height in meters)  
 (R = Right side of traffic. L = Left side of traffic)  
 (C = Centered overhead)

Calaroga Avenue Overcrossing - Temporary  
 Bridge Number 33-0446

	Number	Width	Height
Vehicle Openings	1 - Rte 92	15.8	4.6
	1 - Rte 92	14.8	4.6
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	2 - Rte 92	R and L 12 C 12 Staggered ½ space	

(Width and Height in meters)  
 (R = Right side of traffic. L = Left side of traffic)  
 (C = Centered overhead)

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Elderidge Ave Pedestrian Overcrossing (Replace)  
Bridge Number 33-0282

	Number	Width	Height
Vehicle Openings	1 - Rte 880	14.4	4.6
	1 - Rte 880	13.8	4.6
Pedestrian Openings	N/A	N/A	N/A
	Location	Spacing	
Falsework Pavement Lighting	2 - Rte 880	R and L 12 C 12 Staggered ½ space	

(Width and Height in meters)  
(R = Right side of traffic. L = Left side of traffic)  
(C = Centered overhead)

In the Special Provisions, Section 10-1.31, "EXISTING HIGHWAY FACILITIES," Subsection "PUMP PLANT EQUIPMENT REMOVAL," the second and fourth paragraphs are revised as follows:

"Pump plant equipment removal shall consist of removing all the existing pump plant equipment at the locations shown on the plans to be removed or replaced. The two existing pump motors and assemblies shall be salvaged and hauled to Caltrans Electrical Maintenance Station, 30 Rickard Street, San Francisco, CA 94134, (415) 330-6509 and stockpiled.

The contract lump sum price paid for pump plant equipment removal shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in removing existing pump plant equipment, complete in place, including salvaging existing pump motors and assemblies, disposing the material outside of the highway right of way, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer."

In the Special Provisions, Section 10-1.31, "EXISTING HIGHWAY FACILITIES," Subsection "BRIDGE REMOVAL," Bridge Removal (Portion) Location E and its subparagraph are deleted.

In the Special Provisions, Section 10-1.31, "EXISTING HIGHWAY FACILITIES," Subsection "BRIDGE REMOVAL," the table of the sixteenth paragraph is revised by removing the row for Bridge Removal (portion) Location E.

In the Special Provisions, Section 10-1.31, "EXISTING HIGHWAY FACILITIES," Subsection "BRIDGE REMOVAL," the seventeenth and eighteenth paragraphs are deleted.

In the Special Provisions, Section 10-1.35, "EARTHWORK," the table of the twelfth paragraph is revised by removing the row for Mt. Eden OH (Widen) Bridge Number 33-0092 L/R.

In the Special Provisions, Section 10-1.46, "EROSION CONTROL (TYPE D)," is revised as attached.

In the Special Provisions, Section 10-1.49, DEWATERING AND NON-STORM WATER DISCHARGE CONTROL," is revised as attached.

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In the Special Provisions, Section 10-1.64, "PILING," Subsection "DRIVING SYSTEM SUBMITTAL," the table of the first paragraph is revised by removing the row for Bridge Number 33-0092R.

In the Special Provisions, Section 10-1.67, "CONCRETE STRUCTURES," Subsection "FALSEWORK," the second paragraph is deleted.

In the Special Provisions, Section 10-1.67, "CONCRETE STRUCTURES," Subsection "FALSEWORK," the table of the third paragraph is revised by deleting row for Mt. Eden Overhead (Widen).

In the Special Provisions, Section 10-1.82, "SIGN STRUCTURES," the following paragraph is added at the end of the Section:

"Full compensation for installing Contractor furnished sign panels shall be considered as included in the contract price paid per kilogram for install sign structure of the types designated in the Engineer's Estimate and no additional compensation will be allowed therefor."

In the Special Provisions, Section 10-1.101, "SLOPE PAVING," is revised as attached.

In the Special Provisions, Section 10-2.01, "GENERAL," Subsection "PROGRESS INSPECTIONS," is revised as follows:

**"PROGRESS INSPECTIONS**

Progress inspections will be performed at the following stages of work:

- A. At intervals of one month after completion of the work specified for Erosion Control (Type D), "Seed Mix (Wetland)" of the Standard Specifications."

In the Special Provisions, Section 10-2.04, "PLANT ESTABLISHMENT WORK," is deleted.

In the Special Provisions, Section 13-1, "RELATIONS WITH RAILROAD COMPANY," is deleted.

In the Proposal and Contract, the Engineer's Estimate Items 20, 21, 22, 25, 26, 27, 28, 29, 33, 45, 46, 53, 54, 80, 81, 87, 92, 108, 110, 115, 131, 137, 138, 144, 149, 150, 151, 155, 158, 162, 168, 171, 174, 175, 200, 202, 203, 205, 206, 208, 210, 224, 234, 239, 240, 245, 248, 254, 261, 298, 299, 303 and 304 are revised, Items 323, 324, 325, 326, 327, 328, 329, 330, 331, 332 and 333 are added and Items 70, 112, 141, 142, 273 and 322 are deleted as attached.

To Proposal and Contract book holders:

Replace the entire Engineer's Estimate in the Proposal with the attached revised Engineer's Estimate. The revised Engineer's Estimate is to be used in the bid.

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the NOTICE TO CONTRACTORS section of the Notice to Contractors and Special Provisions.

Indicate receipt of this addendum by filling in the number of this addendum in the space provided on the signature page of the proposal.

Submit bids in the Proposal and Contract book you now possess. Holders who have already mailed their book will be contacted to arrange for the return of their book.

Inform subcontractors and suppliers as necessary.

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This office is sending this addendum by DHL overnight mail to Proposal and Contract book holders to ensure that each receives it. A copy of this addendum is available for the contractor's use on the Internet Site:

**[http://www.dot.ca.gov/hq/esc/oe/weekly\\_ads/addendum\\_page.html](http://www.dot.ca.gov/hq/esc/oe/weekly_ads/addendum_page.html)**

If you are not a Proposal and Contract book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

ORIGINAL SIGNED BY

REBECCA D. HARNAGEL, Chief  
Office of Plans, Specifications & Estimates  
Division of Engineering Services - Office Engineer

Attachments

**7-1.12B(4)(a) General**

The Contractor shall carry General Liability and Umbrella or Excess Liability Insurance covering all operations by or on behalf of the Contractor providing insurance for bodily injury liability and property damage liability for the following limits and including coverage for:

1. Premises, operations, and mobile equipment
2. Products and completed operations
3. Broad form property damage (including completed operations)
4. Explosion, collapse, and underground hazards
5. Personal injury
6. Contractual liability

**7-1.12B(4)(b) Liability Limits/Additional Insureds**

The limits of liability shall be at least the amounts shown in the following table:

Total Bid	For Each Occurrence <sup>1</sup>	Aggregate for Products/Completed Operation	General Aggregate <sup>2</sup>	Umbrella or Excess Liability <sup>3</sup>
≤\$1,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$5,000,000
>\$1,000,000				
≤\$5,000,000	\$1,000,000	\$2,000,000	\$2,000,000	\$10,000,000
>\$5,000,000				
≤\$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$15,000,000
>\$25,000,000	\$2,000,000	\$2,000,000	\$4,000,000	\$25,000,000

1. Combined single limit for bodily injury and property damage.  
2. This limit shall apply separately to the Contractor's work under this contract.  
3. The umbrella or excess policy shall contain a clause stating that it takes effect (drops down) in the event the primary limits are impaired or exhausted.

The Contractor shall not require certified Small Business subcontractors to carry Liability Insurance that exceeds the limits in the table above. Notwithstanding the limits specified herein, at the option of the Contractor, the liability insurance limits for certified Small Business subcontractors of any tier may be less than those limits specified in the table. For Small Business subcontracts, "Total Bid" shall be interpreted as the amount of subcontracted work to a certified Small Business.

The State, including its officers, directors, agents (excluding agents who are design professionals), and employees, shall be named as additional insureds under the General Liability and Umbrella Liability Policies with respect to liability arising out of or connected with work or operations performed by or on behalf of the Contractor under this contract. Coverage for such additional insureds does not extend to liability:

1. Arising from any defective or substandard condition of the roadway which existed at or before the time the Contractor started work, unless such condition has been changed by the work or the scope of the work requires the Contractor to maintain existing roadway facilities and the claim arises from the Contractor's failure to maintain;
2. For claims occurring after the work is completed and accepted unless these claims are directly related to alleged acts or omissions of the Contractor that occurred during the course of the work; or
3. To the extent prohibited by Insurance Code Section 11580.04.

Additional insured coverage shall be provided by a policy provision or by an endorsement providing coverage at least as broad as Additional Insured (Form B) endorsement form CG 2010, as published by the Insurance Services Office (ISO), or other form designated by the Department.

#### **SECTION 4. BEGINNING OF WORK, TIME OF COMPLETION AND LIQUIDATED DAMAGES**

Attention is directed to the provisions in Sections 8-1.03, "Beginning of Work," 8-1.06, "Time of Completion," 8-1.07 and "Liquidated Damages," and these special provisions.

The Contractor shall begin work within 15 calendar days after the contract has been approved by the Attorney General or the attorney appointed and authorized to represent the Department of Transportation.

The work shall be diligently prosecuted to completion before the expiration of **the NUMBER OF WORKING DAYS BID** beginning on the fifteenth calendar day after approval of the contract.

The Contractor shall pay to the State of California the sum of \$14,600 per day for each and every calendar day's delay in finishing the work, after expiration of the number of working days bid, until work requiring closure of lanes or shoulders on State Highway Routes 92/880 is complete.

The Contractor shall pay to the State of California the sum of \$14,600 per day for each and every calendar day's delay in finishing the work, after expiration of the number of working days bid, if no further lane or shoulder closures are required on State Highway Routes 92/880 to complete the remaining work.

#### **10-1.1211 TEMPORARY CRASH CUSHION (ADIEM)**

This work shall consist of furnishing, installing, and maintaining temporary crash cushion (ADIEM) at each location shown on the plans, as specified in these special provisions or where designated by the Engineer.

Temporary crash cushion (ADIEM) shall conform to "Crash Cushion (ADIEM)" of these special provisions.

Attention is directed to "Public Safety", "Order of Work", and "Temporary Railing" of these special provisions.

Temporary crash cushions (ADIEM) damaged due to the Contractor's operations shall be repaired immediately by the Contractor at the Contractor's expense. Temporary crash cushions (ADIEM) damaged beyond repair, as determined by the Engineer, due to the Contractor's operations shall be removed and replaced by the Contractor at the Contractor's expense.

A Type R or P marker panel shall be attached to the front of the temporary crash cushion (ADIEM) as shown on the plans, when the closest point of the temporary crash cushion (ADIEM) is within 3.6 m of the traveled way. The marker panel, when required, shall be firmly fastened to the temporary crash cushion (ADIEM) with commercial quality hardware or by other methods determined by the Engineer.

At the completion of the project, temporary crash cushions (ADIEM) and marker panels shall become the property of the Contractor and shall be removed from the site of the work. Temporary crash cushions (ADIEM) will be measured by the unit as determined from the actual count of temporary crash cushions (ADIEM) used in the work or ordered by the Engineer at each location. Repairing temporary crash cushions (ADIEM) damaged by public traffic will be paid for as extra work as provided in Section 4-1.03D of the Standard Specifications. Temporary crash cushions (ADIEM) damaged beyond repair by public traffic, when ordered by the Engineer, shall be removed and replaced immediately by the Contractor. Modules replaced due to damage by public traffic will be measured and paid for as temporary crash cushion (ADIEM).

The contract unit price paid for temporary crash cushion (ADIEM) shall include full compensation for furnishing all labor, materials (including marker panels), tools, equipment, and incidentals, and for doing all the work involved in furnishing, installing, maintaining and removing from the site of the work when no longer required (including those damaged by public traffic) temporary crash cushion (ADIEM), complete in place, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.1212 TEMPORARY CULVERTS**

Temporary culverts shall be furnished, installed, maintained, and later removed as shown on the plans, as specified in these special provisions and as directed by the Engineer.

Temporary culverts shall be plastic pipe and shall conform to "Plastic Pipe" of the special provisions.

Used materials may be installed provided the used materials are good, sound and are suitable for the purpose intended, as determined by the Engineer.

Excavation and backfill for temporary culverts shall be performed in a manner that will provide adequate support for the culvert with a firm, nonsettling foundation for the roadbeds to be constructed over the culverts.

Temporary culverts that are damaged from any cause during the progress of the work shall be repaired or replaced by the Contractor at the Contractor's expense.

When no longer required for the work as determined by the Engineer, temporary culverts shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Removed temporary culverts that are not damaged may be installed in the permanent work provided the culverts conform to the requirements specified for the permanent work and the culverts are new when installed as temporary culverts.

Trenches and pits caused by the removal of temporary culverts shall be backfilled in conformance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

Regardless of the sizes or kinds of temporary culverts installed, temporary culverts will be measured and paid for by the meter for temporary culverts shown on the plans in the same manner specified for plastic pipe in Section 64-4.08, "Measurement," and Section 64-4.09, "Payment," of the Standard Specifications.

Full compensation for maintaining, removing and disposing of temporary culverts shall be considered as included in the contract prices paid per meter for the various sizes or kinds of temporary culverts and no additional compensation will be allowed therefor.

### **10-1.1213 TEMPORARY INLET**

Temporary inlets shall be furnished, installed, maintained, and later removed as shown on the plans, as specified in these special provisions and as directed by the Engineer.

Temporary inlets shall consist of minor concrete (minor structure), miscellaneous iron and steel, complete in place, as shown on the plans, and shall conform to "Concrete Structures," "Miscellaneous Iron and Steel" of these special provisions and these special provisions.

Used materials may be installed provided the used materials are good, sound and are suitable for the purpose intended, as determined by the Engineer.

Excavation and backfill for temporary inlets shall be performed in a manner that will provide adequate support for the inlet with a firm, nonsettling foundation for the roadbeds to be constructed adjacent the inlets.

Temporary inlets that are damaged from any cause during the progress of the work shall be repaired or replaced by the Contractor at the Contractor's expense.

When no longer required for the work as determined by the Engineer, temporary inlets shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Trenches and pits caused by the removal of temporary inlets shall be backfilled in conformance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

Regardless of the sizes or kinds of temporary inlets installed, temporary inlets will be measured as units determined from actual count in place.

The contract unit price paid for temporary inlet shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing temporary inlet, complete in place, including minor concrete (minor structure), miscellaneous iron and steel, structure excavation and backfill, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for maintaining, removing and disposing of temporary inlets shall be considered as included in the contract unit price paid for temporary inlets and no additional compensation will be allowed therefor.

#### **10-1.1214 TEMPORARY FLARED END SECTION**

Temporary flared end sections shall be furnished, installed, maintained, and later removed as shown on the plans, as specified in these special provisions and as directed by the Engineer.

Temporary flared end sections shall consist of flared end sections and rock slope protection, complete in place, as shown on the plans, and shall conform to "Miscellaneous Facilities," "Slope Protection" of these special provisions and these special provisions.

The size and type of temporary flared end sections to be installed at each location shall be at the option of the Contractor; however, flared end section shall be capable of sustaining the intended load and of discharging a quantity of water equivalent to the type and size of flared end section shown on the plans. Adequacy as to equivalent strength and capacity shall be subject to approval, in writing, by the Engineer.

Used materials may be installed provided the used materials are good, sound and are suitable for the purpose intended, as determined by the Engineer.

Excavation and backfill for temporary flared end sections shall be performed in a manner that will provide adequate support for the flared end sections with a firm, nonsettling foundation for the roadbeds to be constructed over the flared end sections.

Temporary flared end sections that are damaged from any cause during the progress of the work shall be repaired or replaced by the Contractor at the Contractor's expense.

When no longer required for the work as determined by the Engineer, temporary flared end sections shall be removed. Removed facilities shall become the property of the Contractor and shall be removed from the site of the work, except as otherwise provided in this section.

Removed temporary flared end sections that are not damaged may be installed in the permanent work provided the flared end sections conform to the requirements specified for the permanent work and the flared end sections are new when installed as temporary flared end sections.

Trenches and pits caused by the removal of temporary flared end sections shall be backfilled in conformance with the provisions in the second paragraph of Section 15-1.02, "Preservation of Property," of the Standard Specifications.

Regardless of the sizes or kinds of temporary flared end sections installed, temporary flared end sections will be measured as units determined from actual count in place.

The contract unit price paid for temporary flared end section shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing temporary flared end section, complete in place, including rock, rock slope protection fabric, excavation and backfill, as shown on the plans, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

Full compensation for maintaining, removing and disposing of temporary flared end section shall be considered as included in the contract unit price paid for temporary flared end section and no additional compensation will be allowed therefor.

**10-1.16 OBSTRUCTIONS**

Attention is directed to Section 8-1.10, "Utility and Non-Highway Facilities," Section 15, "Existing Highway Facilities," and Section 51-1.19, "Utility Facilities," of the Standard Specifications and these special provisions.

Attention is directed to the existence of certain underground facilities that may require special precautions be taken by the Contractor to protect the health, safety and welfare of workers and of the public. Facilities requiring special precautions include, but are not limited to: conductors of petroleum products, oxygen, chlorine, and toxic or flammable gases; natural gas in pipelines greater than 150 mm in diameter or pipelines operating at pressures greater than 415 kPa (gage); underground electric supply system conductors or cables, with potential to ground of more than 300 V, either directly buried or in a duct or conduit which do not have concentric grounded or other effectively grounded metal shields or sheaths.

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 Number
Underground Service Alert-Northern California (USA)	1-800-642-2444 1-800-227-2600
Underground Service Alert-Southern California (USA)	1-800-422-4133 1-800-227-2600

It is anticipated that the following utility facilities will be relocated prior to the dates shown:

Table 1

Utility	Location	Date
PG&E Elec, AT&T, Comcast Underground Service	Northwest Quadrant of 92/880 Separation (Plan sheets U-5, U-17)	12/31/2007
AT&T 18-4" Duct Conduit Bank	Northwest Quadrant of 92/880 Separation Between Calaroga Ave. & Rte 880-Plan sheet U-17)	06/30/2008
PG&E Elec, AT&T, Comcast	Northeast Quadrant of 92/880 Separation (Plan sheets U-6, U-18 & U-19)	12/31/2007
PG&E Elec, AT&T, Comcast	Southwest Quadrant of 92/880 Separation (Plan sheets U-4, U-5 & U-17)	12/31/2007
AT&T 18-4" Duct Conduit Bank	Southwest Quadrant of 92/880 Separation (Plan sheets U-4, U-5 & U-17)	04/30/2008
AT&T	Southeast Quadrant of 92/880 Separation (Plan sheets U-6 and U-18)	12/31/2007
AT&T	East of I-880 on Rte 92 Plan sheet U-18	12/31/2007
PG&E Electrical	North of Rte 92 on I-880 Plans sheet U-7	12/31/2007
PG&E Electrical	Temporary Overhead Relocation at Calaroga Avenue O.C. To Peterman Avenue	12/31/2007
PG&E, AT&T	Southeast Corner of Rte 92 and Santa Clara Plan sheet- U-19	12/31/2007

The following utility facilities will be relocated during the progress of the contract. The Contractor shall notify the Engineer, in writing, prior to doing work in the vicinity of the facility. The utility facility will be relocated within the listed working days, as defined in Section 8-1.06, "Time of Completion," of the Standard Specifications, after the notification is received by the Engineer:

Table 2

Utility	Location	Working Days
City of Hayward Water Cut & Cap- Service Connection	Northeast Quadrant of 92/880 Separation Plan Sheet U-7	90
PG&E Electrical	Southwest Quadrant of 92/880 Separation at Pump Station (Bore and Jack)	90
City of Hayward Water Cut & Cap- Service Connection	Calaroga Avenue O.C. Plan Sheet U-16	90
City of Hayward Fire Hydrant	Peterman Ave and gasoline station on Route 92 at various locations	90
AT&T	Southwest Quadrant of 92/880 Separation to Lindenwood Way (Bore and Jack)	90
PG&E Gas	Calaroga Avenue O.C.	100

In the event that the utility facilities mentioned above are not removed or relocated by the date specified and, if in the opinion of the Engineer, the Contractor's operations are delayed or interfered with by reason of the utility facilities not being removed or relocated by the date specified, the State will compensate the Contractor for the delays to the extent provided in Section 8-1.09, "Right of Way Delays," of the Standard Specifications, and not otherwise, except as provided in Section 8-1.10, "Utility and Non-Highway Facilities," of the Standard Specifications.

The utility facilities listed in the following table will be arranged as shown on the plans during construction operations to permit the pile driving or drilling operations and the substructure construction. It is anticipated that no other utility facilities will be rearranged or temporarily deactivated in advance of or during construction operations to permit pile driving or drilling operations or substructure construction, unless the Contractor makes the necessary arrangements as provided in Section 8-1.10:

Table 3

Utility Facility	Location
PG&E Gas Shut-off	Calaroga Avenue O.C.
PG&E Electrical (de-energize) (NT Line Sta 167+30 to 169+34)	North side of Route 92 between Calaroga Ave and Route 880
PG&E Electrical (de-energize) (Plan sheets U-6 & U-17)	South side of Route 92 between Calaroga Ave and Route 880

The Contractor shall notify the Engineer in writing at least 30 days in advance of the date or dates that the interfering utility facilities, in Table 3, are to be rearranged. The Engineer will, in turn, notify the owners of the utility facilities.

The utility facilities listed in the following table, and other utility facilities that possibly exist at locations which might interfere with the pile driving or drilling operations or substructure construction, will not be rearranged in advance of or during construction operations. Should the Contractor desire to have any of the utility facilities rearranged or temporarily deactivated for his convenience, the Contractor shall make the necessary arrangements as provided in Section 8-1.10:

Table 4

Utility Facility	Location
2 – 900 mm diameter RCPP City of Hayward Sag Drain	Retaining Wall A
1 – 400 mm diameter steel encased CSP City of Hayward Sanitary Sewer	Retaining Wall A
Existing piling at bents 2 & 4	92 / 880 Separation (Replace)

Full compensation for conforming to the requirements of this section, not otherwise provided for, shall be considered as included in the prices paid for the various contract items of work involved and no additional compensation will be allowed therefore.

**10-1.46 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, erosion control (netting) areas and other areas disturbed by construction activities.

Erosion control (Type D) shall be applied when an area is ready to receive erosion control as determined by the Engineer and in conformance with the provisions in "Move-in/Move-out (Erosion Control)" of these special provisions.

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

Prior to installing erosion control materials, soil surface preparation shall conform to the provisions in Section 19-2.05, "Slopes," of the Standard Specifications, except that rills and gullies exceeding 50 mm 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. For those areas where erosion control (netting) is proposed, Erosion Control (Type D) shall be applied subsequent to the installation of netting.

**MATERIALS**

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

**Seed**

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

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

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

**Legume Seed**

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

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

**LEGUME SEED**

Botanical Name (Common Name)	Percent Germination (Minimum)	Kilograms Pure Live Seed Per Hectare (Slope Measurement)
Lotus purshianus (Purshings Lotus)	70	4.0
Trifolium wildenovii (Tomcat Clover)	70	4.0
Lupinus bicolor (Pygmy-Leaf Lupine)	70	8.0

### Non-Legume Seed

Non-legume seed shall consist of the following:

NON-LEGUME SEED		
Botanical Name (Common Name)	Percent Germination (Minimum)	Kilograms Pure Live Seed Per Hectare (Slope Measurement)
Hordeum californicum (California Barley)	40	8.0
Vulpia microstachys (Three Weeks Fescue)	40	6.0
Bromus carinatus * (California Brome)	40	8.0
Festuca rubra 'Molate' * (Molate Red Fescue)	40	8.0
Melica californicum (California Oniongrass)	40	6.0
Nasella pulchra * (Purple Needlegrass)	40	10.0
Nasella cernua * (Nodding Needlegrass)	40	8.0

\*California Native Seed Source

### 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.

Straw shall be free of plastic, glass, metal, rocks, and refuse or other deleterious material.

### Compost

At the option of the Contractor, compost may be either A, B, or any combination of both:

- A. Green material consisting of chipped, shredded, or ground vegetation; or clean processed recycled wood products.
- B. Class A, exceptional quality biosolids composts, conforming to the requirements in United States Environmental Protection Agency (EPA) regulation 40 CFR, Part 503c.

Compost shall not contain paint, petroleum products, herbicides, fungicides or other chemical residues harmful to plant or animal life. Other deleterious material, plastic, glass, metal or rock shall not exceed 0.1-percent by weight or volume.

Compost shall be thermophilically processed for 15 days. During this process, the compost shall be maintained at minimum internal temperature of 55°C and be thoroughly turned at least 5 times. A 90-day curing period shall follow the thermophilic process.

Compost shall be screened through a screen no larger than 12 mm.

Compost shall measure at least 6 on the maturity and stability scale with a Solvita test kit.

A Certificate of Compliance for compost shall be furnished to the Engineer in conformance with the provisions in Section 6-1.07, "Certificates of Compliance," of the Standard Specifications. The Certificate of Compliance shall state the Solvita maturity and stability scale test result of the compost.

### 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 derivative of Plantago ovata 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 rates indicated shall be applied with hydro-seeding equipment within 60 minutes after the seed has been added to the mixture:

Material	Kilograms Per Hectare (Slope Measurement)
Legume Seed	16.0
Non-Legume Seed	54.0
Fiber	320.0

Material	Cubic Meter Per Hectare (Slope Measurement)
Compost	8.0

- B. Straw shall be applied at the rate of 4.0 tonnes per hectare based on slope measurements. Incorporation of straw will not be required. Straw shall be distributed evenly without clumping or piling. Straw shall not be applied to areas of erosion control netting.
- C. The following mixture in the rates indicated shall be applied with hydro-seeding equipment:

Material	Kilograms Per Hectare (Slope Measurement)
Fiber	320.0
Stabilizing Emulsion (Solids)	140.0

Material	Cubic Meter Per Hectare (Slope Measurement)
Compost	8.0

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

**MEASUREMENT AND PAYMENT**

Compost (erosion control) will be measured by the cubic meter in the vehicle at the point of delivery in conformance with the provisions in Section 9-1.01, "Measurement of Quantities," of the Standard Specifications.

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

#### **10-1.49 DEWATERING AND NON-STORM WATER DISCHARGE CONTROL**

Dewatering and Non-Storm water discharges shall conform to the requirements in Section 7-1.01 G, "Water Pollution Control," of the Standard Specifications, the requirements for water pollution control elsewhere in these special provisions, and these special provisions.

Conformance with the requirements of this section shall in no way relieve the Contractor from the Contractor's responsibilities, as provided in Section 7-1.11, "Preservation of Property", and Section 7-1.12, "Indemnification and Insurance," of the Standard Specifications.

#### **DEWATERING OPERATIONS**

Dewatering operations shall consist of collection, conveyance, treatment, and disposal of groundwater encountered during structure excavations and during construction operations to install subgrade improvements in accordance with "Ground Improvements" described elsewhere in these special provisions for the duration of the contract. Stormwater runoff, run-on from drainage courses, stream flows or accumulated precipitation shall not be allowed to mix with groundwater in excavations.

Stormwater run-on or accumulated precipitation mixed with groundwater shall be considered as groundwater.

Discharge of water collected from dewatering operations shall be in accordance with the "Disposal" section described elsewhere in these special provisions.

Attention is directed to "Erosion Control (Type D)" of these special provisions regarding the requirement to stabilize and restore all areas following removal of all facilities and equipment associated with dewatering and non-storm water discharges.

Stormwater run-on and runoff shall be diverted away from excavations that require dewatering to complete work. It is estimated that the seepage flow rate is approximately 110 liters/day-m<sup>2</sup> of the excavation areas including, but not limited to, structure excavations for footings, walls, storm drain systems, sanitary sewer systems, utilities and appurtenances. The excavation area measured below the static groundwater table for estimation of seepage flow rate shall include excavations side walls/slopes and bottom of the excavation. Continuous pumping from well points outside the excavations shall not be allowed.

The Contractor may elect to apply a seal course to control water from excavations. Seal courses shall conform with the provisions of Section 19-3.04, "Water Control and Foundation Treatment," of the Standard Specifications. A meter that has been approved by the Engineer shall be used to measure all dewatering discharges, and shall be in place and operable prior to any discharges. Discharges shall be recorded daily when discharges occur and a copy of all recordings provided to the Engineer at the end of each month combined with any water sampling data.

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>

The Contractor shall be responsible for designing and constructing all temporary project and local dewatering systems which shall conform to section 19-3.04, "Water Control and Foundation Treatment," of the Standard Specification, these special provisions, and as directed by the Engineer.

#### **COLLECTION AND CONVEYANCE SYSTEM**

Water pumped for dewatering operations shall be stored in the temporary holding tanks placed at the Construction work area for treatment to remove sediment.

The Contractor may collect the water pumped during dewatering operations from one footing excavation to another footing excavation. Prior to backfilling the excavation, the remaining groundwater shall be pumped from the excavation to a temporary holding tank(s) for disposal.

### **Temporary Holding Tanks**

The Contractor shall use temporary holding tanks including, but not limited to transportable closed top holding tanks or tanker trucks for holding water, of which a sufficient number shall be provided based on the following:

1. Anticipated flow rates,
2. Pumping rates,
3. Capacity inefficiencies due to sediment retention within the holding tanks,
4. Sediment settling rates, and
5. Anticipated water loss or reuse rates.

The Contractor shall provide temporary holding tanks with a holding capacity sufficient to handle the water removed from dewatering operations, and prevent delay of work.

Each temporary holding tank shall have an inlet and outlet capable of receiving and discharging flows at a sufficient rate to dewater the excavation.

The Contractor shall maintain a minimum freeboard of 0.3-meter (one-foot) space in each of the temporary holding tanks at all times. The Contractor shall clean the holding tanks when 25 percent of the tank's volume is filled with sediments.

### **Conveyance**

The Contractor shall be responsible for providing all pumps and piping required to convey the water to the temporary holding tank and to the point of discharge.

The Contractor shall use a flow meter, as described in "Flow Rate Monitoring" of this section, to measure all discharges from dewatering operations.

Materials shall conform to the provisions in Section 6, "Control of Materials," Section 7-1.16, "Contractor's Responsibility for the Work and Materials," and Section 74-2, "Drainage Pump Equipment," of the Standard Specifications and these special provisions.

### **TREATMENT SYSTEM**

A treatment system shall be provided to treat water collected from dewatering operations in accordance with the "Water Quality Requirements" and these special provisions. The Contractor shall design and implement an appropriate treatment system for the site conditions and anticipated flow rate to achieve and maintain compliance with the specified water quality requirements. Treatment systems shall be appropriately sized to prevent the delay of work.

Treatment system components shall include, but not be limited to, weir tanks, settling tanks, gravity bag filters, sand media filters, pressurized bag filters, cartridge filters, in-line flocculants, or a combination of these systems to provide adequate treatment and polishing. Temporary holding tanks alone may not provide sufficient treatment to meet the water quality requirements. The Contractor shall consider all treatment options necessary to comply with the "Water Quality Requirements," of this section.

### **DISPOSAL**

After treatment of groundwater as described in "Treatment System," in this section, the water can be used for dust control, or discharged into the storm drain system or a receiving water body. The water used for dust control shall not cause erosion or create runoff from the project site.

The point of discharge to a receiving water body or a storm drain shall not cause erosion at the point of discharge, or cause bottom sediments, aquatic vegetation, or surface soils to become dislodged or disturbed. The Contractor shall conduct monitoring and water quality sampling in conformance with these special provisions.

The Contractor shall conduct Water Quality Monitoring to ensure that the discharges are in accordance with the Water Quality Requirements as described elsewhere in these special provisions.

Sediment removed during maintenance of the treatment system shall be removed in accordance with the manufacturer's recommendations and shall be disposed of in conformance with the provisions in "Earthwork" of these special provisions.

Groundwater in excavations contaminated by the Contractor's operations, including but not limited to, use of slurry cement backfill to construct cast-in-drilled-hole piles, shall be treated to meet the "Water Quality Requirements," of this section, or hauled off site to an appropriately licensed liquid disposal facility. No adjustment in compensation will be made for ordered changes to correct the work resulting from the Contractor's own operations or from the Contractor's negligence.

## WATER QUALITY REQUIREMENTS

For discharges from the holding tank(s) to the storm drain system, the turbidity shall not be greater than 50 Nephelometric Turbidity Units (NTU) and the pH shall not be less than 6.5 nor greater than 8.5 units.

The water within the temporary holding tanks shall comply with the following effluent standards prior to discharge to a receiving water body:

Constituent	Effluent Limits
Turbidity (NTU)	Downstream turbidity < 50 NTU (when, Natural Background Turbidity < 50 NTU), or Downstream turbidity < 10% above natural background turbidity, when it is > 50 NTU
PH	Change in downstream pH over natural background pH shall be < 0.5 pH units
Dissolved Oxygen (DO)	Downstream DO > 5.0 mg/l

Downstream measurements shall be taken at 5 m downstream of the discharge point, and Natural Background measurements shall be taken at 50 m upstream of discharge point.

The sampling frequencies for monitoring the discharges are specified in the Water Quality Measurements section of these special provisions.

## INSPECTION, MONITORING, AND REPORTING REQUIREMENTS

The Contractor shall conduct daily visual inspection of the dewatering system, when in use, to ensure that the various components are functional. Components shall be routinely maintained or replaced to prevent leakage and to ensure efficient operation of the dewatering system.

The Contractor shall document the results of the daily visual inspection in a Daily Inspection Report (DIR) to be submitted to the Engineer upon request. The DIR form shall also include the Discharge Volume Records and Water Quality Monitoring Records described elsewhere in this section. In developing the DIR, the Contractor may refer to guidelines found in the Caltrans Construction Site Best Management Practices Manual, Section 7, NS-2, Dewatering Operations, and Attachment C in the Field Guide to Construction Site Dewatering. The DIR form shall be approved by the Engineer prior to use.

All information and recorded data collected or submitted as part of the DIR shall be certified as true and accurate and signed by those who gather the information.

The DIR shall be provided weekly to the Engineer, or as directed by the Engineer.

### Visual Inspection

During each day of discharge, the Contractor shall perform daily inspection of the effluent from the holding tanks at the discharge site and shall include, in the DIR, observations of:

1. Date and Time.
2. Weather conditions,
3. Wind direction and velocity,
4. The presence or absence of water fowl or aquatic wildlife,
5. The color and clarity of the effluent discharge, and
6. Any erosion and/or ponding downstream of the discharge site

The DIR shall include photographs of the discharge point and areas downstream of the discharge location. These photographs shall be labeled with the time, date, and location.

### **Flow Rate Monitoring**

A flow meter that has been approved by the Engineer for exclusive use in dewatering during construction shall be used to measure all excavation discharges. All calibrations shall be done in conformance with the manufacturer's instructions in the presence of the Engineer.

For every day when dewatering is conducted, the Contractor shall record the flow-meter totalizer readings, compute average daily volumes. The Discharge Volume Records shall include the calibration logs for the flow meter and flow meter readings including the computed average daily volumes.

### **Water Quality Measurements**

For discharges of storm water that exceed 4 hours in duration, the Contractor shall measure the water quality parameters listed under "Water Quality Requirements" at the end of the outfall or at an inline sampling port in the outfall piping. The measurements shall begin 10 to 30 minutes after initiating the discharge. Sampling shall be timed such that sampling events are equally dispersed throughout the duration of the discharge and so that a minimum of 4 sampling events are performed for each discharge lasting 4 hours or more within any continuous 24 hour period. The time between sampling events shall not exceed 4 hours.

For discharges to the storm drain system that lasts more than 4 hours in duration, the Contractor shall measure the water quality parameters listed under "Water Quality Requirements" of these special provisions as follows:

- A. Startup-phase sampling shall include effluentwater measurements taken during the first 3 days of discharge operation. Start-up phase sampling shall begin 10 to 30 minutes after initiating the discharge. Sampling shall be timed such that sampling events are equally dispersed throughout the duration of the discharge and so that a minimum of 4 sampling events are performed for each discharge lasting 4 hours or more. The time between sampling events shall not exceed 4 hours.
- B. Regular-phase sampling shall include effluent, background, and receiving water measurements that occur after the third day of operation. Regular-phase sampling shall occur a minimum of twice daily and the sampling shall be timed such that events are equally dispersed throughout the duration of the discharge.
- C. After each initial measurement that exceeds the water quality limitations, the Contractor shall confirm the exceedance by taking an additional measurement no less than 15 minutes and no more than 1 hour after the initial measurement.
- D. After each confirmed exceedance, the Contractor shall revert to the startup-phase sampling requirements before resuming the regular-phase sampling.
- E. For maintenance dewatering, regular-phase monitoring may be discontinued after 10 days if, in the opinion of the Engineer, the effluent and receiving water measurements are consistently below the water quality limitations.

For discharges of less than 4 hours in duration, the Contractor shall measure the water quality parameters listed under "Water Quality Requirements" of these special provisions as follows:

- A. Effluent water measurements shall occur between 10 and 30 minutes after initiating discharge.
- B. Effluent water measurements shall occur every hour thereafter.
- C. After each initial measurement that exceeds the water quality limitations, the Contractor shall confirm the exceedance by taking an additional measurement no more than 15 minutes after the initial measurement.

All field-recorded data shall be obtained using measuring instruments approved by the Engineer and recorded in the presence of the Engineer. The Contractor shall submit a copy of the manufacturer specifications for all measuring instruments used, including the operating instructions, calibration instructions, and calibration log, as part of the Dewatering and Discharge Plan submittal. All field calibrations shall be done in conformance with the manufacturer's instructions in the presence of the Engineer. Copies of the field-recorded data shall be transmitted electronically to the Engineer at the end of each working day.

If, at any time, sampling indicates that the effluent does not meet the water quality requirements (WQR), the Contractor shall immediately cease discharge, notify the Engineer and take corrective actions to repair, maintain, or replace the equipment, or to modify operations. The Contractor shall prepare and submit a Notice of Discharge within 48 hours, as described in the SWPPP Preparation Manual, Attachment K. The discharges shall not resume until approved by the Engineer.

## **DEWATERING AND DISCHARGE PLAN**

The Contractor shall submit a Dewatering and Discharge Plan (DDP) to the Engineer, for review and approval, 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 DDP shall include the following:

- A. Title sheet
- B. Table of contents
- C. Certification and approval sheet (Section 100 of the SWPPP/WPCP Preparation Manual)
- D. Amendment log & Amendment format (Section 200 of the SWPPP/WPCP Preparation Manual)
- E. Description of the dewatering and discharge operations
- F. Description of the methods and measures to be used to seal the sides and bottom of the shaft excavation and to prevent the flow of water into excavation and temporary stockpiles
- G. Estimated schedule for dewatering and discharge (begin and end dates, intermittent or continuous)
- H. Treatment system description and components
- I. Design efficiency and anticipated flow rates
- J. Operation and system maintenance procedures and example maintenance log
- K. Visual, flow, and water quality monitoring, calibration and inspection procedures with example inspection logs
- L. Water quality measurement procedures and equipment description with example data logs
- M. Proposed form for the Daily Inspection Report
- N. Working drawings of dewatering and discharge operations shall include as a minimum:
  - 1) sectional and plan views of water treatment systems for the removal of suspended solids and other pollutants introduced during construction
  - 2) the location of sampling points for water quality measurements
  - 3) the flow path and placement of pipes, hoses, pumps, holding tanks, and other equipment used to convey the water and effluent from the holding tanks
  - 4) the general position of the water collection, conveyance, treatment, and disposal operation components relative to dewatering operations

The DDP shall be submitted 30 working days prior to beginning excavation operations. The Contractor shall allow 15 working days for the Engineer to review and approve the DDP. If revisions are required, as determined by the Engineer, the Contractor shall revise and resubmit the DDP within 5 working days for the Engineer to review the revisions. Excavation operations shall not be allowed until the Engineer has approved the DDP. In order to allow excavation to proceed, the Engineer may conditionally approve the DDP while minor revisions are being completed. In the event the Engineer fails to complete the review within the time allowed, and if, in the opinion of the Engineer, completion of the work is delayed or interfered with by reason of the Engineer's delay in completing the review, the Contractor will be compensated for resulting losses, and an extension of time will be granted, in the same manner as provided for in Section 8-1.09, "Right of Way Delays," of the Standard Specifications.

The Contractor shall prepare an amendment to the SWPPP when there is a change in operations which may cause the water to violate the WQR or when directed by the Engineer. Amendments shall identify additional treatment practices or revised operations, including those areas or operations not identified in the initially approved DDP. Amendments to the DDP shall be prepared and submitted for review and approval within a time approved by the Engineer, but in no case longer than the time specified for the initial submittal and review of the DDP.

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

## **NON-STORM WATER DISCHARGE CONTROL**

### **Spill Contingency**

The Contractor shall prepare and submit to the Engineer a contingency plan for the management of spills or leaks of any materials or wastes that may impact the water quality of the receiving water body.

The spill contingency plan shall be incorporated within the Storm Water Pollution Prevention Plan (SWPPP), as specified in "Water Pollution Control" of these special provisions.

The contingency plan shall include instructions and procedures for preventing spills, reporting spills, and a list of spill containment and collection materials and equipment to be maintained onsite. The contingency plan shall be reviewed and updated as directed by the Engineer.

### **Liquids, Residues, And Debris**

The control and disposal of the liquids, residues, and debris shall be described within the SWPPP, as specified in "Water Pollution Control" of these special provisions. The SWPPP shall, at a minimum, depict and describe the procedural and structural methods of detaining, collecting, and disposing of all slurries, liquids, residues, and debris associated with the operations. Sufficient redundancy shall be incorporated into the procedural and structural methods such that the liquids, residues, and debris are not conveyed into or become present in receiving waters, drainage systems, or other water bodies.

Full compensation for conforming to the "Non-storm Water Discharge Control" Section of these special provisions, excluding Dewatering Operations shall be considered as included in the prices paid for the various contract items of work affected by this section and no additional compensation will be allowed therefor.

## **PAYMENT**

The contract lump sum price paid for dewatering and non-storm water discharge control shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in dewatering operations, complete in place, including collecting, conveying, treating, and disposing of water from dewatering operations, preparing and amending a DDP; conforming to the requirements of the DDP; performing water quality measurements; providing power to operate equipment; furnishing, maintaining, and removing treatment systems; performing inspections and visual observations; preparing and submitting the DIR; and providing all necessary maintenance, including removal and disposal of accumulated sediment, as specified in the Standard Specifications and these special provisions, and as directed by the Engineer.

### **10-1.101 SLOPE PAVING**

Slope under the ends of bridges, where shown on the plans, shall be paved in conformance with the provisions in Section 72-6, "Slope Paving," of the Standard Specifications and these special provisions.

The slope paving shall be colored in conformance with the provisions in Section 72-6.03, "Materials," of the Standard Specifications.

Masonry block for slope paving where shown on the plans, shall be concrete pavers conforming to ASTM Designation: C 90, Type-II. The surface exposed to view shall have split face texture.

The nominal size of concrete pavers shall be 102 mm x 203 mm x 406 mm. Head and bed mortar joints shall be 13 mm thick.

Portland cement shall conform to the provisions in Section 90-2.01, "Portland Cement," of the Standard Specifications.

Hydrated lime shall conform to ASTM Designation: C 207, Type S.

Mortar sand shall be commercially produced for masonry work and free of organic impurities and lumps of clay and shale.

Mortar for laying concrete pavers shall consist, by volume, of one part portland cement, 0 to 1/2 part hydrated lime, and 2 1/4 to 3 parts of mortal sand. Sufficient water shall be added to make a workable mortar. Each batch of mortar shall be accurately measured and thoroughly mixed. Mortar shall be freshly mixed as required. Mortar shall not be retempered more than one hour after mixing. The amount of lime shall be reduced as necessary to prevent leaching and efflorescence on finished surfaces.

A proprietary, premixed packaged blend of cement, lime, and sand, without color, that requires only water to prepare for use as brick mortar or grout may be furnished for mortar. Packages of premix shall bear the manufacturer's name, brand, weight, and color identification. The manufacturer's recommended mixing proportions and procedures shall be furnished to the Engineer.

The top surface of the air-blown mortar or concrete base shall be lightly and evenly scored horizontally and vertically with a metal scratcher having grooves not more than 25 mm apart.

The air-blown mortar or concrete base shall be cured by the water method for at least 2 days.

Concrete pavers shall be laid and embedded in approximately 25 mm thick mortar. Embedment shall be shoved tight so that mortar is flushed into the joints to a depth of approximately 13 mm.

Joints shall be straight and of uniform and equal width.

Surfaces of completed masonry, concrete, and other such materials exposed to view shall be protected from spillage, splatters and other deposits of cementitious materials from masonry construction. All such deposits shall be removed without damage to the materials or exposed surfaces. Stains, efflorescence, laitance, splashes or spots on the faces of masonry exposed to view shall be removed. Cleaning agents shall conform to the concrete paver manufacturers recommendations. Cleaning agents shall be applied to a sample area acceptable to the Engineer, and their performance and the cleaning methods approved by the Engineer before proceeding with cleaning beyond the sample area.

Full compensation for furnishing and placing masonry block for slope paving shall be considered as included in the contract price paid per cubic meter for slope paving and no additional compensation will be allowed therefor.

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
1	070012	PROGRESS SCHEDULE (CRITICAL PATH METHOD)	LS	LUMP SUM	LUMP SUM	
2	070018	TIME-RELATED OVERHEAD	LS	LUMP SUM	LUMP SUM	
3 (S)	071322	TEMPORARY FENCE (TYPE CL-1.8)	M	500		
4 (S)	010979	TEMPORARY FENCE (TYPE CL-1.8, SLATTED)	M	1020		
5	071325	TEMPORARY FENCE (TYPE ESA)	M	1300		
6	074019	PREPARE STORM WATER POLLUTION PREVENTION PLAN	LS	LUMP SUM	LUMP SUM	
7	074020	WATER POLLUTION CONTROL	LS	LUMP SUM	LUMP SUM	
8	010980	DEWATERING AND NON-STORM WATER DISCHARGE CONTROL	LS	LUMP SUM	LUMP SUM	
9	074029	TEMPORARY SILT FENCE	M	1800		
10	074032	TEMPORARY CONCRETE WASHOUT FACILITY	EA	10		
11	074033	TEMPORARY CONSTRUCTION ENTRANCE	EA	10		
12	074037	MOVE-IN/MOVE-OUT (TEMPORARY EROSION CONTROL)	EA	4		
13	074038	TEMPORARY DRAINAGE INLET PROTECTION	EA	50		
14	074040	TEMPORARY HYDRAULIC MULCH (BONDED FIBER MATRIX)	M2	42 500		
15	010981	TEMPORARY SLOPE PAVING	M3	70		
16 (S)	120090	CONSTRUCTION AREA SIGNS	LS	LUMP SUM	LUMP SUM	
17 (S)	120100	TRAFFIC CONTROL SYSTEM	LS	LUMP SUM	LUMP SUM	
18 (S)	120120	TYPE III BARRICADE	EA	7		
19 (S)	120149	TEMPORARY PAVEMENT MARKING (PAINT)	M2	290		
20 (S)	120159	TEMPORARY TRAFFIC STRIPE (PAINT)	M	96 700		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
21 (S)	120165	CHANNELIZER (SURFACE MOUNTED)	EA	510		
22 (S)	120300	TEMPORARY PAVEMENT MARKER	EA	25 400		
23 (S)	121161	TEMPORARY TERMINAL SECTION (TYPE K)	EA	10		
24	128650	PORTABLE CHANGEABLE MESSAGE SIGN	EA	4		
25 (S)	129000	TEMPORARY RAILING (TYPE K)	M	44 600		
26 (S)	129100	TEMPORARY CRASH CUSHION MODULE	EA	1160		
27 (S)	129150	TEMPORARY TRAFFIC SCREEN	M	44 600		
28	150206	ABANDON CULVERT	M	2630		
29	150221	ABANDON INLET	EA	61		
30	150224	ABANDON MANHOLE	EA	1		
31	150241	ABANDON SEWER	M	280		
32	010982	ABANDON WATER	M	560		
33	150605	REMOVE FENCE	M	150		
34	150608	REMOVE CHAIN LINK FENCE	M	800		
35 (S)	150662	REMOVE METAL BEAM GUARD RAILING	M	1730		
36 (S)	010983	REMOVE THRIE BEAM BARRIER	M	360		
37	150668	REMOVE FLARED END SECTION	EA	1		
38	150704	REMOVE YELLOW THERMOPLASTIC TRAFFIC STRIPE	M	13 300		
39	150714	REMOVE THERMOPLASTIC TRAFFIC STRIPE	M	18 800		
40	150715	REMOVE THERMOPLASTIC PAVEMENT MARKING	M2	450		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
41	150722	REMOVE PAVEMENT MARKER	EA	10 800		
42	150742	REMOVE ROADSIDE SIGN	EA	115		
43 (S)	150760	REMOVE SIGN STRUCTURE	EA	13		
44 (S)	150767	REMOVE BRIDGE MOUNTED SIGN	EA	6		
45	150805	REMOVE CULVERT	M	310		
46	150820	REMOVE INLET	EA	25		
47	150821	REMOVE HEADWALL	EA	8		
48	010984	REMOVE MANHOLE (SEWER)	EA	3		
49	150860	REMOVE BASE AND SURFACING	M3	16 900		
50	151227	SALVAGE FRAME AND GRATE	EA	2		
51	152354	RELOCATE REMOTE CONTROL VALVE	EA	2		
52	152386	RELOCATE ROADSIDE SIGN-ONE POST	EA	1		
53	152430	ADJUST INLET	EA	20		
54	152604	MODIFY INLET	EA	24		
55	010985	MODIFY MANHOLE (SEWER)	EA	2		
56 (S)	153103	COLD PLANE ASPHALT CONCRETE PAVEMENT	M2	108 000		
57	153210	REMOVE CONCRETE	M3	252		
58	153211	REMOVE CONCRETE SIDEWALK AND DRIVEWAY	M3	180		
59	010986	REMOVE CELLULAR CONCRETE	M3	130		
60	153214	REMOVE CONCRETE CURB	M3	190		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
61	153221	REMOVE CONCRETE BARRIER	M	2320		
62 (F)	153235	CLEAN BRIDGE DECK	M2	5040		
63	155003	CAP INLET	EA	8		
64	156590	REMOVE CRASH CUSHION (SAND FILLED)	EA	3		
65	040913	PUMP PLANT EQUIPMENT REMOVAL	LS	LUMP SUM	LUMP SUM	
66	157551	BRIDGE REMOVAL, LOCATION A	LS	LUMP SUM	LUMP SUM	
67	157552	BRIDGE REMOVAL, LOCATION B	LS	LUMP SUM	LUMP SUM	
68	157553	BRIDGE REMOVAL, LOCATION C	LS	LUMP SUM	LUMP SUM	
69	157554	BRIDGE REMOVAL, LOCATION D	LS	LUMP SUM	LUMP SUM	
70	BLANK					
71	157566	BRIDGE REMOVAL (PORTION), LOCATION F	LS	LUMP SUM	LUMP SUM	
72	157567	BRIDGE REMOVAL (PORTION), LOCATION G	LS	LUMP SUM	LUMP SUM	
73	010987	SURVEY OF EXISTING NON HIGHWAY FACILITIES	LS	LUMP SUM	LUMP SUM	
74	160101	CLEARING AND GRUBBING	LS	LUMP SUM	LUMP SUM	
75	170101	DEVELOP WATER SUPPLY	LS	LUMP SUM	LUMP SUM	
76	190101	ROADWAY EXCAVATION	M3	161 000		
77	190106	ROADWAY EXCAVATION (TYPE Z-3) (AERIALY DEPOSITED LEAD)	M3	120		
78	190108	ROADWAY EXCAVATION (TYPE Y-2) (AERIALY DEPOSITED LEAD)	M3	12 600		
79	190110	LEAD COMPLIANCE PLAN	LS	LUMP SUM	LUMP SUM	
80 (F)	192003	STRUCTURE EXCAVATION (BRIDGE)	M3	2381		

**ENGINEER'S ESTIMATE  
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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
81 (F)	192020	STRUCTURE EXCAVATION (TYPE D)	M3	3296		
82 (F)	192026	STRUCTURE EXCAVATION (PUMPING PLANT)	M3	3905		
83 (F)	192027	STRUCTURE BACKFILL (PUMPING PLANT)	M3	2400		
84 (F)	192037	STRUCTURE EXCAVATION (RETAINING WALL)	M3	2349		
85 (F)	192040	STRUCTURE EXCAVATION (LAGGING WALL)	M3	6964		
86 (F)	192050	STRUCTURE EXCAVATION (TIEBACK WALL)	M3	383		
87 (F)	193003	STRUCTURE BACKFILL (BRIDGE)	M3	4668		
88 (F)	193009	STRUCTURE BACKFILL (LAGGING WALL)	M3	2503		
89 (F)	193013	STRUCTURE BACKFILL (RETAINING WALL)	M3	3272		
90 (F)	193026	STRUCTURE BACKFILL (TIEBACK WALL)	M3	11		
91	193030	PERVIOUS BACKFILL MATERIAL	M3	22.7		
92	193114	SAND BACKFILL	M3	320		
93 (F)	193119	LEAN CONCRETE BACKFILL	M3	13		
94	010988	LIGHTWEIGHT MATERIAL (CELLULAR CONCRETE)	M3	130		
95 (F)	197021	EARTH RETAINING STRUCTURE, LOCATION A	M2	685		
96 (F)	197022	EARTH RETAINING STRUCTURE, LOCATION B	M2	325		
97 (F)	197023	EARTH RETAINING STRUCTURE, LOCATION C	M2	650		
98 (F)	197024	EARTH RETAINING STRUCTURE, LOCATION D	M2	325		
99	198001	IMPORTED BORROW	M3	103 000		
100	198009	IMPORTED BORROW (LIGHTWEIGHT AGGREGATE)	M3	11 000		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
101	010989	GEOSYNTHETIC REINFORCED EMBANKMENT	M2	3650		
102	010990	SETTLEMENT INSTRUMENTATION	LS	LUMP SUM	LUMP SUM	
103	010991	GROUND IMPROVEMENT	M3	13 500		
104 (S)	010992	EROSION CONTROL (NETTING)	M2	1500		
105 (S)	203003	STRAW (EROSION CONTROL)	TONN	20		
106 (S)	203014	FIBER (EROSION CONTROL)	KG	3200		
107 (S)	203021	FIBER ROLLS	M	7800		
108 (S)	203024	COMPOST (EROSION CONTROL)	M3	80		
109 (S)	203026	MOVE-IN/MOVE-OUT (EROSION CONTROL)	EA	8		
110 (S)	203045	PURE LIVE SEED (EROSION CONTROL)	KG	360		
111 (S)	203061	STABILIZING EMULSION (EROSION CONTROL)	KG	710		
112	BLANK					
113 (S)	010993	50 MM SPRINKLER CONTROL CONDUIT	M	130		
114	208023	75 MM GALVANIZED STEEL PIPE (SUPPLY LINE)	M	130		
115	208038	NPS 3 SUPPLY LINE (BRIDGE)	M	155		
116 (S)	010994	200 MM PLASTIC PIPE (PR200) (RECLAIMED WATER)	M	580		
117 (S)	208304	WATER METER	EA	2		
118 (S)	208731	200 MM CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONDUIT	M	490		
119 (S)	010995	450 MM CORRUGATED HIGH DENSITY POLYETHYLENE CONDUIT PIPE (RECLAIMED WATER)	M	33		
120 (S)	208909	EXTEND 200 MM CONDUIT	M	18		

**ENGINEER'S ESTIMATE  
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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
121	250401	CLASS 4 AGGREGATE SUBBASE	M3	34 000		
122	260201	CLASS 2 AGGREGATE BASE	M3	4340		
123	260301	CLASS 3 AGGREGATE BASE	M3	14 600		
124	280000	LEAN CONCRETE BASE	M3	9190		
125	290201	ASPHALT TREATED PERMEABLE BASE	M3	2070		
126	390102	ASPHALT CONCRETE (TYPE A)	TONN	65 100		
127	390106	ASPHALT CONCRETE (OPEN GRADED)	TONN	9100		
128	390108	ASPHALT CONCRETE BASE (TYPE A)	TONN	8050		
129	394002	PLACE ASPHALT CONCRETE (MISCELLANEOUS AREA)	M2	6570		
130	394044	PLACE ASPHALT CONCRETE DIKE (TYPE C)	M	130		
131	394048	PLACE ASPHALT CONCRETE DIKE (TYPE E)	M	6310		
132	394049	PLACE ASPHALT CONCRETE DIKE (TYPE F)	M	650		
133	394054	SHOULDER RUMBLE STRIP (AC, GROUND-IN INDENTATIONS)	STA	37		
134	395000	LIQUID ASPHALT (PRIME COAT)	TONN	14		
135	401000	CONCRETE PAVEMENT	M3	6490		
136	404092	SEAL PAVEMENT JOINT	M	13 300		
137 (S)	040914	760 MM CAST-IN-DRILLED-HOLE CONCRETE PILING	M	4984		
138 (S)	040915	914 MM CAST-IN-DRILLED-HOLE CONCRETE PILING	M	50		
139	490700	FURNISH PILING (CLASS 900) (ALTERNATIVE W)	M	10 512		
140 (S)	490701	DRIVE PILE (CLASS 900) (ALTERNATIVE W)	EA	462		

**ENGINEER'S ESTIMATE  
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Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
141	BLANK					
142	BLANK					
143	490772	FURNISH PILING (CLASS 625) (ALTERNATIVE W)	M	13 440		
144 (S)	490773	DRIVE PILE (CLASS 625) (ALTERNATIVE W)	EA	626		
145	499030	FURNISH CAST-IN-STEEL-SHELL CONCRETE PILING (610 MM)	M	584		
146 (S)	499031	DRIVE CAST-IN-STEEL-SHELL CONCRETE PILE (610 MM)	EA	24		
147 (S)	500001	PRESTRESSING CAST-IN-PLACE CONCRETE	LS	LUMP SUM	LUMP SUM	
148 (S)	500050	TIEBACK ANCHOR	EA	82		
149 (F)	510051	STRUCTURAL CONCRETE, BRIDGE FOOTING	M3	1817		
150 (F)	510053	STRUCTURAL CONCRETE, BRIDGE	M3	11 444		
151 (F)	510060	STRUCTURAL CONCRETE, RETAINING WALL	M3	3314		
152 (F)	040916	STRUCTURAL CONCRETE, SOUND WALL FOOTING	M3	406		
153 (F)	510069	STRUCTURE CONCRETE (PUMPING PLANT)	M3	720		
154 (F)	510072	STRUCTURAL CONCRETE, BARRIER SLAB	M3	477		
155 (F)	510085	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE EQ)	M3	23		
156 (F)	510086	STRUCTURAL CONCRETE, APPROACH SLAB (TYPE N)	M3	479		
157	510104	CLASS A CONCRETE (BOX CULVERT)	M3	12		
158 (F)	510502	MINOR CONCRETE (MINOR STRUCTURE)	M3	542		
159 (F)	510700	MINOR CONCRETE (PILE CAP)	M3	226		
160	010996	INSTALL PERCAST MEDALLION PANEL	EA	4		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
161 (F)	511035	ARCHITECTURAL TREATMENT	M2	5027		
162	511106	DRILL AND BOND DOWEL	M	97		
163 (S)	512233	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (25 M - 30 M)	EA	2		
164 (S)	512234	FURNISH PRECAST PRESTRESSED CONCRETE GIRDER (30 M - 35 M)	EA	2		
165 (S)	512401	ERECT PRECAST CONCRETE GIRDER	EA	4		
166 (F)	513501	CONCRETE CLOSURE WALL	M2	280		
167	515020	REFINISH BRIDGE DECK	M2	54		
168 (S-F)	518002	SOUND WALL (MASONRY BLOCK)	M2	4849		
169 (S)	518050	PTFE BEARING	EA	32		
170 (S)	519117	JOINT SEAL (MR 30 MM)	M	6		
171 (S)	519120	JOINT SEAL (MR 15 MM)	M	8		
172 (S)	519127	JOINT SEAL ASSEMBLY (MR 90 MM)	M	43		
173 (S)	519128	JOINT SEAL ASSEMBLY (MR 100 MM)	M	69		
174 (S)	519144	JOINT SEAL (MR 50 MM)	M	123		
175 (S-F)	520102	BAR REINFORCING STEEL (BRIDGE)	KG	2 268 603		
176 (S-F)	520103	BAR REINFORCING STEEL (RETAINING WALL)	KG	929 629		
177 (S-F)	520107	BAR REINFORCING STEEL (BOX CULVERT)	KG	1178		
178 (S-F)	520113	BAR REINFORCING STEEL (PUMPING PLANT)	KG	84 500		
179 (F)	530100	SHOTCRETE	M3	123		
180	540102	TREAT BRIDGE DECK	M2	5040		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
181	540109	FURNISH BRIDGE DECK TREATMENT MATERIAL (LOW ODOR)	L	2290		
182 (F)	560203	FURNISH SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	KG	6656		
183 (S-F)	560204	INSTALL SIGN STRUCTURE (BRIDGE MOUNTED WITH WALKWAY)	KG	6656		
184 (F)	560218	FURNISH SIGN STRUCTURE (TRUSS)	KG	152 200		
185 (S-F)	560219	INSTALL SIGN STRUCTURE (TRUSS)	KG	152 200		
186	560233	FURNISH FORMED PANEL SIGN (OVERHEAD)	M2	547		
187	560234	FURNISH LAMINATED PANEL SIGN (25.4 MM-TYPE A)	M2	74		
188	560238	FURNISH SINGLE SHEET ALUMINUM SIGN (1.6 MM-UNFRAMED)	M2	45		
189	560239	FURNISH SINGLE SHEET ALUMINUM SIGN (2.0 MM-UNFRAMED)	M2	57		
190	560241	FURNISH SINGLE SHEET ALUMINUM SIGN (1.6 MM-FRAMED)	M2	10		
191	560242	FURNISH SINGLE SHEET ALUMINUM SIGN (2.0 MM-FRAMED)	M2	5		
192 (S)	561013	1372 MM CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	M	73		
193 (S)	561015	1524 MM CAST-IN-DRILLED-HOLE CONCRETE PILE (SIGN FOUNDATION)	M	52		
194 (F)	562002	METAL (BARRIER MOUNTED SIGN)	KG	110		
195 (F)	010997	METAL (SOUND WALL MOUNTED SIGN)	KG	700		
196	566011	ROADSIDE SIGN - ONE POST	EA	80		
197	566012	ROADSIDE SIGN - TWO POST	EA	10		
198	568001	INSTALL SIGN (STRAP AND SADDLE BRACKET METHOD)	EA	4		
199	568016	INSTALL SIGN PANEL ON EXISTING FRAME	M2	43		
200	620910	450 MM ALTERNATIVE PIPE CULVERT (TYPE A)	M	3280		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
201	620911	450 MM ALTERNATIVE PIPE CULVERT (TYPE B)	M	230		
202	620914	600 MM ALTERNATIVE PIPE CULVERT (TYPE A)	M	1340		
203	620915	600 MM ALTERNATIVE PIPE CULVERT (TYPE B)	M	500		
204	620919	750 MM ALTERNATIVE PIPE CULVERT	M	4.8		
205	620925	900 MM ALTERNATIVE PIPE CULVERT (TYPE A)	M	680		
206	620926	900 MM ALTERNATIVE PIPE CULVERT (TYPE B)	M	16		
207	620929	975 MM ALTERNATIVE PIPE CULVERT	M	1		
208	620931	1050 MM ALTERNATIVE PIPE CULVERT (TYPE A)	M	150		
209	620932	1050 MM ALTERNATIVE PIPE CULVERT (TYPE B)	M	63		
210	620933	1200 MM ALTERNATIVE PIPE CULVERT	M	66		
211	681066	150 MM PLASTIC PIPE	M	130		
212	010998	200 MM PLASTIC PIPE	M	34		
213	641132	300 MM PLASTIC PIPE	M	96		
214	010999	457 MM HIGH DENSITY POLYETHYLENE PIPE (OPEN TRENCH)	M	13		
215	011000	533 MM HIGH DENSITY POLYETHYLENE PIPE (OPEN TRENCH)	M	220		
216	011001	762 MM HIGH DENSITY POLYETHYLENE PIPE CONCRETE CASING (OPEN TRENCH)	M	53		
217	011002	457 MM POLYVINYL CHLORIDE PIPE (OPEN TRENCH)	M	250		
218	654329	900 MM REINFORCED CONCRETE PRESSURE PIPE (CLASS III)	M	190		
219	011003	1050 MM REINFORCED CONCRETE PRESSURE PIPE (CLASS III)	M	80		
220	011004	JACKED 300 MM REINFORCED CONCRETE PIPE (UNDERDRAIN)	M	40		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
221	655365	JACKED 450 MM REINFORCED CONCRETE PIPE (CLASS III)	M	36		
222	656360	JACKED 1200 MM REINFORCED CONCRETE PIPE (CLASS III, RUBBER GASKET JOINT)	M	40		
223	656361	JACKED 1500 MM REINFORCED CONCRETE PIPE (CLASS III, RUBBER GASKET JOINT)	M	75		
224	664008	300 MM CORRUGATED STEEL PIPE	M	130		
225	667050	525 MM X 375 MM CORRUGATED STEEL PIPE ARCH (2.01 MM THICK)	M	2.8		
226	681132	GEOCOMPOSITE DRAIN	M2	499		
227	681134	80 MM PLASTIC PIPE (EDGE DRAIN)	M	4680		
228	681137	80 MM PLASTIC PIPE (EDGE DRAIN OUTLET)	M	260		
229	011005	DRAINAGE WICK	M	91 100		
230	682049	CLASS 3 PERMEABLE MATERIAL (BLANKET)	M3	17 000		
231	685062	150 MM ALTERNATIVE PIPE UNDERDRAIN	M	2250		
232	685067	200 MM ALTERNATIVE PIPE UNDERDRAIN	M	2700		
233	685070	300 MM ALTERNATIVE PIPE UNDERDRAIN	M	95		
234	011006	450 MM ALTERNATIVE SLOTTED PIPE	M	970		
235	703271	450 MM CORRUGATED STEEL PIPE RISER (2.01 MM THICK)	M	0.8		
236	703450	WELDED STEEL PIPE CASING (BRIDGE)	M	66		
237	011007	305 MM WELDED STEEL PIPE (BURIED PIPE)	M	82		
238	011008	305 MM WELDED STEEL PIPE (IN BRIDGE)	M	78		
239	705336	450 MM ALTERNATIVE FLARED END SECTION	EA	10		
240	707133	900 MM PRECAST CONCRETE PIPE INLET	M	4		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
241	011009	203 MM HIGH DENSITY POLYETHYLENE PIPE (JACK AND BORE)	M	23		
242	011010	533 MM HIGH DENSITY POLYETHYLENE PIPE (MICROTUNNELING)	M	85		
243	011011	457 MM DUCTILE IRON PIPE (MICROTUNNELING)	M	170		
244	011012	CONSTRUCT MANHOLE (SEWER)	EA	8		
245	721010	ROCK SLOPE PROTECTION (BACKING NO. 1, METHOD B)	M3	48		
246 (F)	721810	SLOPE PAVING (CONCRETE)	M3	522		
247	011013	GABION-FACED REINFORCED EMBANKMENT	M3	1090		
248	729010	ROCK SLOPE PROTECTION FABRIC	M2	96		
249	731502	MINOR CONCRETE (MISCELLANEOUS CONSTRUCTION)	M3	760		
250 (F)	731517	MINOR CONCRETE (GUTTER)	M3	111		
251	011014	MINOR CONCRETE (BROOM FINISH)	M3	280		
252 (S)	740500	DRAINAGE PUMPING EQUIPMENT	LS	LUMP SUM	LUMP SUM	
253 (S)	741001	PUMPING PLANT ELECTRICAL EQUIPMENT	LS	LUMP SUM	LUMP SUM	
254 (S-F)	750001	MISCELLANEOUS IRON AND STEEL	KG	46 228		
255 (S-F)	750500	MISCELLANEOUS METAL	KG	1742		
256 (S-F)	750501	MISCELLANEOUS METAL (BRIDGE)	KG	2800		
257 (S-F)	750503	MISCELLANEOUS METAL (RESTRAINER)	KG	355		
258 (S-F)	750520	PUMPING PLANT METAL WORK	KG	10 330		
259 (S)	800382	CHAIN LINK FENCE (TYPE CL-0.9, VINYL-CLAD)	M	260		
260 (S-F)	800392	CHAIN LINK FENCE (TYPE CL-1.8, VINYL-CLAD)	M	390		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
261 (S)	800701	WOOD FENCE	M	150		
262 (S)	802595	3.0 M CHAIN LINK GATE (TYPE CL-1.8)	EA	2		
263 (S)	802596	3.7 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
264 (S)	802674	5.5 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
265 (S)	011015	5.1 M CHAIN LINK GATE (TYPE CL-1.8)	EA	1		
266	810116	SURVEY MONUMENT (TYPE D)	EA	12		
267	820110	MILEPOST MARKER	EA	8		
268	700617	DRAINAGE INLET MARKER	EA	32		
269	820141	OBJECT MARKER (TYPE K-1)	EA	4		
270	820151	OBJECT MARKER (TYPE L-1)	EA	37		
271 (S)	832003	METAL BEAM GUARD RAILING (WOOD POST)	M	1020		
272 (S-F)	833032	CHAIN LINK RAILING (TYPE 7)	M	595		
273	BLANK					
274 (F)	833140	CONCRETE BARRIER (TYPE 26)	M	212		
275 (S)	839310	DOUBLE THRIE BEAM BARRIER	M	60		
276 (S)	011016	REPLACE CONCRETE BARRIER (PULL BOX)	M	11		
277 (S-F)	839521	CABLE RAILING	M	40		
278 (S)	839541	TRANSITION RAILING (TYPE WB)	EA	19		
279 (S)	839568	TERMINAL ANCHOR ASSEMBLY (TYPE SFT)	EA	25		
280 (S)	839584	ALTERNATIVE IN-LINE TERMINAL SYSTEM	EA	6		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
281 (S)	839585	ALTERNATIVE FLARED TERMINAL SYSTEM	EA	29		
282 (S)	839591	CRASH CUSHION, SAND FILLED	EA	6		
283 (S)	839601	CRASH CUSHION (TYPE CAT)	EA	1		
284 (S)	839602	CRASH CUSHION (TYPE CAT) BACKUP	EA	1		
285 (S)	839603	CRASH CUSHION (ADIEM)	EA	2		
286 (S)	839604	CRASH CUSHION (REACT 9CBB)	EA	2		
287	839701	CONCRETE BARRIER (TYPE 60)	M	840		
288	839703	CONCRETE BARRIER (TYPE 60C)	M	1960		
289 (F)	839704	CONCRETE BARRIER (TYPE 60D)	M	2184		
290	839705	CONCRETE BARRIER (TYPE 60E)	M	1360		
291 (F)	839717	CONCRETE BARRIER (TYPE 732 MODIFIED)	M	1277		
292 (F)	040917	CONCRETE BARRIER (TYPE 742 MOD)	M	544		
293 (F)	839726	CONCRETE BARRIER (TYPE 736A)	M	165		
294 (F)	040918	CONCRETE BARRIER (TYPE 736A MOD)	M	357		
295 (S)	840515	THERMOPLASTIC PAVEMENT MARKING	M2	420		
296 (S)	840561	100 MM THERMOPLASTIC TRAFFIC STRIPE	M	32 000		
297 (S)	840562	150 MM THERMOPLASTIC TRAFFIC STRIPE	M	350		
298 (S)	840563	200 MM THERMOPLASTIC TRAFFIC STRIPE	M	8100		
299 (S)	840564	200 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 3.66 M - 0.92 M)	M	4510		
300 (S)	840567	100 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 1.83 M - 0.30 M)	M	95		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
301 (S)	840571	100 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 5.18 M - 2.14 M)	M	1060		
302 (S)	011017	150 MM THERMOPLASTIC TRAFFIC STRIPE (BROKEN 2.44 M - 1.22 M)	M	60		
303 (S)	850101	PAVEMENT MARKER (NON-REFLECTIVE)	EA	7190		
304 (S)	850111	PAVEMENT MARKER (RETROREFLECTIVE)	EA	5960		
305 (S)	860251	SIGNAL AND LIGHTING (LOCATION 1)	LS	LUMP SUM	LUMP SUM	
306 (S)	860252	SIGNAL AND LIGHTING (LOCATION 2)	LS	LUMP SUM	LUMP SUM	
307 (S)	860253	SIGNAL AND LIGHTING (LOCATION 3)	LS	LUMP SUM	LUMP SUM	
308 (S)	860298	SIGNAL AND LIGHTING (STAGE CONSTRUCTION)	LS	LUMP SUM	LUMP SUM	
309 (S)	860402	LIGHTING (CITY STREET)	LS	LUMP SUM	LUMP SUM	
310 (S)	011018	LIGHTING AND SIGN ILLUMINATION (STAGE CONSTRUCTION)	LS	LUMP SUM	LUMP SUM	
311 (S)	860460	LIGHTING AND SIGN ILLUMINATION	LS	LUMP SUM	LUMP SUM	
312 (S)	011019	TRAFFIC OPERATIONS SYSTEM	LS	LUMP SUM	LUMP SUM	
313 (S)	011020	CAMERA UNIT	EA	6		
314 (S)	011021	PAN/TILT UNIT	EA	6		
315 (S)	011022	CAMERA CONTROL UNIT	EA	4		
316 (S)	011023	VIDEO ENCODER UNIT	EA	4		
317 (S)	011024	INTEGRATED SERVICES DIGITAL NETWORK TERMINAL ADAPTER UNIT	EA	4		
318 (S)	011025	EXTINGUISHABLE MESSAGE SIGN PANEL (LED)	EA	9		
319 (S)	011026	GENERAL PACKET RADIO SYSTEM (GPRS) WIRELESS MODEM ASSEMBLY	EA	9		
320 (S)	011027	LONG LEAD-IN CABLE LOOP DETECTOR (LLLD) SENSOR UNIT	EA	4		

**ENGINEER'S ESTIMATE  
04-016014**

Item No.	Item Code	Item Description	Unit of Measure	Estimated Quantity	Unit Price	Item Total
321 (S)	011028	FIBER OPTIC CONDUIT	LS	LUMP SUM	LUMP SUM	
322	BLANK					
323	073000	TEMPORARY CULVERT	M	260		
324	011849	TEMPORARY INLET	EA	10		
325	011850	TEMPORARY FLARED END SECTION	EA	8		
326	011851	TEMPORARY CRASH CUSHION (ADIEM)	EA	2		
327 (S)	490655	400 MM CAST-IN-DRILLED-HOLE CONCRETE PILING	M	174		
328	620904	300 MM ALTERNATIVE PIPE CULVERT	M	8		
329	656359	JACKED 1050 MM REINFORCED CONCRETE PIPE (CLASS III, RUBBER GASKET JOINT)	M	130		
330	664008	450 MM CORRUGATED STEEL PIPE (1.63 MM THICK)	M	3		
331	705334	300 MM ALTERNATIVE FLARED END SECTION	EA	5		
332	705337	600 MM ALTERNATIVE FLARED END SECTION	EA	16		
333	999990	MOBILIZATION	LS	LUMP SUM	LUMP SUM	

**TOTAL BID (A):** = \_\_\_\_\_

**TOTAL BID (B):**

**\$14,600.00** x \_\_\_\_\_ = \_\_\_\_\_

(Cost Per Day) (Enter Working Days Bid)  
(Not To Exceed 1000 Days)

**TOTAL BASIS FOR COMPARISON OF BIDS: (A + B):** = \_\_\_\_\_