

## SPECIAL PROVISIONS

### SECTION 1 - GENERAL

1.1 Drawings and Specifications - These documents are for the construction of **North Norco Channel, Stage 10**, located in the city of Norco, Riverside County, California. This work shall conform with the contract drawings indexed on the cover sheet of the drawings included herewith.

Referenced standard drawings are available on the District web site.

The Contractor shall copy any of the referenced District standard drawings from <http://www.rcflood.org>.

The Contractor shall be responsible to obtain referenced standard plans/drawings of various agencies from their respective office or web site.

References made in these Special Provisions or Detailed Specifications to the "Standard Specifications" refer to the "Greenbook" Standard Specifications for Public Works Construction, current edition, including supplements. Standard Specifications of the American Society for Testing and Materials shall be designated by ASTM and the appropriate number of the standard. Unless otherwise specified, wherever the words "State Standard Specifications" are used in these Special Provisions or Detailed Specifications they shall mean the Standard Specifications of the State of California, Department of Transportation, 2006 edition. Whenever the words "Caltrans Standards" are used they shall mean the Standard Plans of the State of California, Department of Transportation, 2006 edition.

In the event that discrepancies are encountered, the option that provides the method, item or material with the greatest strength or utility shall be chosen, as directed by the Engineer.

Requirements on the construction plans for Portland Cement Concrete are modified to the PCC Class designations, as described in Section 90-1.01 of the 2006 State Standard Specifications, as follows:

Class "A" shall mean Class "2"

Class "B" shall mean Class "3"

Class "C" shall mean Class "4"

Class "D" shall mean Class "1"

In case of conflict between the drawings and the specifications, the drawings shall govern; in case of conflict between the referenced specifications and these specifications, the latter shall govern.

SECTION 2 - TIME OF COMPLETION, DAMAGES AND  
LEGAL HOLIDAYS

2.1 General - The Contractor shall begin work within ten (10) calendar days after the date of receipt of Notice to Proceed from the Engineer and shall diligently prosecute the same to completion before the expiration of

SIXTY (60) WORKING DAYS

from the date of receipt of Notice to Proceed.

2.2 Damages - The Contractor and the District expressly agree that the cost to the District for inspection and superintendence of the work for this contract is \$800.00 per working day.

2.3 Legal Holidays - The Contractor will not be permitted to work on Legal Holidays (Reference Sections 6.02 and 6.06 of the General Provisions), except in cases of emergency as directed by the Engineer.

SECTION 3 - FORCE ACCOUNT PAYMENT

3.1 Labor Surcharge - Attention is directed to the provisions of Section VII, Article 7.03A (1b) of the General Provisions. The labor surcharge percentage to be applied to the actual wages paid as defined in Paragraph 7.03A (1a) will be twenty-four percent (24%).

3.2 Equipment Rental - Attention is directed to the provisions of Section VII, Article 7.03A (3) of the General Provisions. The equipment rental rates to be applied will be the rates published by the California Department of Transportation and in effect at the time of the award of the contract. A copy of said Equipment Rental Rates is on file at the District Office.

SECTION 4 - PROTECTION OF EXISTING UTILITIES

4.1 General - All existing underground utility lines, power poles and overhead wiring shall be protected in place at all times, except as noted otherwise on the plans. Any damage to utilities caused by the Contractor's operation shall be repaired or replaced at the Contractor's expense.

Prior to the commencement of any construction activities, the Contractor shall contact all utility companies and local municipalities servicing the project area to review as-built utility drawings and determine appropriate means of protecting utilities.

At the discretion of the Engineer, the Contractor may be required to verify, by potholing, the location of potentially affected utilities.

SECTION 5 - PROJECT SITE MAINTENANCE

Through all phases of construction, the Contractor shall comply with the provisions of Section 7-8 of the Standard Specifications. Before final acceptance of the work, the Contractor

shall clean the work and the site of the work of all falsework, temporary structures, other construction materials and equipment, excess materials and rubbish, and shall leave the work and the site in a neat and presentable condition. Such final cleanup work shall be performed within the time specified for completion of all of the work.

## SECTION 6 - SPECIAL REQUIREMENTS

6.1 National Pollutant Discharge Elimination System (NPDES) – The Contractor shall comply with the requirements of Board Order No. R8-2010-0033 (NPDES No. CAS618033), NPDES Area-Wide Municipal Stormwater Permit, hereafter referred to in this Section as the "Permit", issued by the California Regional Water Quality Control Board (CRWQCB) – Santa Ana Region. This Permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. The Contractor shall prepare and implement a Stormwater Pollution Prevention Plan (SWPPP) in accordance with Section 29 "Stormwater and Non-Stormwater Pollution Control" of the Detailed Specifications.

**The Contractor's attention is directed to: 1) Section 29.2 "General Requirements" which allows the Engineer to withhold progress payments if the Contractor fails to fully implement Section 29 "Stormwater and Non-Stormwater Pollution Control" or is deemed to be in non-compliance with the provisions of the Permit; 2) Section 29.3 "PRDs Preparation and Approval" which requires that the PRDs be prepared and approved prior to the Pre-Construction meeting; and 3) Section 29.6 "SWPPP Implementation" which allows the Engineer to suspend construction operations if the Contractor fails to implement the approved SWPPP and any amendments thereto.**

6.2 Sanitation - Sewage flows shall not be interrupted. Should the Contractor disrupt existing sewer facilities, sewage shall be conveyed in closed conduits and disposed of in a sanitary sewer system. If pumping is required it shall be done at the expense of the Contractor. A backup pumping system with equal capacity shall be provided at all times. Sewage shall not be permitted to flow in trenches or be covered by backfill.

6.3 Confined Space Compliance - The Contractor shall comply with all Cal/OSHA safety regulations including regulations concerning confined space and for maintaining a safe working environment for Contractor and District employees on the site. The Contractor shall develop and maintain a confined space procedure specific to this contract that complies with the requirements contained in California Code of Regulations, Title 8, Section 5158, Other Confined Space Operations and the District Confined Space Procedure, SOM-18. A copy of SOM-18 can be obtained from the District office, 1995 Market Street, Riverside upon request.

Within five (5) days after the award of the contract, the Contractor shall submit three (3) copies of the procedure to the Engineer for review and approval. The Contractor shall allow five (5) working days for the Engineer to review the procedure. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the procedure within three (3) working days of receipt of the Engineer's comments and shall allow four (4) working days for the Engineer to review the revisions. The Contractor must submit three (3) copies of the approved procedure to the Engineer prior to the pre-construction meeting.

The procedure shall provide for recording of data to develop a history of acceptable atmosphere within the confined space. That history will include:

1. Calibration schedule of a direct reading confined space meter by trained personnel.
2. Daily monitoring and recording of the confined space atmosphere with a calibrated direct reading confined space meter.
3. Records of Items 1 and 2 shall be maintained onsite and copies given to the Engineer.
4. The records shall indicate if readings are of natural or mechanically enhanced ventilation.

In addition, the procedure shall include daily tours of the job site with the Engineer to ensure inlets to the confined space are free of obstruction or substances that might affect the atmosphere of the confined space.

The Contractor will be required to keep a direct reading confined space meter onsite for the duration of the contract. The meter shall be calibrated according to the schedule specified in the Contractor's confined space procedure and shall be made available for the Engineer's use upon request.

6.4 Heavy Equipment Working Hours - Heavy construction equipment shall be allowed to work from 7:00 a.m. to 3:30 p.m. each normal working day, unless otherwise approved by the Engineer.

6.5 Encroachment Permits - The Contractor is required to obtain an encroachment permit from the City of Norco for work within City right of way. The City of Norco will not require the Contractor to pay a fee for the encroachment permit. A copy of the encroachment permit shall be provided to the Engineer prior to commencement of work.

6.6 Toxic Material Disposal - Toxic materials including oil, fuel oil, gasoline, coolant, fluid filters and other contaminants shall not be discharged within the project site. All such materials shall be transported offsite and disposed of at a County approved facility.

6.7 Survey Crew - The Contractor shall notify the Engineer in writing at least 48 hours prior to new construction staking.

Survey Crews will be available Monday through Thursday from 7:00 a.m. to 3:30 p.m., with a half-hour off for lunch. If the Contractor requires the Survey Crew to work beyond the specified time mentioned above, it shall be considered as overtime and shall be paid by the Contractor at 1.5 times the Survey Crew's hourly rates.



6.8 Survey Monuments - The Contractor shall salvage and give to the District all survey monuments and wells removed during construction. The District will reset monuments after construction.

6.9 Job Trailer Site - The Contractor is required to provide a site and install an office trailer for District personnel. This trailer shall be in good condition and located in a place acceptable to the District. The trailer shall be for the sole use of the District and shall not be used by the Contractor for any activity, including storage. The Contractor shall make provisions for the privacy and security of the office, and provide air conditioning, drinking water and electrical service. The Contractor shall also provide two office chairs and a desk suitable for reviewing plans. The Contractor shall pay the monthly billings for these services. The trailer shall be fully operational and available to District personnel on the first day of work. Should the trailer or office not be available and in working condition, it is agreed by both parties at the time of entering this contract that damages in the amount of \$3,000 per month shall be assessed. It is agreed that this amount may be prorated and shall be deducted from the first contract payment and any successive payments covering any period that the facilities are unavailable.

6.10 Construction Tolerances – Variation in alignment, grade and dimensions of the structures and structural components from the established alignment, grade and dimensions shown on the drawings shall be within the tolerances specified in the following:

|                                          |                                                                                                        |                                                                 |
|------------------------------------------|--------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| Departure from established alignment     |                                                                                                        | 2 inches on tangents<br>4 inches on curves                      |
| Departure from established profile grade | Channel bottoms, channel sideslopes in cut and fill, levee and access road sideslopes in cut           | Zero <u>above</u> and 3 inches <u>below</u> the specified grade |
|                                          | Top surfaces of levees and access roads in both cut and fill, levee and access road sideslopes in fill | Zero <u>below</u> and 3 inches <u>above</u> the specified grade |

Regardless of the construction tolerances specified, the excavation and grading shall be performed so that the finished surfaces are in uniform planes with no abrupt breaks in the surface.

|                                                         |  |                                                                           |
|---------------------------------------------------------|--|---------------------------------------------------------------------------|
| Departure from established alignment                    |  | 2 inches on tangents<br>4 inches on curves                                |
| Departure from established profile grade                |  | 1 inch                                                                    |
| Variation in thickness of lining, sideslopes and invert |  | 5 percent of specified thickness provided average thickness is maintained |
| Variation from specified width of section at any height |  | 0.0025 times specified width W plus 1 inch.<br>0.0025W + 1 inch           |

|                                           |                      |                                                                |
|-------------------------------------------|----------------------|----------------------------------------------------------------|
| Variation from specified height of lining |                      | 0.005 times specified height H plus 1 inch.<br>0.005H + 1 inch |
| Variation in surfaces (gradual)           | Invert<br>Sideslopes | ¼ inch in 10 feet<br>½ inch in 10 feet                         |
| Variation in surfaces (abrupt)            |                      | ¼ inch                                                         |

Gradual Variation tolerance shall be measured by placing a 10-foot straightedge anywhere on the finished concrete structure within 72 hours after concrete placement. The gap at any point between the straightedge and the concrete shall not exceed the specified amount.

|                                                                                                          |                                               |                                          |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------|------------------------------------------|
| Departure from established alignment                                                                     |                                               | 1 inch on tangents<br>2 inches on curves |
| Departure from established profile grade                                                                 |                                               | 1 inch                                   |
| Inside dimensions                                                                                        |                                               | 0.005 times specified dimension          |
| Variation from the plumb or the specified batter in the lines and surfaces of walls, piers and in arises | Exposed, in 10 feet<br>Backfilled, in 10 feet | ½ inch<br>1 inch                         |
| Variation in cross-sectional dimensions                                                                  |                                               | Minus ¼ inch<br>Plus ½ inch              |
| Variation in surfaces (gradual)                                                                          | Invert<br>Soffits, Walls, Sideslopes          | ¼ inch in 10 feet<br>½ inch in 10 feet   |
| Variation in surfaces (abrupt)                                                                           |                                               | ¼ inch                                   |

|                                                                              |                                                                       |                                         |
|------------------------------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------|
| Variance from indicated position                                             | Spacing between adjacent bars and the distance between layers of bars | one bar diameter nor more than one inch |
| Concrete cover measured perpendicular to steel in the direction of tolerance |                                                                       | ¼ inch                                  |

6.11 Surplus Excavated Material - Any stockpiling, grading or disposal of material outside of the project limits is not covered under the District's permits and is the sole responsibility of the Contractor. Regulatory permits that may be required include, but are not limited to, Federal Clean Water Act (Sections 401 and 404), California Fish and Game Code (Section 1602) and Federal/State Endangered Species Acts. All costs to obtain these Regulatory Permits shall be borne by the Contractor.

6.12 Project Signs - Supplementing Section 8.07 of the General Provisions, the Contractor shall be required to provide two new project signs. The Contractor shall install and maintain the project signs at locations specified by the Engineer, with painting and lettering as shown in Appendix "B" of these Special Provisions. The signs shall be installed as directed by the

Engineer within five (5) days after District issuance of the Notice to Proceed. Upon completion of construction, the signs shall be removed.

6.13 Liability Insurance – The Contractor's attention is directed to Section 8.02, Insurance Hold Harmless, of the General Provisions. The City of Norco shall also be named as additional insureds with the liability insurance coverage required to be maintained by the Contractor.

6.14 Temporary Construction Easement - The Contractor's attention is directed to Appendix "D" of these Special Provisions which shows the limits of the Temporary Construction Easement.

6.15 1602 Permit Compliance - An operation of law letter was issued by the California Department of Fish and Wildlife (CDFW) to Bill Thompson of the City of Norco on September 18, 2012. Transfer of the authorization to the District was approved by CDFW on May 23, 2013. A copy of the CDFW letter, transfer approval and the permit notification including attachments will be provided to the Contractor prior to start of construction. The Contractor shall comply with the following conditions described in the letter:

1. A copy of the CDFW letter, transfer approval email and the permit notification shall be kept onsite at all times.
2. Coordinate with District for District to conduct pre-construction surveys for nesting birds if project activities and/or vegetation removal occurs during the nesting bird season. See Section 6.21 "Nesting Bird Pre-Construction Survey" for further details.
3. Coordinate with the District for District to conduct pre-construction burrowing owl surveys no more than 30 days prior to ground disturbance. See Sections 6.19 "Burrowing Owl Pre-Construction Survey" and Section 6.20 "Burrowing Owl Avoidance Measures" for further details.
4. Implement standard best management practices as described in Section 29.6 "SWPPP Implementation".

6.16 404 Permit Compliance - A Section 404 permit was issued by the U.S. Army Corps of Engineers (Corps) to Doug Jacobsen of Realty Bancorp Equities, Inc. Transfer of the permit to the District was approved by the Corps on May 30, 2013. The Contractor shall keep onsite at all times a copy of the permit and the transfer which will be provided to the Contractor prior to start of construction. The Contractor shall comply with General Condition Nos. 5 and 6 and Special Condition Nos. 3 through 5, which state:

1. **General Condition 5** - If a conditioned water quality certification has been issued for your project, you must comply with the conditions specified in the certification as special conditions to this permit. See Section 6.17 "401 Certification Compliance" for further details.

2. **General Condition 6** - You must allow representatives from this office to inspect the authorized activity at any time deemed necessary to ensure that it is being or has been accomplished with the terms and conditions of your permit.
3. **Special Condition 3** - No activity in waters of the United States may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see Section 307 of the Clean Water Act).
4. **Special Condition 4** - The Permittee (the Contractor) shall implement all appropriate, standard Best Management Practices to ensure that toxic materials, silt, debris, or excessive eroded materials do not enter waters of the United States. See Section 29.6 "SWPPP Implementation".
5. **Special Condition 5** - Pursuant to 36 Code of Federal Regulations (CFR) § 800.13, in the event of any discoveries during construction of either human remains, archaeological deposits, or any other type of historic property, the Permittee shall notify the Corps' Archeological Staff within 24-hours (Steve Dribble at 213.452.3861). The Permittee shall suspend all work in any area(s) where potential cultural resources are discovered. The Permittee shall not resume construction in the area surrounding the potential cultural resources until the Corps Regulatory Division re-authorizes project construction, per 36 CFR § 800.13. The Contractor shall comply with Section 6.18 "Accidental Discovery".

6.17 401 Certification Compliance - A Section 1 Water Quality Certification (WQC) was issued by the Santa Ana Regional Water Quality Control Board (RWQCB) to Doug Jacobsen of Realty Bancorp Equities, Inc. Transfer of the permit to the District was approved by the RWQCB on June 24, 2013. The Contractor shall keep onsite at all times a copy of the WQC and the transfer which will be provided to the Contractor prior to start of construction. The Contractor shall comply with Condition Nos. 4 through 7, 9 and 10, which state:

1. **Condition 4** - All material generated from construction activities associated with this project shall be managed appropriately. This shall include identifying all potential pollution sources within the scope of work for this project, and incorporating all necessary pollution prevention Best Management Practices (BMPs) as they relate to each potential pollution source identified.
2. **Condition 5** - BMPs shall be implemented according to the requirements of Order No. R8-2010-0033 (NPDES Permit No. CAS618033), commonly known as the Riverside County Municipal Storm Water Permit, and subsequent iterations thereof. See Section 29.6 "SWPPP Implementation".
3. **Condition 6** - Substances resulting from project-related activities that could be harmful to aquatic life, including, but not limited to, petroleum lubricants and fuels, cured and uncured cements, epoxies, paints and other protective coating materials, Portland cement concrete or asphalt concrete, and washings and

cuttings thereof, shall not be discharged to soils or waters of the United States. All waste concrete shall be removed.

4. **Condition 7** - Motorized equipment shall not be maintained or parked within or near any stream crossing, channel or lake margin in such a manner that petroleum products or other pollutants from the equipment may enter these areas under any flow conditions. Vehicles shall not be driven or equipment operated in waters of the United State onsite, except as necessary to complete the proposed project. No equipment shall be operated in areas of flowing water.
5. **Condition 9** - The project proponent shall utilize Best Management Practices (BMPs) during project construction to minimize the controllable discharges of sediment and other wastes to drainage systems or waters of the United States. This project is over one acre. Therefore, coverage under the State Water Resources Control Board's General Permit for Stormwater Discharges Associated with Construction Activity, Water Quality Order No. 2009-0009-DWQ, is required, as is preparation and implementation of a SWPPP to control the discharge of pollutants from the project site. See Section 29.6 "SWPPP Implementation".
6. **Condition 10** - The applicant must comply with the requirements of the applicable Clean Water Act Section 404 permit. See Section 6.16 "404 Permit Compliance" for further details.

6.18 Accidental Discovery - In the event that any human remains, hazardous materials, historical, archaeological, or paleontological resources are accidentally discovered within project limits, the Contractor shall immediately cease all construction or ground disturbance activity in the vicinity of find and notify the Engineer. District will provide the appropriate professional to assess the significance of the discovery and, if necessary, develop appropriate management and treatment measures. **The Contractor shall not resume construction in the affected area without Engineer's approval.**

Per State Health and Safety Code 7050.5, if human remains are encountered during construction, no further disturbance shall occur until the Riverside County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The Riverside County Coroner must be notified within 24 hours by the Engineer. If the County Coroner determines that the remains are not historic, but prehistoric, the Native American Heritage Commission (NAHC) must be contacted by the Engineer to determine the most likely descendent for this area. Once the most likely descendent is determined, treatment of the Native American human remains will proceed pursuant to Public Resources 5097.98. The NAHC may become involved with decisions concerning the disposition of the remains.

Should any of the above mentioned discoveries result in delays to the Contractor's work schedule, the Contractor shall be entitled only to an equivalent extension of time for the completion of the contract, and shall not be entitled to damages due to downtime and idle equipment or additional payments over and above the agreed upon contract prices.

6.19 Burrowing Owl Pre-Construction Survey - In compliance with CEQA and the MSHCP, the District must conduct a presence/absence survey for Burrowing Owl no more than 30 days prior to construction/disturbance. The Contractor shall not commence any work onsite, including equipment staging, clearing, grubbing, etc., until the District determines that Burrowing Owl is absent from the project site, or that an avoidance plan has been initiated should Burrowing Owl be detected onsite. If the Contractor does not commence construction within 30 days of said determination, the Contractor must notify the Engineer that another pre-construction survey is needed.

6.20 Burrowing Owl Avoidance Measures - If any Burrowing Owl is found within the project site during the nesting season (February 1<sup>st</sup> through August 31<sup>st</sup>), the Contractor shall not conduct any construction activities within 250 feet of occupied burrows or nests. Any Burrowing Owl found within the project site that cannot be avoided will be relocated by the District during the non-nesting season (September 1<sup>st</sup> through January 31<sup>st</sup>).

Should Burrowing Owl result in delays to the Contractor's work schedule, the Contractor shall be entitled only to an equivalent extension of time for the completion of the contract, and shall not be entitled to damages due to downtime and idle equipment or additional payments over and above the agreed upon contract prices.

6.21 Nesting Bird Pre-Construction Survey - The removal of potential nesting vegetation shall be conducted outside of the nesting season to avoid impacts to active bird nests. The nesting season is defined as February 1<sup>st</sup> through September 15<sup>th</sup>. If vegetation must be removed during the nesting season, a nesting bird survey of potentially suitable nesting vegetation shall be conducted by the District prior to removal. Surveys will be conducted no more than three (3) days prior to scheduled removals. If active nests are identified, the District will establish a 150 to 500-foot buffer around the vegetation containing the active nest. The vegetation containing the active nest will not be removed, and no grading will occur within the established buffer, until it has been determined that the nest is no longer active (i.e., the juveniles are surviving independent from the nest). If clearing is not conducted within three (3) days of a negative survey, the nesting survey must be repeated to confirm the absence of nesting birds.

Should nesting birds result in delays to the Contractor's work schedule, the Contractor shall be entitled only to an equivalent extension of time for the completion of the contract, and shall not be entitled to damages due to downtime and idle equipment or additional payments over and above the agreed upon contract prices.

## SECTION 7 - SOILS REPORT

In conjunction with the soils investigation report prepared by Southern California Geotechnical dated December 2, 2010, the Contractor's attention is directed to Article 8.08 of the General Provisions. The logs of the soil borings for this report are included for the convenience of the bidders, in conformance with Section 8.08 of the General Provisions, as Appendix "C" of these specifications. The soils report is on file in the District office, 1995 Market Street, Riverside and is available for review upon request.

SECTION 8 - NOT USED

SECTION 9 - PAYMENT

The contract prices shall include full compensation for all costs incurred under these Special Provisions and Detailed Specifications.

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## DETAILED SPECIFICATIONS

### SECTION 10 - MOBILIZATION

10.1 Description - The contract item Mobilization shall consist of expenditures for all preparatory work and operations, including but not limited to, those costs necessary for the movement of personnel, equipment, supplies and incidentals to the project site; for the establishment of all offices, buildings, construction yards and other facilities necessary for work on the project; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site as well as the related demobilization costs anticipated at the completion of the project.

10.2 Payment - The amount credited for Mobilization on each monthly progress payment shall be equal to the total of the amounts credited for work on all the other contract items for that monthly progress payment, up to a cumulative limit of eighty percent (80%) of the lump sum price bid for Mobilization. The remaining twenty percent (20%) of the lump sum price bid for Mobilization will be paid with the final payment.

Payment of the lump sum contract price for Mobilization shall constitute full compensation for all labor, materials, equipment, and all other items necessary and incidental to completion of this item of work.

The deletion of work or the addition of extra work as provided for herein shall not affect the price paid for Mobilization.

### SECTION 11 - WATER CONTROL

11.1 Description - This section covers the contract item Water Control. Watersheds and/or urban runoff areas are tributary to the project site at various locations, but do not necessarily follow the alignment of the project under current conditions. Surface water in varying quantities can be expected at any time of the year, and substantial runoff can be expected during periods of rainfall. Groundwater was indicated at the time of the soils investigation for this project. All bidders shall make their own determination regarding what the surface and/or groundwater conditions will be at the time of construction, and their impact on the bidder's operations and construction phasing.

11.2 Water Control - The contract item Water Control includes the control and/or diversion of surface runoff and flow in the existing channel as well as groundwater within the work area as required to complete the work. All work shall be carried on in areas free of water. Care should be exercised so that runoff or diversion flows do not erode, undermine or otherwise damage either facilities which have been constructed or adjacent private properties. The responsibility for the protection of all existing and proposed improvements lies with the Contractor.

11.3 Measurement and Payment - The methods of controlling both surface and groundwater will be the responsibility of the Contractor. The contract lump sum price paid for Water Control shall include full compensation for all direct and indirect costs incurred under this section, and



for doing all the work involved in controlling surface runoff and groundwater within the construction area, as specified in these Detailed Specifications, and as directed by the Engineer.

Payment will be made on a basis of the percentage of the work completed on the entire project.

#### SECTION 12 - NOT USED

#### SECTION 13 - CLEARING AND MISCELLANEOUS WORK

13.1 Description - This section covers the contract item Clearing and Miscellaneous Work as required for construction of the work. All objectionable materials shall be removed and disposed of outside of the limits of the construction easements and permanent rights of way.

13.2 Clearing and Miscellaneous Work - The contract item Clearing and Miscellaneous Work includes the removal and disposal of all vegetation, trees, roots, stumps, fences, pipes, all abandoned facilities, culverts, rocks, structures, concrete and asphalt excluding those items defined specifically as excavation in the appropriate section.

Included in this item are the following:

1. The sawcut, removal and disposal of existing headwall, wingwalls and slab.
2. The removal and disposal of existing chain link fence.
3. The removal and disposal of existing ½-ton riprap.
4. Adjusting one sewer manhole to grade.

Finally, included in this item are those types of work as shown on the drawings not specified for pay under any other individual contract item.

13.3 Payment - The contract price paid for Clearing and Miscellaneous Work shall be full compensation for all costs incurred under this section.

This payment will be made on a basis of the percentage of work completed on the entire project.

#### SECTION 14 - EARTHWORK

14.1 Description - This section covers the contract items Excavation; Backfill; and Filter Material.

14.2 General Excavation Requirements - Box Excavation shall be in conformance with Section 306 of the Standard Specifications. Channel Excavation shall be in conformance with Section 300-7. Access to trenches shall be in conformance with Section 306-1.1.4 and the

manner of bracing excavations shall be in conformance with Section 306-1.1.6 of the Standard Specifications.

Excavation shall be kept to the minimum widths required for efficient placing of the pipe or structure and the construction of the various other concrete structures. However, for pipe placement the minimum width of trench shall be 24 inches greater than the outside diameter of the pipe. The maximum length of open trench shall be in conformance with Section 306-1.1.2 of the Standard Specifications.

In excavating for surfaces against which concrete is to be placed, care shall be exercised in removing the final lift. Upon completion of excavation surfaces against which concrete is to be placed shall be free of debris, mud or ponded water.

The foundation for all concrete structures including concrete channels and sideslopes will be inspected and tested after excavation. The subgrade shall be compacted to ninety percent (90%) relative compaction prior to the placement of concrete.

Material which will not provide a suitable foundation shall be removed and replaced with compacted select material as directed by the Engineer.

Any overexcavation shall be filled with select material compacted to ninety percent (90%) relative compaction and meeting the material requirements for backfill.

The Contractor shall remove slides and materials eroding into the work, and the slopes and grades refinished to original grades as specified.

The Contractor shall dispose of all surplus excavated material outside of the limits of the construction easements and permanent rights of way.

The removal of rock material from within the excavation paylines which requires the use of blasting or equipment beyond that normally necessary to accomplish the excavation (as determined by the Engineer) shall be paid for in accordance with Section VII, Article 7.03 of the General Provisions. The cost of removal and disposal (including trucking) of rock away from the jobsite will be paid for under the contract item Excavation and no additional compensation will be allowed.

Blasting, when necessary, as approved by the Engineer shall be in accordance with Section 19-2.03 of the State Standard Specifications.

The Contractor's attention is directed to the General Provisions, Section V, Article 5.09 on the use of explosives and Article 5.11 in regard to unforeseen difficulties.

14.3 Excavation - The contract item Excavation covers the five (5) feet over excavation as recommended by the soils report to establish suitable subgrade for placement of backfill as shown on the drawings. The contract item also includes the removal of all material including asphalt, aggregate base, abandoned pipelines and concrete from within the excavation paylines as

specified and as required for the construction and installation of the reinforced concrete box, junction structures, headwall, and transition structure as shown on the drawings, and the disposal of all surplus material.

14.4 General Backfill Requirements - Whenever fill is specified or required (except for pipe backfill) the work shall be performed as set forth in Sections 300-4.1 to 300-4.8 of the Standard Specifications. Backfill for pipe and box shall conform to Section 306-1.3 of the Standard Specifications.

No backfill materials shall be placed against the outside walls of cast-in-place concrete structures until the concrete has developed eighty percent (80%) of its design strength. No fill or traffic will be permitted on the top of any cast-in-place concrete structure until the concrete in the structure has attained its design strength. Compressive strength will be determined by test cylinders taken by the Engineer.

Regardless of the method of densification, backfill material shall not be placed against any reinforced concrete structure until the structure has been inspected and approved for backfilling by the Engineer.

Densification of backfill/fill will be accomplished by mechanical methods as described below. All relative compaction tests will be made by the Engineer in conformance with California Test 216. Whenever relative compaction is specified to be determined by California Test 216, the in-place density may be determined by California Test 231. The wet weight or dry weight basis and English units of measurement may be used at the option of the Engineer.

Mechanical Compaction - Backfill/fill shall be mechanically compacted by means of tamping rollers or other mechanical tampers. Impact-type pavement breakers (stompers) will not be permitted unless otherwise approved by the Engineer.

All backfill/fill material for structures shall be placed in uniform layers and shall be brought up uniformly on each side of the structure. The thickness of each layer of backfill/fill shall not exceed 8 inches before compaction unless otherwise approved by the Engineer. For hand directed mechanical compactors, the thickness of each layer shall not exceed 4 inches before compaction.

Approval to use specific methods and compaction equipment shall not be construed as guaranteeing or implying that the use of such methods and equipment will not result in damage to adjacent ground, existing improvements or improvements installed under the contract, nor shall it be construed as guaranteeing proper compaction. The Contractor shall make his own determination in this regard.

All backfill/fill and bedding around structures and pipe shall be compacted to not less than ninety percent (90%) relative compaction.

Trench bottoms for structures and pipe shall be graded to provide firm and uniform bearing throughout the entire length of the structures and pipe.

The Contractor's attention is directed to SECTION 7 – SOILS REPORT. The Contractor may use onsite material for pipe bedding subject to the approval of the Engineer provided it meets the requirements as set forth above. The Contractor shall make his own determination as to the availability of suitable onsite material. Should onsite material be unsatisfactory, the Contractor will be required to import suitable material.

Backfill/fill material shall consist of either select material from the excavation or imported material, as approved by the Engineer.

14.5 Testing – District personnel shall perform compaction tests as described below. These tests represent the minimum required. Additional tests may be taken at the Engineer's discretion.

1. Mainline Trenches – A complete series of compaction tests will be taken for each 4-foot thickness of backfill/fill placed. Each series will consist of tests taken at approximate maximum intervals of 300 feet. Each series will begin at the top of the bedding zone.
2. Connector Pipe Trenches – Compaction tests will be taken on 50% of the laterals, one test for each 4-foot of depth.
3. Any failed test will result in a retest.

Additional tests may be necessary to define limits of suitable backfill material.

14.6 Backfill - The contract item Backfill includes all backfill using onsite and imported material compacted as specified around the various concrete structures within the paylines as shown on the drawings. No additional measurement or payment will be made for costs associated with importing approximately 7,000 cubic yards of backfill material.

The Contractor has the option of importing free fill material from the District's Oak Street Channel and Debris Basin located in the city of Corona approximately six (6) miles from the project site. Please call Mark Biloki of the District at 951.955.1310 for information.

14.7 Filter Material - The contract item Filter Material includes all filter material to be placed below the reinforced concrete pipe, box and various other structures.

Depending upon the conditions encountered at the base of over excavations, some subgrade stabilization may be required. Typically, an unstable subgrade can be stabilized using 9" layer of filter material.

The Contractor should note that the placing of filter material will be determined from field conditions as directed by the Engineer.

The materials for filter material shall conform to Sections 90-2.02 and 90-3.01 of the State Standard Specifications. Grading shall meet the requirements for 1" x No. 4 coarse

aggregate as per Section 90-3.02 of the State Standard Specifications. The filter material shall be consolidated and the surface trimmed to final grade as directed by the Engineer.

14.8 Measurement - Excavation; and Backfill; beyond the limits established by the drawings, unless ordered in writing by the Engineer, will not be measured for payment.

The excavated material shall be measured from the ground surface existing at the start of excavation, as determined from surveyed cross sections taken by the District, to the lines, grades and dimensions shown on the drawings. Longitudinal limits of the excavations as shown on the profile drawings terminate at a vertical plane at the limits of the structure, measured along the longitudinal axis of the various structures.

Measurement for payment for the contract item Excavation will be the number of cubic yards of material excavated as shown on the drawings. Longitudinal limits of the excavations terminate at a vertical plane at the limits of structure, measured along the longitudinal axis of the structure.

Measurement for payment for the contract item Backfill; will be the number of cubic yards of material placed in final position as specified and within the limits of the payment lines shown on the drawings. The longitudinal limits shall terminate at a vertical plane at the limits of the structure, measured along the longitudinal axis of the various pipe or structures. Volumes occupied by structures, aggregate base, asphalt concrete and other feature for which a separate payment is made will be deducted from the gross volume.

Measurement for payment for the contract item Filter Material will be the number of cubic yards of material placed in final position as specified to the lines, grades and dimensions as shown on the drawings or as directed by the Engineer.

14.9 Payment - The contract prices paid for Excavation; Backfill; and Filter Material shall include full compensation for all costs incurred under this section.

#### SECTION 15 - TRENCH SAFETY SYSTEM AND FALSEWORK

15.1 Description - This section covers the contract item Trench Safety System and Falsework. This item is defined as a method of protecting employees from cave-ins, from material that could fall or roll from an excavation face or into an excavation, or from the collapse of adjacent structures. Trench safety systems include support systems, sloping and benching systems, shield systems and other systems that will provide necessary protection. The item includes the furnishing and implementation of the safety system as required by Section 306-1.1.6 of the Standard Specifications or as directed by the Engineer.

15.2 Trench Safety System - Excavation for any trench five (5) feet or more in depth shall not begin until the Contractor has provided to the Engineer, a detailed plan for worker protection from the hazards of caving ground during the excavation of the trench. The plan shall show the details of the design of shoring, bracing, sloping or other provisions to be made for worker protection including any design calculations done in the preparation of the plan. No such plan

shall allow the use of shoring, sloping or a protective system less effective than that required by the Construction Safety Orders of the California Department of Industrial Relations, Division of Occupational Safety and Health Administration (Cal-OSHA). The plan shall be prepared and signed by an engineer who is registered as a civil engineer in the State of California, and the plan and design calculations shall be submitted for review at least two (2) weeks before the Contractor intends to begin trenching operations.

All safety plans shall reflect surcharge loadings imparted to the side of the trench by equipment and stored materials. Surcharge loads shall be monitored to verify that such loads do not exceed the design assumptions for the system.

The Contractor should not assume that only one type of trench safety system such as a shield or "trench box" will be adequate for all trenching situations encountered on a given project. The Contractor should be prepared with alternative safety system designs (such as solid sheeting) should construction circumstances dictate the use of such.

Trench safety system designs for support systems, shield systems or other protective systems whether drawn from manufacturers' data, other tabulated data or designed for this particular project must be signed by a civil engineer registered in the State of California prior to submittal to the District for review. A shoring plan for the specific use of a shield shall be prepared. Catalogs or engineering data for a product should be identified in the plan as supporting data. All specific items or applicable conditions must be outlined on the submittal.

The State of California Department of Transportation "Trenching and Shoring Manual" will be used as a guide for plan review and approval.

Also included in this item is the fencing and barricading of the open trench as required for the safety of pedestrians and vehicular traffic as directed by the Engineer.

15.3 Falsework – Falsework for the construction of reinforced concrete boxes shall conform with Section 51-1.06 Falsework of the State Standard Specifications.

The Falsework plan shall be prepared and signed by an engineer who is registered as a civil engineer in the State of California, and the plan and design calculations shall be submitted for review at least 4 weeks before the Contractor intends to begin Falsework construction.

The State of California Department of Transportation "Falsework Manual" will be used as a guide for plan preparation and review.

15.4 Measurement and Payment - The contract price paid for the item Trench Safety System and Falsework shall include full compensation for all costs incurred under this section.

This payment will be made on a basis of the percentage of the work completed on the items related to trenching operations.

SECTION 16 - CONCRETE CONSTRUCTION

16.1 Description - This section includes the contract items related to the various classes of Concrete.

16.2 General Requirements - Concrete for all purposes shall be composed of Portland Cement, aggregates and water of the quantities and qualities herein specified, and in the required proportions. The ingredients are to be well mixed and brought to the proper consistency and to have a compressive strength at the age of 28 days of not less than the amount shown in the following tabulation for each type of work listed:

| <u>CONCRETE CLASS</u> | <u>MINIMUM SACKS CEMENT/C.Y.</u> | <u>TYPE OF WORK</u>                                                                          | <u>POUNDS PER SQUARE INCH</u> |
|-----------------------|----------------------------------|----------------------------------------------------------------------------------------------|-------------------------------|
| A                     | 6                                | Channel Transition                                                                           | 5000*                         |
| A                     | 6                                | Box, Parapet Wall, Junction Structure No. 3, and Concrete Collars                            | 3250*                         |
| B                     | 5                                | Cutoff Walls, Ribbon Gutter, Anchor Block and Miscellaneous Concrete not otherwise specified | 3000*                         |

\*Note: Concrete for use in structures constructed from State of California, Department of Transportation Standard Plans shall have compressive strengths as called for on those plans.

\*\*Note: See the appropriate section for specifications on cast-in-place concrete pipe. Engineer to adjust Concrete Strength Transition Structures to match Concrete Strength for CIPP mainline.

16.3 Material and Methods - All concrete materials, methods, forms and proportioning shall conform to Sections 51 and 90, and additionally, curb construction shall conform to Section 73 of the State Standard Specifications. Concrete test specimens will be made in accordance with ASTM Designation C-31 and C172. Test for concrete compressive strengths will be performed in accordance with ASTM Designation C-39. Combined aggregate grading for all concrete shall be in conformance with Section 90-3.04 of the State Standard Specifications and the following tabulation for each type of work listed:

| <u>TYPE OF WORK</u>                                                                                                                                                                  | <u>COMBINED AGGREGATE GRADING</u> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|
| The inverts of: Trapezoidal Channels, and Reinforced Concrete Box.                                                                                                                   | 1-1/2" Maximum                    |
| Slope Paving, Trapezoidal Channel, Box Deck and Walls, Parapet Wall, Ribbon Gutter, Collars, and other Miscellaneous Concrete not otherwise specified. All other concrete structures | 1" Maximum                        |

Fly Ash, Class F may be substituted for cement, up to a maximum of 15 percent by weight for all concrete. Fly Ash shall meet the standards of ASTM Designation: C-618. Water reducing agents meeting ASTM Designation: C-494 will be permitted in amounts recommended by the supplier and approved by the Engineer in writing.

No other admixture shall be used in any class of concrete without written permission from the Engineer.

Supplementing Section 90-1.01 of the State Standard Specifications, prior to placement of any concrete the Contractor shall submit mix designs, for all types of concrete to be placed, to the Engineer for approval. Supplementing Section 90-6.03 of the State Standard Specifications, concrete delivered to the job site shall be accompanied by a ticket containing the weight of each of the individual ingredients in the mix.

16.4 General Reinforcing Steel Requirements - Reinforcing steel for all reinforced concrete structures shall be Grade 60 Low-Alloy or Grade 60 Billet-Steel. The reinforcing steel for use in structures constructed from State of California, Department of Transportation Standard Plans shall be of Grade 60 or as called for on those plans. Cleaning, bending, placing and spacing of reinforcement shall conform to the applicable provisions of Section 52 of the State Standard Specifications and to the drawings. The Contractor shall furnish a "Certificate of Compliance" with the specification of ASTM Designation: A-706/A or A-615/A. All splices shall conform to the requirements of A.C.I. Manual, Standard 318, latest edition. Splices requested by the Contractor for his convenience shall be subject to approval by the Engineer. Longitudinal lap shall be 16 inches minimum for #4 bars and 19 inches minimum for #5 bars.

16.5 Consistency - The consistency of the concrete shall be such as to allow it to be worked into place without segregation. Unless otherwise specified, the slump shall be 3 inches plus or minus 1 inch for all concrete, except the concrete for the cast-in-place concrete pipe which shall have a slump of 2 inches plus or minus 1 inch.

The slump test shall be performed in accordance with the requirements of ASTM Designation: C-143. Slumps greater than those specified may be cause for rejection of the concrete by the Engineer.

16.6 Placing - Supplementing Section 51-1.09 of the State Standard Specifications, concrete shall not be placed except in the presence of the Engineer. The Contractor shall give reasonable notice to the Engineer each time he intends to place concrete. Such notice shall be far enough in advance to give the Engineer adequate time to inspect the subgrade, forms, steel reinforcement and other preparations for compliance with the specifications before concrete is delivered for placing.

Formed concrete shall be placed in horizontal layers in lifts of not more than 20 inches. Hoppers and chutes, pipes and "elephant trunks" shall be used as necessary to prevent segregation of the concrete.



16.7 Form Removal and Finish - Forms shall be removed only when the Engineer has given his approval. Forms shall be removed in such a way as to prevent damage to the concrete. Supports shall be removed in a manner that will permit the concrete to take stresses due to its own weight uniformly.

Forms shall not be removed sooner than the following minimum time or strength after the concrete is placed. These times represent cumulative number of days and fractions of days, not necessarily consecutive, during which the temperature of the air adjacent to the concrete is above 50 degrees Fahrenheit. If the temperature falls below 50 degrees Fahrenheit at any time after the concrete is placed in the forms, the Engineer will advise the Contractor of additional time required before forms can be removed.

| <u>Element</u>                                                                    | <u>Strength or Time</u> |
|-----------------------------------------------------------------------------------|-------------------------|
| Reinforced Concrete Boxes with spans less than 14 feet, and not at pavement grade | 1600 psi                |
| All other structures                                                              | 16 hours                |

The finish on all exposed formed surfaces shall conform to Section 51-1.18B Class 1 Surface Finish of the State Standard Specifications. A tight wood float finish will be required on the surface of trapezoidal channels and bridge decks and excessive surface working will not be permitted. The exposed concrete surfaces shall be broomed in a transverse direction with a fine textured hair push broom to produce a uniform surface and eliminate float marks. Brooming shall be done when the surface is sufficiently set to prevent deep scarring. If directed by the Engineer, a fine spray of water shall be applied to the surface immediately in advance of brooming.

Exposed corners of all concrete structures shall be finished with a 3/4" chamfer.

16.8 Curing - All concrete shall be prevented from drying for a curing period of at least seven (7) days after it is placed. Surfaces exposed to air during the curing process shall be kept continuously moist for the entire period or until curing compound is applied.

Formed surfaces shall be thoroughly wetted immediately after forms are removed and shall be kept wet until patching and repairs are completed. Water or covering shall be applied in such a way that the concrete surface is not eroded or otherwise damaged. Water for curing shall be clean and free from any substances that will cause discoloration of the concrete.

Concrete may be coated with curing compound in lieu of the continued application of moisture. The curing compound shall comply with the requirements of Section 90-7.01B of the State Standard Specifications. The curing compound shall be No. 5 White Pigmented Curing Compound conforming to the requirements of ASTM Designation: C-309, Type 2, Class B for all concrete surfaces other than for flatwork which shall be coated with a clear or translucent curing compound containing a red fugitive dye.

The curing compound shall be sprayed on the moist concrete surfaces as soon as free water has disappeared, but shall not be applied to any surface until patching, repairs and finishing of that surface are completed. The curing compound shall be thoroughly mixed immediately before applying, and shall be applied at a uniform rate of not less than one gallon per 150 square feet of surface. No separate payment will be made for the curing compound or its application.

16.9 Joints - Joints shall be made at the locations shown on the drawings, or as approved by the Engineer.

The Contractor shall construct, in one continuous concrete placing operation, all work comprised between such joints. Joints shall be kept moist until adjacent concrete is placed.

All construction joints having a keyed, stepped, or roughened surface shall be cleaned by sandblasting prior to placement of the adjacent concrete, unless otherwise directed by the Engineer.

The sandblasting operations shall be continued until all unsatisfactory concrete, laitance, coatings, stains, debris, and other foreign materials are removed. The surface of the concrete shall be washed thoroughly to remove all loose material.

Transverse weakened plane joints shall be required in the trapezoidal channel at 10-foot spacing or as directed by the Engineer. The joints may be formed by placing a continuous strip of plastic or other material which will not react adversely with the chemical constituents of the concrete or bond with the concrete. The strip shall have a minimum thickness of 0.013 foot, a width of not less than 0.12 foot nor more than 0.13 foot for the six-inch thick channel slope and invert. After placement, the vertical axis of the joint material shall be within 10 degrees of a plane normal to the surface of the concrete. The tops of the strip shall not be above nor more than 0.02 foot below the finished concrete. Final alignment of the strip for the transverse weakened plane joints shall not vary more than 0.04 foot from the edge of a 12-foot straight edge. After installation of a joint material the concrete shall be free of segregation, rock pockets or voids and the finished concrete surface on each side of the joint shall be in the same plane.

The Contractor may elect to form the weakened plane joints in the channel surface by cutting a groove in the surface with a power driven saw. The grooves shall be cut to a minimum depth of 0.17 foot and the width shall be the minimum width possible with the type of saw being used, but in no case shall the width exceed 0.02 foot. The weakened plane joints shall be sawed within 12 hours after the concrete has been placed.

Construction joints, when required, shall be located between the transverse joints and, unless otherwise specified on the plans, shall utilize 1/2 inch diameter deformed bars 30 inches long, spaced at 18-inch centers as tie bars. The construction joints shall be straight and finished in a workmanlike manner.

Surfaces of construction joints shall be cleaned as set forth in Section 51-1.13 of the State Standard Specifications.

For reinforced concrete boxes, keyed transverse construction joints shall be placed not more than 50 feet or be less than 10 feet. Transverse joints in the invert, walls and deck shall be in the same plane. Transverse construction joints shall be constructed per details on the drawings.

A complete curtain of transverse steel shall be placed 3 inches from the face of the joints and longitudinal steel will not be continuous through the joints.

16.10 Weepholes - Weepholes shall be constructed in accordance with the drawings and at locations directed by the Engineer. All weepholes shall be 2-1/2 inches in diameter unless noted otherwise on the drawings.

Weepholes may be formed by removable round wooden dowels, Schedule 40 PVC Pipe or greater, or by other methods acceptable to the Engineer.

All weepholes shall have a rodent screen consisting of 1/4-inch mesh, 16-gauge galvanized hardware cloth securely and permanently attached over the drain opening in a manner approved by the Engineer.

Filter material for the weepholes shall be one inch (1") nominal size crushed rock conforming to the gradation of Section 200-1.2 of the Standard Specifications. Filter material shall also meet the quality requirements of Sections 200-1.1 and 200-1.2 of the Standard Specifications.

Filter material shall be wrapped in a single layer of filter fabric as shown on the drawings or approved by the Engineer. Filter fabric shall conform to that specified for underdrains per Section 88-1.03 of the State Standard Specifications.

Filter fabric shall be furnished in protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. The fabric shall also be ultraviolet stabilized.

The fabric shall be placed in the manner and at the locations shown on the drawings. The surface to receive the fabric shall be prepared to a smooth condition free of obstructions and debris.

The fabric shall be covered within 72 hours of its placement. Should the fabric be damaged during construction, the torn or punctured section shall be repaired or replaced as directed by the Engineer.

No separate payment will be made for the installation of the weephole, hardware cloth, filter material or filter fabric.

16.11 Use of the Channel Invert - Dump trucks, concrete trucks and earth moving equipment (whether full or empty) will not be allowed to operate on the invert of the concrete channel.

A small crane with capacity not to exceed 10 tons will be permitted to operate on the concrete channel invert for the purpose of setting and moving forms, and erecting the steel reinforcement for the walls. Wheel loading types and amounts will be subject to the approval of the Engineer. Vehicles of 3/4 ton capacity (or less) will also be permitted access to the invert. The speed of any vehicle using the invert will be limited to 10 m.p.h. maximum to avoid impact loading.

No other category of equipment, except that specifically approved by the Engineer in writing will be permitted to use the invert of the channel for access to the work area.

In any event, vehicular access to the invert will not be permitted until the concrete has achieved its design strength. Approval for access to use the invert shall not relieve the Contractor of the responsibility to avoid damage to the concrete. Cracking, displacement or other damage which occurs to the invert will be cause to restrict some or all of the categories of equipment allowed access to the channel. Repair or replacement of damaged concrete will be required.

16.12 Class "A" Concrete, Reinforced Concrete Box - The contract item Class "A" Concrete, Reinforced Concrete Box covers the concrete and all reinforcing steel incorporated in the construction of all reinforced concrete boxes.

Loading and vehicular use of box deck slab shall comply with the requirements of Section 51-1.11 of the State Standard Specifications.

Also included in this item of work will be the construction of the weepholes if required in the invert slab or sides of the reinforced concrete box.

16.13 Class "A" Concrete, Transition - The contract item Class "A" Concrete, Transition covers the concrete and all reinforcing steel to be used in the construction of the channel transition and parapet wall.

16.14 Class "B" Concrete, 2' Cutoff Wall - The contract item Class "B" Concrete, 2' Cutoff Wall covers the construction of the continuous cutoff walls on each side of the L1 portion of the channel transition. Included in the pay item is all earthwork and reinforcing steel.

16.15 Class "B" Concrete, Miscellaneous - The contract item Class "B" Concrete, Miscellaneous includes the complete construction of the ribbon gutters and any other concrete not specified. Included in the pay item is all earthwork required. The subgrade for ribbon gutters shall be recompacted to ninety-five percent (95%) relative compaction prior to the placement of concrete.

No separate payment will be made for Junction Structure No. 3.

16.16 Measurement - Measurement for payment for the contract items Class "A" Concrete, Reinforced Concrete Box; Class "A" Concrete, Transition; and Class "B" Concrete,

Miscellaneous will be the number of cubic yards placed as specified, measured to the neat lines as shown on the drawings.

Measurement for payment for the contract item Class "B" Concrete, 2' Cutoff Wall will be the number of lineal feet placed, measured parallel to the top of the wall.

No measurement or payment will be made for Junction Structure No. 3.

16.17 Payment - The contract prices paid for the various Concrete items shall include full compensation for all costs incurred under this section.

### SECTION 17 - CONCRETE PIPE

17.1 Description - This section covers the contract item Reinforced Concrete Pipe of the various sizes as required for the work.

17.2 General Pipe Requirement - Pipe materials, manufacture and quality, shall conform to ASTM Designation: C-76 or C-655. The Engineer shall be furnished a "Certificate of Compliance" signed by the manufacturer of the pipe certifying that the pipe conforms to the ASTM requirements. All pipe and pipe material supplied by the Contractor shall be new.

Pipe shall be laid in a trench free of ponded water in conformance with Section 306-1.2.2, with joints in conformance with Section 306-1.2.4 of the Standard Specifications.

Pipe ends shall be cleaned and moistened prior to making up joint.

17.3 Reinforced Concrete Pipe - The contract items for the various Reinforced Concrete Pipe include the furnishing and installing of the various pipe as specified, inclusive of earthwork.

17.4 Pipe on Curves - Unsymmetrical closure of pipe joints shall not exceed 1 inch pull on the outside of the curve when pull is measured at the springline on the inside of the pipe. Mortar joints on curves shall conform in strength, texture of mortar finish and tightness to the joints for straight ended pipe.

When beveled pipe is used the maximum deflection angle shall not exceed 6 degrees unless shown on the plans or approved by the Engineer.

17.5 Measurement - Measurement for payment of the contract items Reinforced Concrete Pipe of the various sizes and classes will be the number of lineal feet of each class installed as specified measured along the centerline of the pipe in place including curves.

17.6 Payment - The contract prices paid for the Reinforced Concrete Pipe shall include full compensation for all costs incurred under this section.

### SECTION 18 - NOT USED

## SECTION 19 - FLEXIBLE PAVEMENT CONSTRUCTION

19.1 Description - This section covers the contract item Aggregate Base, Class 2.

19.2 Aggregate Base, Class 2 - The contract item Aggregate Base, Class 2 includes furnishing and placing such material as indicated on the drawings. Aggregate Base, Class 2 shall be clean and free from roots, organic material and other deleterious substances, and be of such character that when wet it will compact to form a firm stable base. Material and placing shall be in accordance with Section 26 of the State Standard Specifications using  $\frac{3}{4}$ -inch maximum size.

The aggregate base shall also have a sand equivalent value of not less than 35 when tested in conformance with California Test Method 217.

The aggregate base material shall be spread as specified in Sections 26-1.035 and 26-1.04 of the State Standard Specifications. The aggregate base material shall be compacted as specified in Section 26-1.05 of the State Standard Specifications.

19.3 Measurement - Measurement for payment of the contract item Aggregate Base, Class 2 will be the number of cubic yards placed to the lines, grades and dimensions shown on the drawings. **No allowance will be made for aggregate base placed outside said dimensions unless otherwise ordered by the Engineer.**

19.4 Payment - The contract price paid for Aggregate Base, Class 2 shall include full compensation for all costs incurred under this section.

## SECTION 20 - FENCES AND GATES

20.1 Description - This section covers the contract items 6-Foot Chain Link Fence; 2'-6" Cable Railing/Fence; and 14-Foot Double Drive Gates.

20.2 6-Foot Chain Link Fence - The contract item 6-Foot Chain Link Fence includes furnishing and installing the material required for this portion of the work as shown on the drawings and as directed by the Engineer. Included in this item is all hardware parts, posts and fittings. Also included in this item of work will be the removal and relocation, if required, of chain link fence as noted on the drawings and as directed by the Engineer.

All materials shall be new except that specified for removal and relocation and shall conform to Section 206-6 of the Standard Specifications and the drawings, with installation in conformance with Section 304-3.2. Materials salvaged shall be subject to the Engineer's approval prior to reinstallation. All posts shall be set in commercial plant quality, 4 sack per cubic yard concrete.

20.3 2'-6" Cable Railing/Fence - The contract item 2'-6" Cable Railing/Fence includes furnishing and installing the material required for this portion of the work. Included in this item is all hardware, parts, posts and fitting in conformance with Section 83-1.02E of the State Standard Specifications.

20.4 14-Foot Double Drive Gates - The contract item 14-Foot Double Drive Gates includes furnishing and installing the various gates as shown on the drawings, complete with all gate posts set in concrete and in conformance with Section 304-3.3 of the Standard Specifications. Padlocks are not included in this item. On completion, gates shall operate freely without wedging or binding.

20.5 Measurement - Measurement for payment for the contract item 6-Foot Chain Link Fence will be the number of lineal feet of new and relocated fence installed measured along the top of the fence parallel to the ground.

Measurement for payment for the contract item 2'-6" Cable Railing/Fence will be the number of lineal feet of new cable railing/fence installed along the top of the railing parallel to the ground.

Measurement for payment for the contract item 14-Foot Double Drive Gate will be the number of pairs installed. Excavation and concrete required for fence or gate posts will not be measured for payment.

20.6 Payment - The contract price paid for 6-Foot Chain Link Fence; 2'-6" Cable Railing/Fence; and 14-Foot Double Drive Gates shall include full compensation for all costs incurred under this section.

## SECTION 21 - MISCELLANEOUS

21.1 Description - This section covers the contract items Desilting Riser; and Subdrain.

21.2 Desilting Riser - The contract item Desilting Riser covers the corrugated metal pipe riser and grate assembly complete with coupling brands, hardware and other parts and fittings. Also included in the item are concrete anchor block, gravel protection, the concrete collar required to connect the corrugated metal pipe to the RCP and any earthwork required as shown on the drawings.

21.3 Subdrain - The contract item Subdrain covers trenching and the furnishing of the subdrain pipe, all fittings, galvanized screen, filter material and filter fabric.

The filter material shall be wrapped in filter fabric as shown on the drawings. Filter material and filter fabric shall conform to the material specifications as specified in Section 16.10, Weepholes, of these Detailed Specifications.

Filter Fabric shall be furnished in a protective wrapping which shall protect the fabric from ultraviolet radiation and from abrasion due to shipping and handling. The fabric shall also be ultraviolet stabilized.

The fabric shall be placed in the manner and at the locations shown on the drawings. The surface to receive the fabric shall be prepared to a smooth condition free of obstructions and debris.

The fabric shall be covered within 72 hours of its placement. Should the fabric be damaged during construction, the torn or punctured section shall be repaired by placing a piece of fabric that is large enough to cover the damaged area and to meet the overlap requirement. Adjacent borders of the fabric shall be overlapped a minimum of twelve (12) inches or sewn. Upstream sections of fabric shall overlap downstream sections.

Perforated subdrain pipe shall be vitrified clay pipe, concrete pipe, ABS Pipe or PVC Pipe, at the option of the Contractor. Vitrified clay pipe shall meet the requirements of ASTM Designation: C-700, for extra strength pipe. Concrete pipe shall meet the requirements of ASTM Designation: C-14 Class 3 and C-444 Type I. ABS pipe shall meet the requirements of ASTM Designation: D-2751, SDR 23.5, and PVC pipe shall meet the requirements of ASTM Designation: D2665, and perforations shall be that as described in ASTM Designation: C-700.

21.4 Measurement - Measurement for payment for the contract item Desilting Riser will be the number of each installed.

Measurement for payment for the contract item Subdrain will be the number of lineal feet installed as specified. No measurement will be made of the gravel filter material required for this portion of the work.

21.5 Payment - The contract prices paid for Desilting Riser; and Subdrain shall include full compensation for all costs incurred under this section.

## SECTION 22 THROUGH SECTION 26 - NOT USED

### SECTION 27 - DUST ABATEMENT

27.1 Description - This section covers the implementation of dust control measures necessary to prevent harm and nuisance from dust. Supplementing Section 8.06 of the General Provisions, the Contractor shall comply with all the provisions of the South Coast Air Quality Management District (SCAQMD) Rule 403 as described in Appendix "A".

27.2 Dust Abatement - The contract item Dust Abatement includes the action necessary to prevent, reduce or control dust within the work area as required to complete the work. The Contractor shall carry out proper and efficient measures to prevent his operations from producing dust in amounts damaging to property or causing a nuisance, or harm to persons living nearby or occupying buildings in the vicinity of the work. The methods to be used for controlling dust in the construction area and along haul roads shall be approved by the Engineer prior to starting any work included in this contract. The Rule 403 Implementation Handbook published by the SCAQMD contains a detailed listing of reasonably available dust control measures and is available for inspection at the District office.



27.3 Payment - The contract lump sum price paid for Dust Abatement shall include full compensation for all direct and indirect costs incurred under this section.

This payment will be made on a basis of the percentage of work completed on the entire project.

### SECTION 28 - HYDROSEEDING

28.1 Description - This section covers the contract item Hydroseeding as directed by the Engineer. All cut or fill slopes, and all exposed or stripped areas (including TCE's) within the project limits shall be hydroseeded.

28.2 Hydroseeding - This item includes the furnishing of all materials, incidentals, labor and equipment necessary to complete the work as specified herein, and as directed by the Engineer. All hydroseeding work shall be done by fully qualified and experienced personnel.

The hydroseeding materials shall not be stored onsite without prior approval of the Engineer as to location, duration and method of storage. All debris and excess materials shall be removed on a daily basis, unless otherwise authorized by the Engineer. The Contractor shall leave the work area in a clean and finished appearance upon completion of hydroseeding.

28.3 Equipment and Materials - The equipment shall be a mobile mounted unit in a fully operational and well maintained condition, meeting the requirements of Section 20-3.04B of the State Standard Specifications. Fiber shall be produced from natural or recycled (pulp) fiber and shall meet the requirements of Section 20-2.07 of the State Standard Specifications. Stabilizing binder upon drying shall allow water and air penetration, shall be non-flammable, shall have an effective life of at least 1 year, and shall not be toxic to plants and animals.

All seed shall be delivered to the site tagged and labeled in accordance with the California Agricultural Code. Seed shall be of a quality which has a minimum pure live seed content (% of purity x % germination) as specified and weed seed shall not exceed 0.5% of the aggregate of pure live seed and other material.

A commercial Ammonium Phosphate fertilizer shall be used containing a minimum of 16% nitrogen, 20% available phosphoric acid and 0% water soluble potash, uniform in composition, dry and free flowing, pelleted or granular. All fertilizer shall be delivered in unbroken or unopened containers, labeled in accordance with applicable State regulations and bearing the warranty of the producer for the grade furnished.

Straw mulch shall be new straw derived from rice, wheat, oats or barley and be free of mold and noxious weed seed. Straw shall be furnished in air dry bales. The Contractor shall furnish evidence that clearance has been obtained from the County Agricultural Commissioner, as required by law, before straw obtained from outside the county in which it is to be used is delivered to the site of the work.

A mulch covering shall be distributed uniformly over the surface of the seeded area. Mulching shall follow immediately after seeding. The straw mulch shall be applied at a rate of two (2) tons per acre. The mulch shall be applied by hand, blower or other suitable equipment. If straw is applied with a blower, it shall not be chopped in lengths less than six (6) inches.

28.4 Application - The Engineer shall review and approve completion of all construction and grading prior to any section being approved as ready for hydroseeding application.

The Contractor shall provide a written per load mix tabulation, ratioed to the tank capacity of the equipment to be used on the project, for review and approval by the Engineer well in advance of anticipated start of hydroseeding.

The Contractor shall provide a sample demonstration area for application by preparing one load of hydroseed mix. The demonstration areas shall be wet down thoroughly prior to application. The Engineer shall review and approve the sample section for compliance and workmanship. Upon approval, this area shall become the sample for all remaining application. No hydroseeding shall take place during high winds or during periods of rainfall.

Areas designated for hydroseeding shall receive an application made with an overlapping fan motion to provide a full and even spread throughout the coverage area.

The hydroseed mix, per acre of coverage, shall be as follows:

- 2,000 lbs./acre EcoFiber Mulch
- 800 lbs./acre Biosol Forte 7-2-1 Organic Fertilizer
- 150 lbs./acre Environ-mend Binder
- 20 lbs./acre MycoApply® Endo Mycorrhizal inoculum
- 47.5 lbs./acre See Mix as follows:

| Species                                               | Lbs/ac | P/G   |
|-------------------------------------------------------|--------|-------|
| Lobularia Maritima Sweet/Alyssum Sweet                | 1.5    | 98/80 |
| Eschscholzia californica/California Poppy             | 3      | 98/75 |
| Lasthenia glabrata/Goldfields                         | 1      | 90/85 |
| Bromus carinatus/California Brome                     | 15     | 95/80 |
| Hordeum californicum/California Barley                | 10     | 90/80 |
| Vulpia myuros Deawned (Festuca megalura)/Zorro Fescue | 8      | 90/80 |
| Plantago insularis/Plantago                           | 6      | 98/75 |
| Trifolium hirtum/Hykon Rose Clover                    | 3      | 95/85 |

28.5 Measurement and Payment - The contract price lump sum paid for Hydroseeding shall include full compensation for all costs incurred under this section.

## SECTION 29 – STORMWATER AND NON-STORMWATER POLLUTION CONTROL

29.1 Description – This section covers the contract items Stormwater and Non-Stormwater Pollution Control; and Non-Stormwater Discharge or Dewatering. The contract item Stormwater

and Non-Stormwater Pollution Control shall include preparing, obtaining approval of, amending and implementing the Permit Registration Documents (PRDs) as required by the State Water Resources Control Board (SWRCB) and the California Regional Water Quality Control Board (CRWQCB) - Santa Ana Region. The contract item Non-Stormwater Discharge or Dewatering shall include compliance with Santa Ana Regional Water Quality Board Order No. R8-2009-0003.

29.2 General Requirements – All activities performed by the Contractor for this project shall conform to the requirements of the State-wide National Pollutant Discharge Elimination System (NPDES) General Permit (Board Order No. 2009-0009-DWQ, NPDES No. CAS000002 as amended by Board Order No. 2010-0014-DWQ) for Stormwater Discharges Associated with Construction and Land Disturbance Activities, hereafter referred to as the "General Permit", issued by the SWRCB. This General Permit regulates both stormwater and non-stormwater discharges associated with Contractor's construction activities. This General Permit can be downloaded at [http://www.swrcb.ca.gov/water\\_issues/programs/stormwater/constpermits.shtml](http://www.swrcb.ca.gov/water_issues/programs/stormwater/constpermits.shtml).

The PRDs mentioned above consist of:

1. Notice of Intent
2. Risk Assessment (Section VIII of the General Permit)
3. Site Map
4. Stormwater Pollution Prevention Plan (SWPPP) (Section XIV of the General Permit)
5. Annual Fee
6. Signed Certification Statement

Notice of Intent - The District will complete and submit the Notice of Intent.

Risk Assessment - Using the methodology in Appendix 1 of the General Permit, the District has calculated the preliminary Risk Level to be 1 based on returning disturbed areas to pre-construction conditions at the end of the day.

Site Map – The Contractor shall revise District provided site map of the project area if Contractor's Qualified SWPPP Developer (QSD) deems necessary. Site Map shall conform to requirements of General Permit Attachment A, Section B.

SWPPP – For the convenience of the Contractor and to expedite the SWPPP preparation and approval, a "90%" SWPPP Template has been prepared by the District. This SWPPP Template has been tailored to the referenced project and can be downloaded from [http://reflood.org/Documents/SWPPP\\_Template\\_2000140.pdf](http://reflood.org/Documents/SWPPP_Template_2000140.pdf) or obtained from the District in CD form. Winning bidder will be provided two (2) hard copies and a Word document of the "90%" SWPPP Template to amend. The Contractor shall review and amend this SWPPP Template based on the requirements of the General Permit and per the construction schedule and work plan proposed by the Contractor. The Contractor shall then submit a SWPPP certified by the Contractor's QSD which conforms to Section 29.3 for District review and approval.

The Contractor shall amend and finalize the complete "90%" SWPPP Template referenced above. The Contractor shall, at a minimum, provide and/or prepare the following:

1. Name and contact information for the Contractor's Qualified SWPPP Practitioner (QSP) and QSD
2. Contractor name and contact information
3. Contractor site contact person and emergency contact person information
4. Verification of disturbance area due to construction
5. Construction commencement date
6. Anticipated construction completion date
7. Construction Activity Schedule/Best Management Practices (BMPs) Installation Schedule
8. Name and contact information for personnel responsible for pre-storm, post-storm and storm event BMP inspections – this should be the project's QSP
9. Name of the lab responsible for testing any stormwater samples for non-visible pollutants
10. Verification of project risk level and permit type (Linear Underground/Overhead Project (LUP) or Traditional)
11. List of all subcontractors that will be working on the project
12. Review and finalize water pollution control drawings

The SWPPP shall be certified by the Contractor's QSD and implemented by the Contractor's QSP. The SWPPP shall be developed based on the format outlined in the CASQA SWPPP Template located in the California Stormwater Quality Association (CASQA) Construction BMP Handbook Portal and modified as required to meet the LUP specific requirements set forth in the General Permit Attachment A. The portal can be found on the CASQA Website: [www.casqa.org](http://www.casqa.org). The SWPPP shall identify site specific BMPs to be implemented during and after construction to minimize the potential pollution of stormwater runoff and downstream receiving waters. The identified BMPs shall be practices designed to minimize or eliminate the discharge of pollutants from the construction site and Contractor's construction activities, including, but not limited to:

1. Good housekeeping practices for solid and sanitary/septic waste management, vehicle and equipment cleaning/maintenance, and material handling and storage.
2. Construction procedures such as stabilized construction access points, scheduling/phasing to minimize areas of soil disturbance, soil stabilization and erosion/sediment control.

The SWPPP shall also stipulate an ongoing program for monitoring and maintenance of all BMPs.

The SWPPP shall be designed to address the following objectives:

1. All pollutants and their sources, including sources of sediment associated with construction, construction site erosion and all other activities associated with construction activity are controlled;
2. Where not otherwise required to be under a Regional Water Board permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
3. Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Conventional Technology (BAT/BCT) standard;
4. Calculations and design details as well as BMP controls for site run-on are complete and correct; and
5. Stabilization BMPs, installed to reduce or eliminate pollutants after construction, are completed.

To demonstrate compliance with requirements of the General Permit, the QSD shall include information in the SWPPP that supports the conclusions, selections, use, and maintenance of BMPs.

The Contractor shall make the SWPPP available at the construction site during working hours while construction is occurring and shall be made available upon request by a State or Regional Board inspector. When the original SWPPP is retained by a crewmember in a construction vehicle and is not currently at the construction site, current copies of the BMPs and map/drawing will be left with the field crew and the original SWPPP shall be made available via a request by radio/telephone.

Annual Fee – The District will pay any necessary fees.

Signed Certification Statement – The Contractor's QSD shall submit a signed certification certifying the SWPPP is a true, accurate and complete representation of the proposed project and mitigation measures.

**In the event the District incurs any Administrative Civil Liability or Mandatory Minimum (fine) imposed by the CRWQCB - Santa Ana Region, as a result of Contractor's failure to fully implement the provisions of this section and permit requirements, "Stormwater and Non-Stormwater Pollution Control", the Engineer may, in the exercise of his sole judgment and discretion, withhold from payments otherwise due Contractor a sufficient amount to cover the Civil Liability. Liability for "Negligent Violations" may be in an amount up to \$50,000 per day per deemed occurrence while "Knowing Violations" can result in fines as high as \$250,000 and imprisonment.**

Stormwater and Non-Stormwater Pollution Control work shall conform to the requirements in the latest version of the CASQA Handbook, entitled "**California Stormwater BMP Handbook – Construction**" updated November 2009. A copy of the "California Stormwater BMP Handbook – Construction", updated November 2009, hereafter referred to as the "CASQA Handbook", may be obtained from CASQA, Post Office Box 2105, Menlo Park,

California 94026-2105. Telephone: 650.366.1042. Copies of the CASQA Handbook can also be downloaded from the CASQA Construction BMP Handbook Portal.

The Contractor shall be responsible for all costs and for any liability imposed by law as a result of the Contractor's failure to comply with the requirements set forth in this section, "Stormwater and Non-Stormwater Pollution Control", including but not limited to, compliance with the applicable provisions of the CASQA Handbook, General Permit, General De Minimus Permit, Federal, State and local regulations. For the purpose of this paragraph, costs and liabilities include, but are not limited to, fines, penalties and damages whether assessed against the District or the Contractor, including those levied under the Federal Clean Water Act and the State Porter-Cologne Water Quality Act.

The Contractor shall become fully informed of and comply with the applicable provisions of the CASQA Handbook, General Permit, General De Minimus Permit, and Federal, State and local regulations that govern the Contractor's activities and operation pertaining to both stormwater and non-stormwater discharges from both the project site and areas of disturbance outside the project limits during construction. The Contractor shall, at all times, keep copies of the General Permit, General De Minimus Permit, approved SWPPP and all amendments at the project site. The SWPPP shall be made available upon request of a representative of the SWRCB, CRWQCB, United States Environmental Protection Agency (USEPA) or local stormwater management agency. Requests by the public shall be directed to the Engineer.

The Contractor is solely and exclusively responsible for any arrangements made between the Contractor and other property owners or entities that result in disturbance of areas or construction activities being conducted outside limits of the designated rights-of-way and temporary construction easements as shown on the project drawings.

The Contractor shall, during work hours, allow authorized agents of the CRWQCB, SWRCB, USEPA or local stormwater management agency, upon the presentation of credentials and other documents as may be required by law, to:

1. Enter upon the construction site and the Contractor's facilities pertinent to the work;
2. Have access to and copy any records required to be kept as specified in the General Permit;
3. Inspect the construction site, including any offsite staging areas or material storage areas, and related soil stabilization practices and sediment control BMPs; and
4. Sample or monitor for the purpose of ensuring compliance with the General Permit.

The Contractor shall notify the Engineer immediately upon request from regulatory agencies to enter, inspect, sample, monitor or otherwise access the project site or the Contractor's records.

29.3 PRDs Preparation and Approval - The Contractor shall prepare and obtain approval of the PRDs as part of the Stormwater and Non-Stormwater Pollution Control work for this contract. The SWPPP shall include an appropriate Monitoring and Reporting Program (M&RP) as required by Section M, "Monitoring and Reporting Requirements" of Attachment A of the General Permit. A guidance document titled "Field Monitoring and Analysis Guidance" is available from the CASQA internet site in their Construction BMP Handbook Portal. The Contractor shall prepare and implement the SWPPP in accordance with the CASQA Handbook, the General Permit and these Detailed Specifications.

**In case of conflict between the CASQA Handbook and these Detailed Specifications, the Detailed Specifications shall govern; in case of conflict between these Detailed Specifications and the General Permit, the latter shall govern.**

Within five (5) working days after the award of the contract, the Contractor shall submit two (2) copies of the PRDs to the Engineer for review and approval. The Contractor shall allow ten (10) working days for the Engineer to review the PRDs. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the PRDs within three (3) working days of receipt of the Engineer's comments and shall allow ten (10) working days for the Engineer to review the revisions. The Contractor shall submit four (4) hard copies and one (1) pdf copy of the approved SWPPP to the Engineer prior to the pre-construction meeting. **The Contractor must have approved PRDs prior to the pre-construction meeting.**

The SWPPP shall incorporate BMPs in each of the following categories:

1. Soil stabilization practices;
2. Sediment control practices;
3. Sediment tracking control practices;
4. Wind erosion control practices; and
5. Non-stormwater management, and waste management and disposal control practices.

Specific objectives and minimum requirements for each category of BMPs are described in the CASQA Handbook. The Contractor shall consider the objectives and minimum requirements presented in the CASQA Handbook for each of the above categories. When minimum requirements are listed for any category, the Contractor shall incorporate one or more of the listed minimum BMPs required into the SWPPP and implement them on the project to meet the pollution control objectives for the category. In addition, the Contractor shall consider other BMPs presented in the CASQA Handbook to supplement the minimum BMPs required when necessary to meet the objectives of the SWPPP and maintain compliance with the General Permit. The Contractor shall document the selection process in accordance with the procedure specified in the CASQA Handbook.

The Contractor should not assume that the minimum BMPs required for each category presented in the CASQA Handbook are adequate to meet the pollution control objectives. The Contractor may use other effective BMPs, as approved by the Engineer, in addition to the minimum as required in the CASQA Handbook to achieve the pollution control objectives.

The SWPPP shall include the following items as described in the CASQA Handbook and General Permit:

**Section 1 - SWPPP Requirements:**

- 1.1 Introduction
- 1.2 District's MS4 Permits
- 1.3 Permit Registration Documents
- 1.4 SWPPP Availability and Implementation
- 1.5 SWPPP Amendments
- 1.6 Retention of Records
- 1.7 Required Non-Compliance Reporting
- 1.8 Annual Report
- 1.9 Changes to Permit Coverage
- 1.10 Notice of Termination

**Section 2 - Project Information:**

- 2.1 Project and Site Description
- 2.2 Permits and Governing Documents
- 2.3 Stormwater Run-on from Offsite Areas
- 2.4 Findings of the Construction Site Sediment and Receiving Water Risk Determination
- 2.5 Construction Schedule
- 2.6 Potential Construction Activity and Pollutant Sources
- 2.7 Identification of Non-Stormwater Discharges
- 2.8 Required Site Map Information

**Section 3 - Best Management Practices:**

- 3.1 Schedule for BMP Implementation
- 3.2 Erosion and Sediment Control
- 3.3 Non-Stormwater Controls, Waste and Material Management
- 3.4 Post-Construction Stormwater Management Measures

**Section 4 - BMP Inspection and Maintenance:**

- 4.1 BMP Inspection and Maintenance

**Section 5 - Training**

**Section 6 - Responsible Parties and Operators:**

- 6.1 Responsible Parties
- 6.2 Contractor List



## **Section 7 – Monitoring and Reporting Program (M&RP):**

- 7.1 Purpose
- 7.2 Applicability of Permit Requirements
- 7.3 Weather and Rain Event Tracking
- 7.4 Monitoring Locations
- 7.5 Safety and Monitoring Exemptions
- 7.6 Visual Monitoring
- 7.7 Water Quality Sampling and Analysis
- 7.8 Active Treatment System Monitoring
- 7.9 Bioassessment Monitoring
- 7.10 Watershed Monitoring Option
- 7.11 Quality Assurance and Quality Control
- 7.12 Records Retention

To ensure that the preparation, implementation, and oversight of the SWPPP is sufficient for effective pollution prevention, individuals responsible for creating, revising, overseeing, and implementing the SWPPP should participate in applicable training programs and document such training in the SWPPP. A copy of the SWPPP should be located at the construction site.

The following notes (or notes of substantially similar intent) that address pollution prevention to the Maximum Extent Practicable during the construction phase of a project on a year-round basis need to be placed on the Stormwater and Non-Stormwater Pollution Control Drawings:

- ◆ Erosion control BMPs shall be implemented and maintained to minimize and/or prevent the entrainment of soil in runoff from disturbed soil areas on construction sites.
- ◆ Sediment control BMPs shall be implemented and maintained to prevent and/or minimize the transport of soil from the construction site.
- ◆ Stockpiles of soil shall be properly contained to eliminate or reduce sediment transport from the site to streets, drainage facilities or adjacent properties via runoff, vehicle tracking or wind.
- ◆ Appropriate BMPs for construction-related materials, wastes, spills or residues shall be implemented to eliminate or reduce transport from the site to streets, drainage facilities or adjoining properties by wind or runoff.
- ◆ Runoff from equipment and vehicle washing shall be contained at construction sites and must not be discharged to receiving waters or the local storm drain system. Washwaters or rinsate from ready mix, concrete, or cement vehicles must be handled appropriately and may not be discharged to receiving waters or any storm drain system.
- ◆ All construction contractor and subcontractor personnel are to be made aware of the required BMPs and good housekeeping measures for the project site and any associated construction staging areas.

- ◆ At the end of each day of construction activity all construction debris and waste materials shall be collected and properly disposed in trash or recycle bins.
- ◆ Construction sites shall be maintained in such a condition that a storm does not carry wastes or pollutants off the site. Discharges other than stormwater (non-stormwater discharges) are prohibited, except as authorized by an individual NPDES Permit or the State-wide General Permit for Stormwater Discharges Associated with Construction Activity. Potential pollutants include but are not limited to: solid or liquid chemical spills; wastes from paints, stains, sealants, solvents, detergents, glues, lime, pesticides, herbicides, fertilizers, wood preservatives and asbestos fibers; paint flakes or stucco fragments; fuels, oils, lubricants and hydraulic, radiator or battery fluids; concrete and related cutting or curing residues; floatable wastes; wastes from engine/equipment steam cleaning or chemical degreasing; wastes from street cleaning; and super-chlorinated potable water from line flushing and testing. During construction, disposal of such materials should occur in a specified and controlled temporary area onsite physically separated from potential stormwater runoff, with ultimate disposal in accordance with local, State and Federal requirements.
- ◆ Discharging contaminated groundwater produced by dewatering groundwater that has infiltrated into the construction site is prohibited. Discharging of contaminated soils via surface erosion is also prohibited.
- ◆ The Contractor is required to notify and obtain approval from the District ten (10) days prior to any non-stormwater discharge or dewatering associated with Contractor's construction activities.
- ◆ Construction sites shall be managed to minimize the exposure time of disturbed soil areas through phasing and scheduling of grading to the extent feasible and the use of temporary and permanent soil stabilization.
- ◆ BMPs shall be maintained at all times. In addition, BMPs shall be inspected prior to predicted storm events and following storm events.

29.4 PRD and Rain Event Action Plan (REAP) Amendments - If the scope or schedule of the project changes, the Contractor shall immediately notify the Engineer. The Engineer will determine if the Contractor will be required to recalculate the Risk Assessment. If it is determined by the Engineer that a new Risk Assessment is required, the Engineer will notify the Contractor to resubmit amended PRDs and in the case that the risk level increases, the Contractor shall comply with additional applicable requirements of the General Permit, including preparation and implementation of REAPs, M&RP, Numeric Action Level (NAL) Exceedance Reports, and annual reporting requirements. The Contractor shall also prepare amendments to the PRDs, both graphically and in narrative form, whenever there is a change in Contractor's construction activities or operations which may result in the discharge of pollutants to surface waters, groundwaters, municipal storm drain systems, or as deemed necessary by the Engineer. The Contractor shall also amend the PRDs if they are in violation of any condition of the General Permit, or has not effectively achieved the objective of reducing pollutants in stormwater discharges. Amendments shall show additional BMPs, revised Contractor's construction activities or operations, including those in areas not shown in the initially approved SWPPP, which are required on the project to effectively control water pollution.

Amendments to the PRDs shall be submitted for review and approval by the Engineer in the same manner specified for the initial approval of the PRDs. The Contractor shall date and attach all approved amendments to any of the PRDs. Upon approval of the amendment, the Contractor shall implement the approved changes, revised construction activities or operations.

29.5 Non-Compliance Reporting - If the project is in non-compliance at any time, the Contractor shall make a written report to the Engineer within two (2) calendar days of identification of non-compliance activities.

29.6 SWPPP Implementation - Upon approval of the SWPPP, the Contractor shall be responsible throughout the duration of the project for placing, installing, constructing, inspecting and maintaining the BMPs as well as conducting the M&RP as included in the SWPPP and any amendments thereto, and for removing and disposing of temporary BMPs. All SWPPP implementation shall be performed or supervised by a QSP. Unless otherwise directed by the Engineer or specified in these Detailed Specifications, the Contractor's responsibility for SWPPP implementation shall continue throughout any temporary suspension of work ordered in accordance with Section 6.05, "TEMPORARY SUSPENSION OF THE WORK", of the General Provisions. Requirements for installation, construction, inspection, maintenance, removal and disposal of BMPs are specified in the CASQA Construction BMP Handbook Portal and these Detailed Specifications.

**The Engineer may order the suspension of construction operations if the Contractor fails to comply with the requirements of this section, "Stormwater and Non-Stormwater Pollution Control", as determined by the Engineer.**

**The Contractor will not be compensated for sampling and analysis work because of the Contractor's failure to properly implement, inspect, maintain and repair BMPs in the approved SWPPP and any amendments thereto, or for failing to store construction materials or wastes in watertight containers.**

- (a) Stormwater Pollution Control - **The Contractor shall implement soil stabilization practices and sediment control BMPs, including minimum requirements as presented in the CASQA Construction BMP Handbook Portal, on all disturbed areas of the project site throughout the duration of the project.**

Implementation of soil stabilization practices and sediment control BMPs for soil-disturbed areas, including but not limited to, rough graded access roads, slopes, channel inverts, operational inlets and outlets of the project shall be completed prior to soil disturbance. The General Permit requires BMPs to be deployed throughout the duration of the project.

The Engineer may require the Contractor, on a case-by-case basis, to reduce the active, soil-disturbed area limit of the project. The Contractor shall demonstrate the ability and preparedness to fully deploy soil stabilization practices and sediment control BMPs to protect soil-disturbed areas of the project

site by maintaining an adequate quantity of soil stabilization and sediment control materials onsite to protect exposed, soil-disturbed areas and a detailed plan for the mobilization of sufficient labor and equipment to fully deploy the required BMPs prior to the onset of precipitation and for the duration of the project.

Throughout the duration of the project, soil-disturbed areas of the project site shall be considered to be inactive whenever soil disturbing activities are expected to be discontinued for a period of fourteen (14) calendar days or more. Areas that will become inactive shall be fully protected with soil stabilization practices such as covering with mulch, temporary seeding, fiber rolls, blankets, etc., within ten (10) calendar days of the discontinuance of soil disturbing activities or two (2) calendar days prior to the onset of precipitation, whichever is first to occur. Areas that will become inactive shall be fully protected with sediment control BMPs within ten (10) calendar days of the discontinuance of soil disturbing activities or two (2) calendar days prior to the onset of precipitation, whichever is first to occur.

Throughout the duration of the project, the project site shall be fully protected with soil stabilization practices and sediment control BMPs. The Contractor shall monitor the weather forecast on a daily basis. The National Weather Service forecast shall be used.

- (b) **Non-Stormwater Pollution Control** - The Contractor shall implement, year-round and throughout the duration of the project, BMPs included in the SWPPP for sediment tracking, wind erosion, non-stormwater management, and waste management and disposal.
- (c) **Inspections and Reporting** - The Contractor shall ensure that a QSP regularly inspects the construction site for BMPs identified in the SWPPP to ensure the proper implementation and functioning of BMPs. The QSP shall identify corrective actions and time frames to address any damaged BMPs or reinstate any BMPs that have been discontinued. All repairs and design changes shall begin to be implemented within 72 hours of identification.

At a minimum, the Contractor shall inspect the construction site as follows:

1. Prior to a forecast storm;
2. After any precipitation which causes runoff capable of carrying sediment from the construction site;
3. At 24-hour intervals during extended precipitation events; and
4. At a regular interval of once every week.

The construction site inspection checklist provided in the CASQA SWPPP Template shall be used to ensure that the necessary BMPs are being properly implemented and are functioning adequately. The Contractor shall submit one copy of each site inspection record to the Engineer.

- (d) Maintenance - The Contractor's QSP shall maintain construction site BMPs identified in the SWPPP to ensure the proper implementation and functioning of BMPs. If the QSP or the Engineer identifies a deficiency in the deployment or functioning of an identified BMP, the QSP shall begin implementing repairs or design changes within 72 hours of identification and complete as soon as possible. The correction of deficiencies shall be at no additional cost to the District.
- (e) Training - The Contractor shall ensure that all persons responsible for implementing requirements of the General Permit shall be appropriately trained in accordance with Section VII "Training Qualifications and Certification Requirements" of the General Permit. Training should be both formal and informal, occur on an ongoing basis, and should include training offered by recognized governmental agencies or professional organizations. All training shall be documented and included in the SWPPP as an appendix.

The Contractor shall ensure that SWPPPs are written, amended and certified by a QSD. The Contractor shall also ensure that all inspection, maintenance, repair and sampling activities shall be performed or supervised by a QSP. A QSP is a person responsible for non-stormwater and stormwater visual observations, sampling and analysis.

**29.7 Non-Stormwater Discharge or Dewatering - Dewatering activity should only be considered after other methods have been determined to be inadequate for storm drain construction by the Engineer.** If groundwater will be encountered during the project activities, the dewatering activity must be covered by the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant Threat to Water Quality (De Minimus Permit), Santa Ana Regional Water Quality Control Board Order No. R8-2009-0003. The Contractor shall comply with this Order, and notify and obtain approval from the Engineer fifteen (15) days prior to any non-stormwater discharging of groundwater dewatering. If an emergency or unforeseen dewatering activity that will discharge to Waters of the United States occurs, the Contractor shall contact the Engineer immediately.

When discharging groundwater from dewatering activities to surface waters, the Contractor shall comply with and implement the Monitoring and Reporting Program required under Order No. R8-2009-0003. This Order can be downloaded from [http://www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2009\\_orders.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2009_orders.shtml). Under the Monitoring and Reporting Program, the Contractor shall prepare the monitoring report in accordance with Attachment E of the Order. The Contractor must submit the Monitoring Reports to the Engineer by the 15<sup>th</sup> day of each month following the monitoring period. The District will submit the Monitoring Reports to the Santa Ana Regional Water Quality Control Board. The Monitoring Reports shall cover the previous month's monitoring activities.

If there is any other form of non-stormwater discharge from the project to surface waters, the Contractor shall immediately contact the Engineer to determine appropriate actions required for coverage under the De Minimus Permit.

**Failure of the Contractor to fully comply with this requirement may result in the suspension of construction operations and liability for any associated monitoring, fines, penalties and remediation activities related to the discharge.**

29.8 Reports -

- (a) Annual Report - The Contractor shall be responsible for preparing an Annual Report to meet the requirements of Section XVI of the General Permit covering the preceding period of construction from July 1<sup>st</sup> to June 30<sup>th</sup>. The Annual Report shall be structured in accordance with the CASQA Construction BMP Handbook Portal Section 1.7. The Contractor shall submit two (2) copies of the Annual Report to the Engineer by July 15<sup>th</sup> of each year for review and approval. The Contractor shall allow ten (10) working days for the Engineer to review the Annual Report. If revisions are required as determined by the Engineer, the Contractor shall revise and resubmit the Annual Report within three (3) working days of receipt of the Engineer's comments. The Contractor shall submit four (4) copies of the approved Annual Report to the Engineer prior to August 15<sup>th</sup> of each year. **The Contractor shall be responsible for providing an Annual Report to the Engineer for any construction occurring for part of the year after July 1<sup>st</sup> prior to receiving final payment on the project.**
- (b) Monthly Report - The Contractor shall prepare and submit to the Engineer a Monthly Report within five (5) working days of the end of the month including:
1. All visual observation reports;
  2. All sampling and analysis reports;
  3. All NAL Exceedance Reports; and
  4. Summary of changes to the SWPPP and or REAP based on inspection results for the preceding month.

29.9 Payment - The contract lump sum price paid for Stormwater and Non-Stormwater Pollution Control work shall include full compensation for furnishing all labor, materials, tools, equipment and incidentals for doing all the work involved in developing, preparing, obtaining approval of, revising and amending the PRDs, and installing, constructing, maintaining, removing and disposing of BMPs as shown in the SWPPP, as specified in the CASQA Handbook, General Permit and these Detailed Specifications, and as directed by the Engineer.

The contract lump sum price paid for Non-Stormwater Discharge or Dewatering shall include full compensation for compliance of Section 29.7, "Non-Stormwater Discharge or Dewatering". **Contractor shall not be paid any portion of the contract lump sum if discharge of groundwater from dewatering activities to surface waters is avoided.**

Monthly payment will be made on a basis of the percentage of work completed on the entire project and subject to the submittal of a complete Monthly Report as specified in Section 29.8(b). Failure to complete or report required visual inspections, monitoring, sampling and

analysis requirements, NAL Exceedance Reports, and/or other necessary follow-up actions to ensure that the project stays in compliance with the General Permit can be the basis for reducing monthly progress payments for the project. Monthly progress payments will be reduced by the amount of direct costs, overhead costs and engineering costs incurred by the Engineer to address compliance deficiencies, including costs to conduct inspections, monitoring, reporting and supplemental BMP implementation necessary to comply with the General Permit and costs incurred by the Engineer to address complaints, additional State inspections and violations and/or fines issued by the State or USEPA associated with failure to properly comply with the General Permit. Progress payment reductions can exceed the monthly percentage or total contract lump sum price for Stormwater and Non-Stormwater Pollution Control work.

Payment will be made on a basis of the percentage of work completed on the entire project.

SECTION 30 AND SECTION 31 - NOT USED





APPENDIX "A"

SOUTH COAST AIR QUALITY  
MANAGEMENT DISTRICT

RULE 403

(Adopted May 7, 1976) (Amended November 6, 1992)  
(Amended July 9, 1993) (Amended February 14, 1997)  
(Amended December 11, 1998)(Amended April 2, 2004)  
(Amended June 3, 2005)

**RULE 403. FUGITIVE DUST**

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

- (1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.
- (2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.
- (3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.
- (4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.
- (5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

- (6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.
- (7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.
- (8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.
- (9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.
- (10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.
- (11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.
- (12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.
- (13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

- (14) **DISTURBED SURFACE AREA** means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:
- (A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;
  - (B) been paved or otherwise covered by a permanent structure; or
  - (C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.
- (15) **DUST SUPPRESSANTS** are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.
- (16) **EARTH-MOVING ACTIVITIES** means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.
- (17) **DUST CONTROL SUPERVISOR** means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.
- (18) **FUGITIVE DUST** means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.
- (19) **HIGH WIND CONDITIONS** means that instantaneous wind speeds exceed 25 miles per hour.
- (20) **INACTIVE DISTURBED SURFACE AREA** means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.
- (21) **LARGE OPERATIONS** means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

- meters (5,000 cubic yards) or more three times during the most recent 365-day period.
- (22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.
- (23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.
- (24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.
- (25) PM<sub>10</sub> means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.
- (26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.
- (27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.
- (28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.
- (29) SIMULTANEOUS SAMPLING means the operation of two PM<sub>10</sub> samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.
- (30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

- (31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.
  - (32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.
  - (34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.
  - (35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.
  - (36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.
  - (37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.
- (d) Requirements
- (1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

- (A) the dust remains visible in the atmosphere beyond the property line of the emission source; or
  - (B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.
- (2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.
- (3) No person shall cause or allow PM<sub>10</sub> levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM<sub>10</sub> monitoring. If sampling is conducted, samplers shall be:
- (A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM<sub>10</sub>.
  - (B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.
- (4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.
- (5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.
- (A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

- (B) Pave the surface extending at least 100 feet and at least 20 feet wide.
  - (C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - (D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.
  - (E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).
- (6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.
- (e) Additional Requirements for Large Operations
- (1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:
    - (A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;
    - (B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;
    - (C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;



- (D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;
  - (E) identify a dust control supervisor that:
    - (i) is employed by or contracted with the property owner or developer;
    - (ii) is on the site or available on-site within 30 minutes during working hours;
    - (iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;
    - (iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and
  - (F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).
- (2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).
- (f) **Compliance Schedule**  
The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

- (1) The provisions of this Rule shall not apply to:
  - (A) Dairy farms.
  - (B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.
  - (C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.
  - (D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:
    - (i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;
    - (ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and
    - (iii) makes the completed self-monitoring form available to the Executive Officer upon request.
  - (E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:
    - (i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and
    - (ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and
    - (iii) makes the completed self-monitoring form available to the Executive Officer upon request.

- (F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.
  - (G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.
  - (H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.
  - (I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.
  - (J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:
    - (i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and
    - (ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.
  - (K) sandblasting operations.
- (2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:
- (A) When wind gusts exceed 25 miles per hour, provided that:

- (i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;
    - (ii) records are maintained in accordance with subparagraph (e)(1)(C).
  - (B) To unpaved roads, provided such roads:
    - (i) are used solely for the maintenance of wind-generating equipment; or
    - (ii) are unpaved public alleys as defined in Rule 1186; or
    - (iii) are service roads that meet all of the following criteria:
      - (a) are less than 50 feet in width at all points along the road;
      - (b) are within 25 feet of the property line; and
      - (c) have a traffic volume less than 20 vehicle-trips per day.
  - (C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.
- (3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.
  - (4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:
    - (A) Blasting operations which have been permitted by the California Division of Industrial Safety; and
    - (B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.
  - (5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

- (6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.
- (7) The provisions of subdivision (e) shall not apply to:
  - (A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.
  - (B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.
  - (C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.
- (8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM<sub>10</sub> pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
 (Applicable to All Construction Activity Sources)

| Source Category       | Control Measure                                                                                  | Guidance                                                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Backfilling           | 01-1 Stabilize backfill material when not actively handling; and                                 | ✓ Mix backfill soil with water prior to moving                                                                                                        |
|                       | 01-2 Stabilize backfill material during handling; and                                            | ✓ Dedicate water truck or high capacity hose to backfilling equipment                                                                                 |
|                       | 01-3 Stabilize soil at completion of activity.                                                   | ✓ Empty loader bucket slowly so that no dust plumes are generated<br>✓ Minimize drop height from loader bucket                                        |
| Clearing and grubbing | 02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and | ✓ Maintain live perennial vegetation where possible                                                                                                   |
|                       | 02-2 Stabilize soil during clearing and grubbing activities; and                                 | ✓ Apply water in sufficient quantity to prevent generation of dust plumes                                                                             |
|                       | 02-3 Stabilize soil immediately after clearing and grubbing activities.                          |                                                                                                                                                       |
| Clearing forms        | 03-1 Use water spray to clear forms; or                                                          | ✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements                                                                   |
|                       | 03-2 Use sweeping and water spray to clear forms; or                                             |                                                                                                                                                       |
|                       | 03-3 Use vacuum system to clear forms.                                                           |                                                                                                                                                       |
| Crushing              | 04-1 Stabilize surface soils prior to operation of support equipment; and                        | ✓ Follow permit conditions for crushing equipment                                                                                                     |
|                       | 04-2 Stabilize material after crushing.                                                          | ✓ Pre-water material prior to loading into crusher<br>✓ Monitor crusher emissions opacity<br>✓ Apply water to crushed material to prevent dust plumes |

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
 (Applicable to All Construction Activity Sources)

| Source Category                | Control Measure                                                                                                                                          | Guidance                                                                                                                                                                              |
|--------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Cut and fill                   | 05-1 Pre-water soils prior to cut and fill activities; and                                                                                               | ✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration                                                                                           |
|                                | 05-2 Stabilize soil during and after cut and fill activities.                                                                                            | ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts                                                                                                      |
| Demolition – mechanical/manual | 06-1 Stabilize wind erodible surfaces to reduce dust; and                                                                                                | ✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes                                                                                               |
|                                | 06-2 Stabilize surface soil where support equipment and vehicles will operate; and                                                                       |                                                                                                                                                                                       |
|                                | 06-3 Stabilize loose soil and demolition debris; and                                                                                                     |                                                                                                                                                                                       |
|                                | 06-4 Comply with AQMD Rule 1403.                                                                                                                         |                                                                                                                                                                                       |
| Disturbed soil                 | 07-1 Stabilize disturbed soil throughout the construction site; and                                                                                      | ✓ Limit vehicular traffic and disturbances on soils where possible                                                                                                                    |
|                                | 07-2 Stabilize disturbed soil between structures                                                                                                         | ✓ If interior block walls are planned, install as early as possible<br>✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes |
| Earth-moving activities        | 08-1 Pre-apply water to depth of proposed cuts; and                                                                                                      | ✓ Grade each project phase separately, timed to coincide with construction phase                                                                                                      |
|                                | 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and | ✓ Upwind fencing can prevent material movement on site                                                                                                                                |
|                                | 08-3 Stabilize soils once earth-moving activities are complete.                                                                                          | ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes                                                                        |

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
 (Applicable to All Construction Activity Sources)

| Source Category                       | Control Measure                                                                                                                                                                                                                                                                                                                                                             | Guidance                                                                                                                                                                                                                                                                                                                                                                   |
|---------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Importing/exporting of bulk materials | 09-1 Stabilize material while loading to reduce fugitive dust emissions; and<br>09-2 Maintain at least six inches of freeboard on haul vehicles; and<br>09-3 Stabilize material while transporting to reduce fugitive dust emissions; and<br>09-4 Stabilize material while unloading to reduce fugitive dust emissions; and<br>09-5 Comply with Vehicle Code Section 23114. | <ul style="list-style-type: none"> <li>✓ Use tarps or other suitable enclosures on haul trucks</li> <li>✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage</li> <li>✓ Comply with track-out prevention/mitigation requirements</li> <li>✓ Provide water while loading and unloading to reduce visible dust plumes</li> </ul>        |
| Landscaping                           | 10-1 Stabilize soils, materials, slopes                                                                                                                                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>✓ Apply water to materials to stabilize</li> <li>✓ Maintain materials in a crusted condition</li> <li>✓ Maintain effective cover over materials</li> <li>✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes</li> <li>✓ Hydroseed prior to rain season</li> </ul> |
| Road shoulder maintenance             | 11-1 Apply water to unpaved shoulders prior to clearing; and<br>11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.                                                                                                                                                                     | <ul style="list-style-type: none"> <li>✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs</li> <li>✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs</li> </ul>                                                                                            |



**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
**(Applicable to All Construction Activity Sources)**

| Source Category                          | Control Measure                                                                                                                                                                                                                                                                                                              | Guidance                                                                                                                                                                                                                                                                                                               |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Screening                                | 12-1 Pre-water material prior to screening; and<br>12-2 Limit fugitive dust emissions to opacity and plume length standards; and<br>12-3 Stabilize material immediately after screening.                                                                                                                                     | <ul style="list-style-type: none"> <li>✓ Dedicate water truck or high capacity hose to screening operation</li> <li>✓ Drop material through the screen slowly and minimize drop height</li> <li>✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point</li> </ul> |
| Staging areas                            | 13-1 Stabilize staging areas during use; and<br>13-2 Stabilize staging area soils at project completion.                                                                                                                                                                                                                     | <ul style="list-style-type: none"> <li>✓ Limit size of staging area</li> <li>✓ Limit vehicle speeds to 15 miles per hour</li> <li>✓ Limit number and size of staging area entrances/exists</li> </ul>                                                                                                                  |
| Stockpiles/<br>Bulk Material<br>Handling | 14-1 Stabilize stockpiled materials.<br>14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage. | <ul style="list-style-type: none"> <li>✓ Add or remove material from the downwind portion of the storage pile</li> <li>✓ Maintain storage piles to avoid steep sides or faces</li> </ul>                                                                                                                               |

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
 (Applicable to All Construction Activity Sources)

| Source Category                           | Control Measure                                                                                                                                                                              | Guidance                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Traffic areas for construction activities | 15-1 Stabilize all off-road traffic and parking areas; and<br>15-2 Stabilize all haul routes; and<br>15-3 Direct construction traffic over established haul routes.                          | <ul style="list-style-type: none"> <li>✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas</li> <li>✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes</li> </ul>                                                                                                                                        |
| Trenching                                 | 16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and<br>16-2 Stabilize soils at the completion of trenching activities.                          | <ul style="list-style-type: none"> <li>✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching</li> <li>✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment</li> </ul> |
| Truck loading                             | 17-1 Pre-water material prior to loading; and<br>17-2 Ensure that freeboard exceeds six inches (CVC 23114)                                                                                   | <ul style="list-style-type: none"> <li>✓ Empty loader bucket such that no visible dust plumes are created</li> <li>✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading</li> </ul>                                                                                                                                                                   |
| Turf Overseeding                          | 18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and<br>18-2 Cover haul vehicles prior to exiting the site. | <ul style="list-style-type: none"> <li>✓ Haul waste material immediately off-site</li> </ul>                                                                                                                                                                                                                                                                                                |

**TABLE 1**  
**BEST AVAILABLE CONTROL MEASURES**  
 (Applicable to All Construction Activity Sources)

| Source Category            | Control Measure                                                                                                                                                                                                                                                                                                                                                                                | Guidance                                                                                                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------|
| Unpaved roads/parking lots | 19-1 Stabilize soils to meet the applicable performance standards; and<br>19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.                                                                                                                                                                                                                     | ✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements |
| Vacant land                | 20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures. |                                                                                                                           |

**Table 2**  
**DUST CONTROL MEASURES FOR LARGE OPERATIONS**

| <b>FUGITIVE DUST SOURCE CATEGORY</b>                                                       | <b>CONTROL ACTIONS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|--------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Earth-moving (except construction cutting and filling areas, and mining operations)</b> | <p>(1a) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR</p> <p>(1a-1) For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.</p>                                                                                                                                                                                 |
| <b>Earth-moving:<br/>Construction fill areas:</b>                                          | <p>(1b) Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.</p> |

Table 2 (Continued)

| FUGITIVE DUST SOURCE CATEGORY                                              | CONTROL ACTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Earth-moving:<br/>Construction cut areas<br/>and mining operations:</b> | (1c) Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Disturbed surface areas<br/>(except completed<br/>grading areas)</b>    | (2a/b) Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Disturbed surface<br/>areas: Completed<br/>grading areas</b>            | (2c) Apply chemical stabilizers within five working days of grading completion; OR<br><br>(2d) Take actions (3a) or (3c) specified for inactive disturbed surface areas.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Inactive disturbed<br/>surface areas</b>                                | (3a) Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR<br><br>(3b) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR<br><br>(3c) Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR<br><br>(3d) Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas. |

Table 2 (Continued)

| FUGITIVE DUST SOURCE CATEGORY | CONTROL ACTIONS                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Unpaved Roads</b>          | <p>(4a) Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR</p> <p>(4b) Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR</p> <p>(4c) Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.</p>                                                                             |
| <b>Open storage piles</b>     | <p>(5a) Apply chemical stabilizers; OR</p> <p>(5b) Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR</p> <p>(5c) Install temporary coverings; OR</p> <p>(5d) Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.</p> |
| <b>All Categories</b>         | <p>(6a) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.</p>                                                                                                                                                                                                                                                                                                                                                      |

**TABLE 3  
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS**

| <b>FUGITIVE DUST SOURCE CATEGORY</b> | <b>CONTROL MEASURES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Earth-moving</b>                  | (1A) Cease all active operations; OR<br>(2A) Apply water to soil not more than 15 minutes prior to moving such soil.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Disturbed surface areas</b>       | (0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR<br>(1B) Apply chemical stabilizers prior to wind event; OR<br>(2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR<br>(3B) Take the actions specified in Table 2, Item (3c); OR<br>(4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas. |
| <b>Unpaved roads</b>                 | (1C) Apply chemical stabilizers prior to wind event; OR<br>(2C) Apply water twice per hour during active operation; OR<br>(3C) Stop all vehicular traffic.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>Open storage piles</b>            | (1D) Apply water twice per hour; OR<br>(2D) Install temporary coverings.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Paved road track-out</b>          | (1E) Cover all haul vehicles; OR<br>(2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>All Categories</b>                | (1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

**Table 4**  
**(Conservation Management Practices for Confined Animal Facilities)**

| <b>SOURCE CATEGORY</b>                                                        | <b>CONSERVATION MANAGEMENT PRACTICES</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Manure Handling</b><br><br>(Only applicable to Commercial Poultry Ranches) | (1a) Cover manure prior to removing material off-site; AND<br>(1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND<br>(1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d).<br>(1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material. |
| <b>Feedstock Handling</b>                                                     | (2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Disturbed Surfaces</b>                                                     | (3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR<br>(3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR<br>(3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.                                                                                                                                                                                                 |
| <b>Unpaved Roads</b>                                                          | (4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR<br>(4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR<br>(4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.                                                                                                 |
| <b>Equipment Parking Areas</b>                                                | (5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR<br>(5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).                                                                                                                                                                                                                                                                                                                                                                                                              |



APPENDIX "B"

PROJECT SIGNS

8'-0"

RIVERSIDE COUNTY FLOOD CONTROL  
AND  
WATER CONSERVATION DISTRICT ①

**NORTH NORCO CHANNEL,  
STAGE 10** ②

TOTAL CONSTRUCTION COST: \$ \* ③  
FUNDED BY RIVERSIDE COUNTY FLOOD CONTROL AND  
WATER CONSERVATION DISTRICT ④

START DATE: \* ④ APPROX. COMPLETION DATE: \*

**ENGINEER:**

WARREN D. WILLIAMS  
GENERAL MANAGER-CHIEF ENGINEER ⑤  
RIVERSIDE COUNTY FLOOD CONTROL  
AND WATER CONSERVATION DISTRICT  
RIVERSIDE, CALIFORNIA  
(951) 955-1200

**CONTRACTOR:**

\*

3/4" CDX GRADE  
PLYWOOD

LETTER SCHEDULE

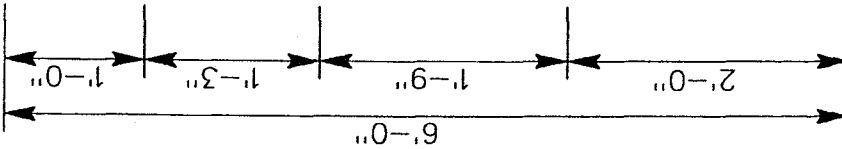
|   | SIZE | COLOR |
|---|------|-------|
| ① | 2"   | BLACK |
| ② | 4"   | ROYAL |
| ③ | 3"   | ROYAL |
| ④ | 2"   | ROYAL |
| ⑤ | 2"   | BLACK |



NOTES:

1. MINIMUM SPACING BETWEEN LINES 1".
2. \* -INFO. FURNISHED BY ENGINEER
3. ALL LETTERS FILLED AND CENTERED
4. THE STRIPES ARE GOLD AND BLACK ON WHITE BACKGROUND.

APPENDIX "B" PROJECT SIGN



APPENDIX "C"

LOG OF SOIL BORINGS



JOB NO.: 07G205      DRILLING DATE: 9/25/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 15 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS |        |            |                   |             | DESCRIPTION                                                                                             | LABORATORY RESULTS |                      |              |               |                        |                        | COMMENTS |
|---------------|--------|------------|-------------------|-------------|---------------------------------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|------------------------|----------|
| DEPTH (FEET)  | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                                                         | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) | UNCONFINED SHEAR (TSF) |          |
|               |        |            |                   |             | SURFACE ELEVATION: 565 feet MSL                                                                         |                    |                      |              |               |                        |                        |          |
|               |        | 49         |                   |             | POSSIBLE FILL: Brown Silty fine Sand, trace medium to coarse Sand, trace Clay, medium dense-dry to damp | 105                | 2                    |              |               |                        |                        |          |
|               |        | 36         |                   |             | ALLUVIUM: Red Brown Silty fine Sand, trace medium Sand, trace Clay, medium dense-damp                   | 109                | 6                    |              |               |                        |                        |          |
| 5             |        | 30         |                   |             | Brown Clayey fine Sand, trace medium Sand, medium dense-damp to moist                                   | 111                | 7                    |              |               |                        |                        |          |
|               |        | 30         |                   |             | Brown Silty fine to medium Sand, trace coarse Sand, little Clay, medium dense-damp                      | 106                | 7                    |              |               |                        |                        |          |
| 10            |        | 17         |                   |             | Red Brown Silty fine to medium Sand, little Clay, some coarse Sand, medium dense-damp                   | 119                | 5                    |              |               |                        |                        |          |
|               |        | 65         |                   |             | Red Brown fine to coarse Sand, some Silt, trace Clay, very dense-moist                                  |                    | 6                    |              |               |                        |                        |          |
| 15            |        | 41         |                   |             | @ 18½ to 20 feet, dense-wet                                                                             |                    | 9                    |              |               |                        |                        |          |
| 20            |        |            |                   |             | Boring Terminated at 20'                                                                                |                    |                      |              |               |                        |                        |          |

TEL 07G205 GPJ SOCALGEO.GDT 12/2/10



JOB NO.: 07G205      DRILLING DATE: 9/25/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 13 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   |             | DESCRIPTION                                                                             | LABORATORY RESULTS |                      |              |               |                        | COMMENTS |                        |  |
|---------------------------------|--------|------------|-------------------|-------------|-----------------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|----------|------------------------|--|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                                         | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) |          | UNCONFINED SHEAR (TSF) |  |
| SURFACE ELEVATION: 564 feet MSL |        |            |                   |             |                                                                                         |                    |                      |              |               |                        |          |                        |  |
| 5                               | X      | 11         |                   |             | ALLUVIUM, Brown Silty fine Sand to fine Sandy Silt, trace medium Sand, medium dense-dry |                    | 2                    |              |               |                        |          |                        |  |
|                                 | X      | 15         |                   |             | Brown Silty fine Sand, trace Clay, medium dense-damp                                    |                    | 8                    |              |               |                        |          |                        |  |
|                                 | X      | 10         |                   |             | Brown fine to coarse Sand, medium dense-damp                                            |                    | 3                    |              |               |                        |          |                        |  |
| 10                              | X      | 43         |                   |             | @ 8 1/2 to 10 feet, dense                                                               |                    | 4                    |              |               |                        |          |                        |  |
|                                 | X      | 86         |                   |             | Red Brown fine to coarse Sand, trace fine to coarse Gravel, very dense-moist            |                    | 6                    |              |               |                        |          |                        |  |
| 15                              | X      |            |                   |             | Boring Terminated at 15 1/2'                                                            |                    |                      |              |               |                        |          |                        |  |

TBL 07G205.GPJ SOCIALGEO.GDT 12/2/10



JOB NO.: 07G205      DRILLING DATE: 9/25/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 17 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   |             | DESCRIPTION                                                                                                    | LABORATORY RESULTS |                      |              |               |                        |                        | COMMENTS |
|---------------------------------|--------|------------|-------------------|-------------|----------------------------------------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|------------------------|----------|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                                                                | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) | UNCONFINED SHEAR (TSF) |          |
| SURFACE ELEVATION: 565 feet MSL |        |            |                   |             |                                                                                                                |                    |                      |              |               |                        |                        |          |
|                                 |        | 26         |                   |             | POSSIBLE FILL: Red Brown fine Sandy Silt, trace medium Sand, medium dense-dry to damp                          |                    | 4                    |              |               |                        |                        |          |
| 5                               |        | 29         |                   |             |                                                                                                                |                    | 5                    |              |               |                        |                        |          |
|                                 |        | 20         |                   |             | ALLUVIUM: Gray Brown to Red Brown fine to medium Sand, trace fine Gravel, trace Silt, medium dense-dry to damp |                    | 2                    |              |               |                        |                        |          |
| 10                              |        | 42         |                   |             | @ 8½ to 10 feet, dense-damp to moist                                                                           |                    | 4                    |              |               |                        |                        |          |
| 15                              |        | 39         |                   |             | Orange Brown to Brown fine to medium Sand, some coarse Sand, trace Silt, dense-moist                           |                    | 6                    |              |               |                        |                        |          |
| 20                              |        | 61         |                   |             |                                                                                                                |                    | 12                   |              |               |                        |                        |          |
| Boring Terminated at 20'        |        |            |                   |             |                                                                                                                |                    |                      |              |               |                        |                        |          |

TEL: 07G205.GPJ\_SOCALGEO.GOT\_122/10



JOB NO.: 07G205      DRILLING DATE: 9/26/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 5 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS |        |            |                   |             | DESCRIPTION                                                                   | LABORATORY RESULTS |                      |              |               |                        |                        | COMMENTS |
|---------------|--------|------------|-------------------|-------------|-------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|------------------------|----------|
| DEPTH (FEET)  | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                               | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) | UNCONFINED SHEAR (TSF) |          |
|               |        |            |                   |             | SURFACE ELEVATION: 565 feet MSL                                               |                    |                      |              |               |                        |                        |          |
|               |        |            |                   |             | ALLUVIUM: Brown Silty fine Sand, loose to medium dense-damp                   |                    |                      |              |               |                        |                        |          |
|               |        | 13         |                   |             |                                                                               | 105                | 3                    |              |               |                        |                        |          |
|               |        | 12         |                   |             | @ 3 to 4 feet, trace medium to coarse Sand, trace fine Gravel,                | 112                | 2                    |              |               |                        |                        |          |
| 5             |        | 11         |                   |             | Brown Silty fine Sand to fine Sandy Silt, loose-moist                         | 107                | 13                   |              |               |                        |                        |          |
|               |        | 23         |                   |             |                                                                               | 116                | 13                   |              |               |                        |                        |          |
|               |        | 23         |                   |             |                                                                               | 103                | 11                   |              |               |                        |                        |          |
| 10            |        |            |                   |             | Gray Brown Silty fine to coarse Sand, trace Clay, medium dense to dense-moist |                    |                      |              |               |                        |                        |          |
|               |        | 49         |                   |             |                                                                               |                    | 10                   |              |               |                        |                        |          |
| 15            |        |            |                   |             |                                                                               |                    |                      |              |               |                        |                        |          |
|               |        | 20         |                   |             | @ 18 1/2 to 20 feet, very moist to wet                                        |                    | 22                   |              |               |                        |                        |          |
| 20            |        |            |                   |             | Boring Terminated at 20'                                                      |                    |                      |              |               |                        |                        |          |

TBL 07G205.GPJ SOCALGEO.GDT 12/2/10



JOB NO.: 07G205      DRILLING DATE: 9/26/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 7 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   | DESCRIPTION | LABORATORY RESULTS                                                                                               |                   |                      |              |               |                        | COMMENTS |
|---------------------------------|--------|------------|-------------------|-------------|------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|--------------|---------------|------------------------|----------|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) |             | GRAPHIC LOG                                                                                                      | DRY DENSITY (PCF) | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) |          |
| SURFACE ELEVATION: 565 feet MSL |        |            |                   |             |                                                                                                                  |                   |                      |              |               |                        |          |
| 5                               | X      | 5          |                   | [Pattern]   | ALLUVIUM: Brown Silty fine Sand, trace medium Sand, trace Clay, loose-damp                                       |                   | 12                   |              |               |                        |          |
| 9                               | X      | 18         |                   | [Pattern]   | Red Brown Silty fine Sand to fine Sandy Silt, trace medium Sand, trace Clay, loose to medium Sand, damp to moist |                   | 11                   |              |               |                        |          |
| 10                              | X      | 9          |                   | [Pattern]   | Red Brown Silty fine to medium Sand, trace Clay, loose-moist                                                     |                   | 15                   |              |               |                        |          |
| 15                              | X      | 9          |                   | [Pattern]   | Red Brown Silty fine to medium Sand, trace Clay, loose-moist                                                     |                   | 14                   |              |               |                        |          |
| 15                              | X      | 29         |                   | [Pattern]   | Brown Silty fine to coarse Sand, trace Clay, medium dense-moist                                                  |                   | 13                   |              |               |                        |          |
| 20                              | X      | 35         |                   | [Pattern]   | Brown fine to coarse Sand, trace fine Gravel, dense-very moist                                                   |                   | 16                   |              |               |                        |          |
| Boring Terminated at 20'        |        |            |                   |             |                                                                                                                  |                   |                      |              |               |                        |          |

TBL 07G205.GPJ SOCALGEO.GDT 12/2/10





JOB NO.: 07G205      DRILLING DATE: 9/26/07      WATER DEPTH: Dry  
 PROJECT: Proposed Retail Development      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 3.5 feet  
 LOCATION: Norco, California      LOGGED BY: Tim Smith      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   | DESCRIPTION | LABORATORY RESULTS                                                                                      |                   |                      |              |               |                        | COMMENTS |
|---------------------------------|--------|------------|-------------------|-------------|---------------------------------------------------------------------------------------------------------|-------------------|----------------------|--------------|---------------|------------------------|----------|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) |             | GRAPHIC LOG                                                                                             | DRY DENSITY (PCF) | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) |          |
| SURFACE ELEVATION: 566 feet MSL |        |            |                   |             |                                                                                                         |                   |                      |              |               |                        |          |
|                                 |        |            |                   |             | ALLUVIUM: Red Brown Silty fine Sand, trace Clay, trace medium Sand, loose to medium dense-damp to moist |                   | 7                    |              |               |                        |          |
| 5                               |        | 8          |                   |             |                                                                                                         |                   | 13                   |              |               |                        |          |
|                                 |        | 12         |                   |             |                                                                                                         |                   | 13                   |              |               |                        |          |
|                                 |        | 9          |                   |             |                                                                                                         |                   | 13                   |              |               |                        |          |
|                                 |        | 8          |                   |             | Brown Clayey fine Sand, some medium Sand, some Silt, loose-moist                                        |                   | 13                   |              |               |                        |          |
| 10                              |        |            |                   |             |                                                                                                         |                   |                      |              |               |                        |          |
|                                 |        | 69         |                   |             | Gray Brown fine to coarse Sand, little fine Gravel, trace Silt, dense to very dense-damp to moist       |                   | 16                   |              |               |                        |          |
| 15                              |        |            |                   |             |                                                                                                         |                   |                      |              |               |                        |          |
|                                 |        | 40         |                   |             | @ 18½ to 20 feet, wet                                                                                   |                   | 16                   |              |               |                        |          |
| 20                              |        |            |                   |             |                                                                                                         |                   |                      |              |               |                        |          |
| Boring Terminated at 20'        |        |            |                   |             |                                                                                                         |                   |                      |              |               |                        |          |

TBL 07G205.GPJ, SOCAL.GEO.GDT, 12/21/10



JOB NO.: 07G205-7      DRILLING DATE: 11/11/10      WATER DEPTH: Dry  
 PROJECT: Flood Control Channel      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 14 feet  
 LOCATION: Norco, California      LOGGED BY: Daniel Nielsen      READING TAKEN: At Completion

| FIELD RESULTS |        |            |                   |             | DESCRIPTION                                                                                          | LABORATORY RESULTS |                      |              |               |                        |                        | COMMENTS |
|---------------|--------|------------|-------------------|-------------|------------------------------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|------------------------|----------|
| DEPTH (FEET)  | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                                                      | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) | UNCONFINED SHEAR (TSF) |          |
|               |        |            |                   |             | SURFACE ELEVATION: 569 feet MSL                                                                      |                    |                      |              |               |                        |                        |          |
|               |        | 17         |                   |             | ALLUVIUM: Light Brown Silty fine Sand, trace medium Sand, medium dense-damp                          | 108                | 4                    |              |               |                        |                        |          |
|               |        | 23         |                   |             | @ 3 to 4 feet, slightly porous                                                                       | 107                | 4                    |              |               |                        |                        |          |
| 5             |        | 13         |                   |             | Light Brown to Red Brown to Brown Silty fine Sand to fine Sandy Silt, trace to some Clay, loose-damp | 106                | 8                    |              |               |                        |                        |          |
|               |        | 13         |                   |             |                                                                                                      | 115                | 12                   |              |               |                        |                        |          |
| 10            |        | 9          |                   |             | Gray Brown to Brown fine Sandy Clay, little Silt, trace coarse Sand, moist to very moist             | 111                | 16                   |              |               |                        |                        |          |
|               |        | 11         |                   |             | Interbedded Light Gray Brown Clayey Silt to Silty fine Sand, medium dense-very moist to wet          |                    | 26                   |              |               |                        |                        |          |
| 15            |        | 30         |                   |             | Light Gray to Gray fine to coarse Sand, trace fine Gravel, medium dense to dense-wet                 |                    | 12                   |              |               |                        |                        |          |
| 20            |        |            |                   |             | Boring Terminated at 20'                                                                             |                    |                      |              |               |                        |                        |          |

TBL 07G205-7.GPJ SOCALGEO.GDT 12/21/10



JOB NO.: 07G205-7      DRILLING DATE: 11/11/10      WATER DEPTH: Dry  
 PROJECT: Flood Control Channel      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 11 feet  
 LOCATION: Norco, California      LOGGED BY: Daniel Nielsen      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   | DESCRIPTION | LABORATORY RESULTS                                                                            |                   |                      |              |               | COMMENTS |                        |
|---------------------------------|--------|------------|-------------------|-------------|-----------------------------------------------------------------------------------------------|-------------------|----------------------|--------------|---------------|----------|------------------------|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) |             | GRAPHIC LOG                                                                                   | DRY DENSITY (PCF) | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT |          | PASSING #200 SIEVE (%) |
| SURFACE ELEVATION: 567 feet MSL |        |            |                   |             |                                                                                               |                   |                      |              |               |          |                        |
|                                 |        | 12         |                   |             | ALLUVIUM: Red Brown Silty fine Sand, loose to medium dense-dry to damp                        |                   | 3                    |              |               |          |                        |
|                                 |        | 9          |                   |             |                                                                                               |                   | 4                    |              |               |          |                        |
| 5                               |        | 10         |                   |             | Brown Silty fine to medium Sand, trace coarse Sand, loose to medium dense-moist               |                   | 9                    |              |               |          |                        |
|                                 |        | 11         |                   |             | Gray Brown fine to medium Sand, trace coarse Sand, trace Silt, medium dense-very moist to wet |                   | 8                    |              |               |          |                        |
| 10                              |        |            |                   |             | @ 9 1/2 feet, Water observed on sampler                                                       |                   |                      |              |               |          |                        |
|                                 |        | 18         |                   |             | Gray fine to coarse Sand, medium dense-wet                                                    |                   | 13                   |              |               |          |                        |
| 15                              |        |            |                   |             |                                                                                               |                   |                      |              |               |          |                        |
|                                 |        | 33         |                   |             |                                                                                               |                   | 14                   |              |               |          |                        |
| 20                              |        |            |                   |             |                                                                                               |                   |                      |              |               |          |                        |
| Boring Terminated at 20'        |        |            |                   |             |                                                                                               |                   |                      |              |               |          |                        |

TBL 07G205-7.GPJ, SOCAL.GEO.GDT 12/2/10



JOB NO.: 07G205-7      DRILLING DATE: 11/11/10      WATER DEPTH: Dry  
 PROJECT: Flood Control Channel      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 10.5 feet  
 LOCATION: Norco, California      LOGGED BY: Daniel Nielsen      READING TAKEN: At Completion

| FIELD RESULTS                   |        |            |                   | DESCRIPTION | LABORATORY RESULTS                                                                                                |                   |                      |              |               |                        | COMMENTS |
|---------------------------------|--------|------------|-------------------|-------------|-------------------------------------------------------------------------------------------------------------------|-------------------|----------------------|--------------|---------------|------------------------|----------|
| DEPTH (FEET)                    | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) |             | GRAPHIC LOG                                                                                                       | DRY DENSITY (PCF) | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) |          |
| SURFACE ELEVATION: 568 feet MSL |        |            |                   |             |                                                                                                                   |                   |                      |              |               |                        |          |
|                                 |        | 12         |                   |             | ALLUVIUM: Red Brown Clayey fine to medium Sand, medium dense-dry to damp                                          |                   | 6                    |              |               |                        |          |
|                                 |        | 10         |                   |             | Red Brown Silty fine Sand, trace Clay, loose to medium dense-dry to damp                                          |                   | 11                   |              |               |                        |          |
| 5                               |        | 11         |                   |             | Interbedded Red Brown fine to medium Sand and Gray Brown to Red Brown fine Sandy Clay, medium dense to stiff-damp |                   | 6                    |              |               |                        |          |
|                                 |        | 9          |                   |             | Red Brown to Gray Brown Silty fine to medium Sand, trace Clay, loose-wet                                          |                   | 16                   |              |               |                        |          |
| 10                              |        |            |                   |             | @ 9 1/2 feet, Water observed on sampler                                                                           |                   |                      |              |               |                        |          |
|                                 |        | 24         |                   |             | Gray Brown fine to coarse Sand, trace Silt and Clay, little fine Gravel, medium dense-wet                         |                   | 12                   |              |               |                        |          |
| 15                              |        |            |                   |             |                                                                                                                   |                   |                      |              |               |                        |          |
|                                 |        | 23         |                   |             |                                                                                                                   |                   | 10                   |              |               |                        |          |
| 20                              |        |            |                   |             |                                                                                                                   |                   |                      |              |               |                        |          |
| Boring Terminated at 20'        |        |            |                   |             |                                                                                                                   |                   |                      |              |               |                        |          |

TBL 07G205-7.GPJ SOCAL.GEO.GDT 12/2/10



JOB NO.: 07G205-7      DRILLING DATE: 11/11/10      WATER DEPTH: Dry  
 PROJECT: Flood Control Channel      DRILLING METHOD: Hollow Stem Auger      CAVE DEPTH: 11 feet  
 LOCATION: Norco, California      LOGGED BY: Daniel Nielsen      READING TAKEN: At Completion

| FIELD RESULTS                     |        |            |                   |             | DESCRIPTION                                                                                                | LABORATORY RESULTS |                      |              |               |                        |                        | COMMENTS |
|-----------------------------------|--------|------------|-------------------|-------------|------------------------------------------------------------------------------------------------------------|--------------------|----------------------|--------------|---------------|------------------------|------------------------|----------|
| DEPTH (FEET)                      | SAMPLE | BLOW COUNT | POCKET PEN. (TSF) | GRAPHIC LOG |                                                                                                            | DRY DENSITY (PCF)  | MOISTURE CONTENT (%) | LIQUID LIMIT | PLASTIC LIMIT | PASSING #200 SIEVE (%) | UNCONFINED SHEAR (TSF) |          |
| SURFACE ELEVATION: 567.5 feet MSL |        |            |                   |             |                                                                                                            |                    |                      |              |               |                        |                        |          |
|                                   |        | 31         |                   |             | ALLUVIUM: Dark Red Brown Clayey fine to coarse Sand, medium dense-dry to damp.                             | 129                | 5                    |              |               |                        |                        |          |
|                                   |        | 24         |                   |             | Light Red Brown to Light Gray Brown Silty fine to medium Sand, trace coarse Sand, medium dense-dry to damp | 114                | 3                    |              |               |                        |                        |          |
| 5                                 |        | 24         |                   |             | Light Red Brown to Light Gray Brown fine to coarse Sand, trace Silt, medium dense-dry to damp              | 104                | 2                    |              |               |                        |                        |          |
|                                   |        | 33         |                   |             | Red Brown fine to medium Sand, trace coarse Sand, medium dense-moist to wet                                | 108                | 4                    |              |               |                        |                        |          |
| 10                                |        | 29         |                   |             | @ 9 feet, Water observed on sampler                                                                        | 110                | 3                    |              |               |                        |                        |          |
|                                   |        | 35         |                   |             | Light Gray Brown fine to coarse Sand, dense-wet                                                            |                    | 12                   |              |               |                        |                        |          |
| 15                                |        |            |                   |             |                                                                                                            |                    |                      |              |               |                        |                        |          |
|                                   |        | 31         |                   |             |                                                                                                            |                    | 13                   |              |               |                        |                        |          |
| 20                                |        |            |                   |             |                                                                                                            |                    |                      |              |               |                        |                        |          |
| Boring Terminated at 20'          |        |            |                   |             |                                                                                                            |                    |                      |              |               |                        |                        |          |

TBL 07G205-7.GPJ SOCALGEO.GDT 12/2/10

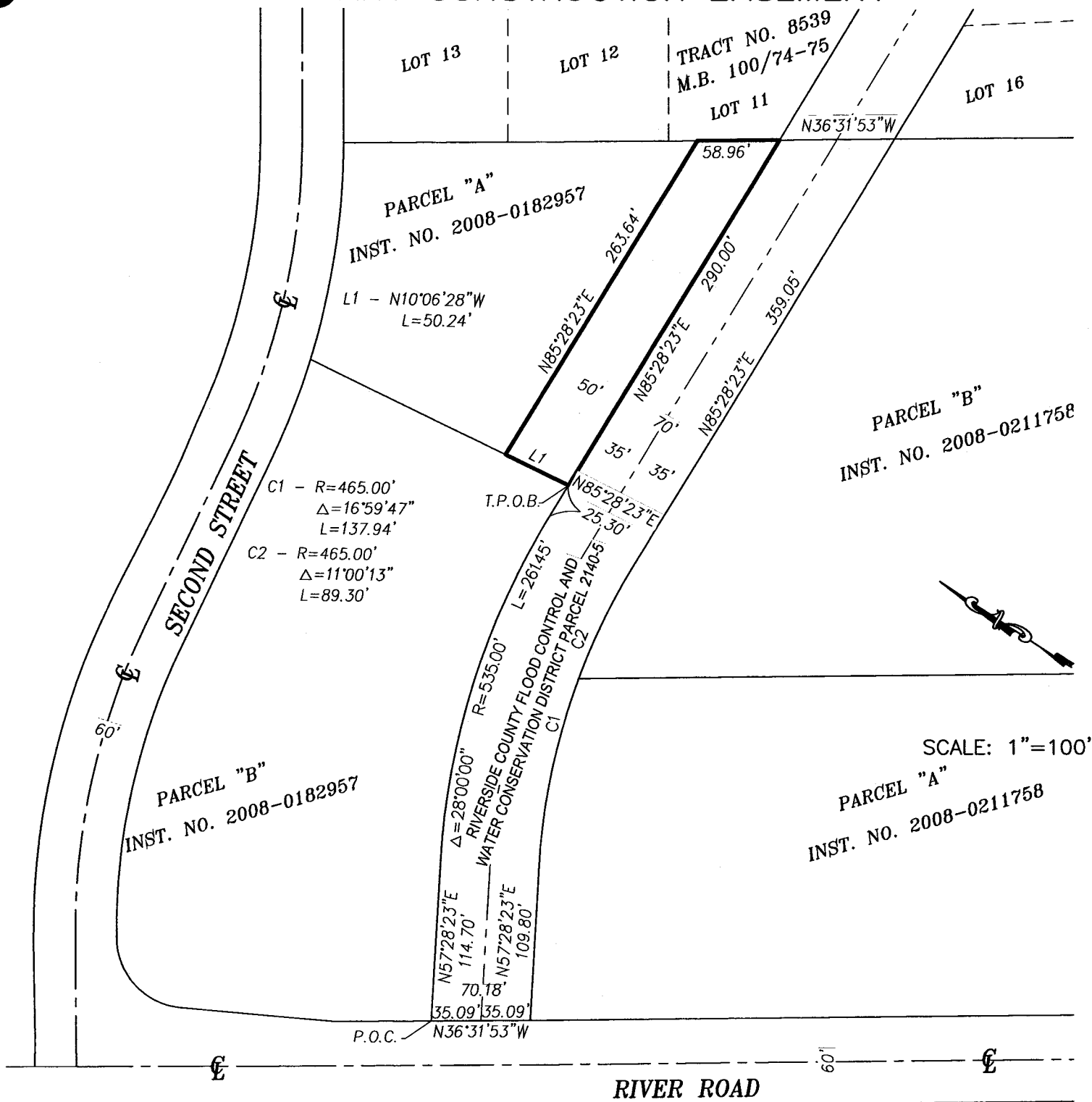
APPENDIX "D"

TEMPORARY CONSTRUCTION EASEMENT



# EXHIBIT "B"

## RIVERSIDE COUNTY FLOOD CONTROL TEMPORARY CONSTRUCTION EASEMENT



SCALE: 1"=100'

THIS DOCUMENT, CONSISTING OF EXHIBITS "A" AND "B" WAS PREPARED BY ME OR UNDER MY DIRECTION ON JULY 24, 2013.

*Daryl Christian*

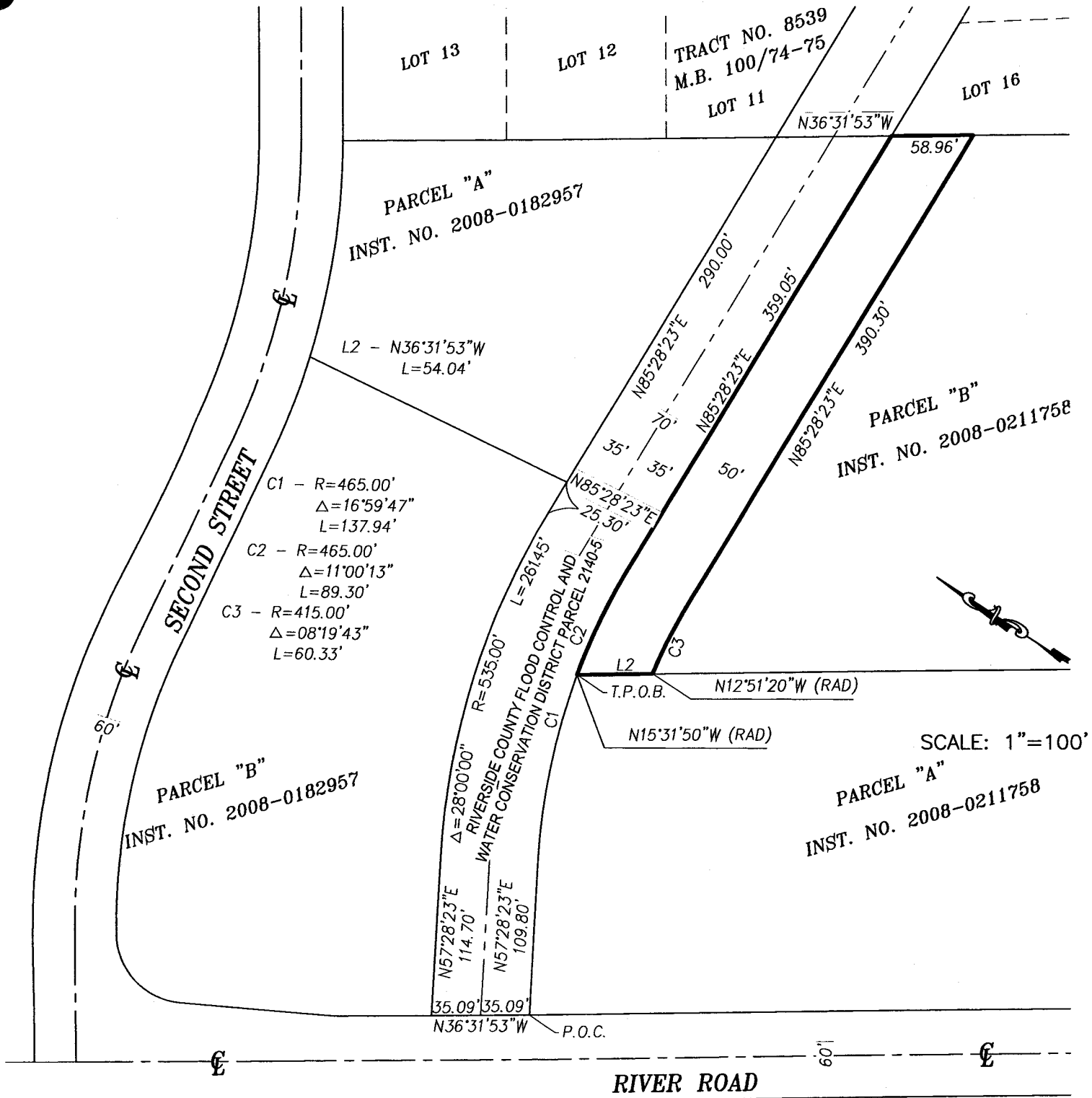
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# EXHIBIT "B"

## RIVERSIDE COUNTY FLOOD CONTROL TEMPORARY CONSTRUCTION EASEMENT



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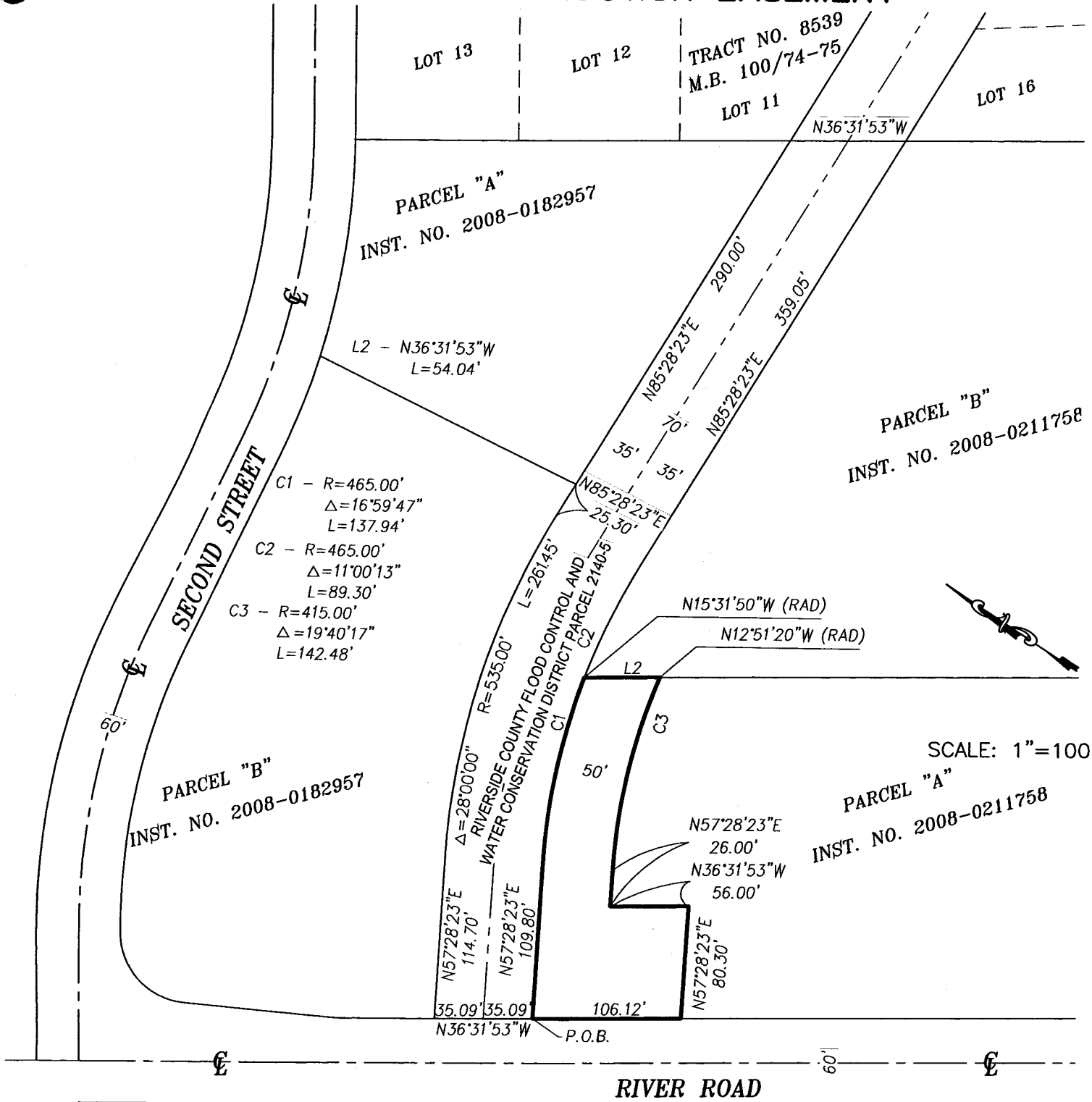
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# EXHIBIT "B"

## RIVERSIDE COUNTY FLOOD CONTROL TEMPORARY CONSTRUCTION EASEMENT



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WAS PREPARED BY ME OR UNDER MY DIRECTION ON  
JULY 24, 2013.

*D.J. Christian*

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**WITH**  
**THE CLERK OF THE BOARD**