

contract in their true intent and meaning, written notice by the Chief Engineer may be served upon him and the Surety on his faithful performance bond demanding a satisfactory compliance with the contract, and with these specifications. If the Contractor and/or his Surety refuses or neglects to comply with such notice within five (5) days after receiving same, or after commencing so to do, fails to continue so to do, or has assigned or sublet the contract without the consent of the District, then the District may exclude him from the premises and take possession thereof, together with all material and equipment thereon, and may complete the work itself, either by force account or by letting the unfinished portion of the work to another Contractor or by a combination of such methods. In any event, the cost of the completion of said work shall be a charge against the Contractor and his Surety and may be deducted from any money due or becoming due from the District, and if the sums due under the contract are insufficient, said Contractor and/or his Surety shall pay to the District within five (5) days after the completion of the work all of such cost in excess of the contract price.

The Surety, in the event that it assumes part of the work, shall take the Contractor's place in this contract in all respects for that part and shall be paid by the District for all work performed by it in accordance with the terms of this contract. If the Surety assumes the entire contract, all monies remaining due the Contractor at the time of his default shall be made payable to the Surety as the work progresses, subject to the terms of the contract.

## SECTION VII - PAYMENT

### 7.01 SCOPE OF PAYMENTS

The Contractor shall accept compensation, as herein provided, in full payment for furnishing all materials, labor, tools, and equipment necessary to the completed work and for performing all work contemplated and embraced under the contract; also for loss or damage arising from the nature of the work, or from the action of the elements, except as hereinbefore provided, or from any unforeseen difficulties which may be encountered during the prosecution of the work until the final acceptance by the Board of Supervisors; and for all risks of description connected with the prosecution of the work, also for all expenses incurred in consequence of the suspension or discontinuance of the work as herein specified; and for completing the work according to the plans and specifications. Neither the payment of any estimate nor of any retained percentage shall relieve the Contractor of any obligation to make good any defective work or material.

7.01A Measurement and Computation of Quantities - All items of the work to be paid for at a contract price per unit of measurement will be measured by the Engineer in accordance with United States Standard Measures. A ton shall mean 2,000 pounds, avoirdupois. Except as otherwise expressly provided in the specifications, the methods of measurement and computation of quantities of such items will be determined by the Engineer, taking into account the price of the item relative to its quantity and the costs of measurement.

The weights of metalwork, pipe, and other metal parts to be paid for by weight will be determined by the Engineer on the basis of handbook weights, scale weights, or manufacturer's catalog weights, or in the absence of any of the foregoing, on the basis of estimated weights; provided, that weights of nonmetallic coatings will be excluded.

7.01B Payment at Contract Prices - The contract price for an item of the work shall include full compensation for all costs of that item, including the costs of any work, materials and

equipment incidental to the item but not specifically shown or described in the drawings and specifications, subject only to such express limitations as may be stated in the specifications defining the item or prescribing payment therefor.

The contract prices shall include full compensation for all costs of any work, materials, and equipment required by the drawings and specifications at the time of contract award, but not covered by a contract price or otherwise expressly made the subject of direct payment.

#### 7.02 PAYMENT AND COMPENSATION FOR ALTERED QUANTITIES

When alterations in plans or quantities of work are ordered and performed, the Contractor shall accept payment in full at the contract unit price for the actual quantities of work done and no allowance will be made for anticipated profits. Increased or decreased work involving supplemental agreements will be paid for as stipulated in such agreements.

#### 7.03 FORCE ACCOUNT PAYMENT

When extra work is to be paid for on a force account basis, compensation will be determined as follows:

7.03A Work Performed by Contractor - The Contractor will be paid for labor, materials, and equipment rental as hereinafter provided, except where agreement has been reached to pay in accordance with Section 7.03B. Only materials incorporated in the work will be paid for.

To the total computed as provided in Sections 7.03A(1), 7.03A(2) and 7.03A(3) will be added the following percentages:

Labor	-	24%
Materials	-	15%
Equipment Rental	-	15%

It is understood labor, materials, and equipment may be furnished by the Contractor or by the subcontractor or by others on behalf of the Contractor.

When extra work paid for on a force account basis is performed by forces other than the Contractor's organization, the Contractor shall reach agreement with such other forces as to the distribution of the payment made by the District for such work and no additional payment therefor will be made by the District.

7.03A(1) Labor - The Contractor will be paid the cost of labor for the workmen used in the actual and direct performance of the work. The cost of labor, whether the employer is the Contractor, subcontractor, or other forces, will be the sum of the following:

7.03A(1a) Actual Wages - The actual wages paid will be as published by the Director of Industrial Relations of the State of California for the region where work is performed and that are in effect at the time of award of the contract. The classification of workmen used shall not be in excess of the industry standard for the region where work is performed. Copies of the published labor rates are on file at the District office.

7.03A(1b) Labor Surcharge - To the actual wages as defined in Section 7.03A(1a), will be added a labor surcharge set forth in the Special Provisions, which labor surcharge shall constitute full compensation for all payments imposed by State and Federal laws and for all other payments made to, or on behalf of, the workmen, other than actual wages as defined in Section 7.03A(1a) and subsistence and travel allowance as specified in Section 7.03A(1c).

7.03A(1c) Subsistence and travel allowance paid to such workmen as required by collective bargaining agreements.

7.03A(2) Materials - The cost of materials incorporated in the work will be the cost to the purchaser, whether Contractor, subcontractor or other forces, from the supplier thereof, except as the following are applicable:

7.03A(2a) If a cash or trade discount by the actual supplier is offered or available to the purchaser, it shall be credited to the District notwithstanding the fact that such discount may not have been taken.

7.03A(2b) If the materials are procured by the purchaser by any method which is not a direct purchase from and a direct billing by the actual supplier to such purchaser, the cost of such materials shall be deemed to be the price paid to the actual supplier as determined by the Engineer. No markup except for actual costs incurred in the handling of such materials will be permitted.

7.03A(2c) If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefor will not exceed the price paid by the purchaser for similar materials furnished from said source on contract items or on the current wholesale price for such materials delivered to the job site whichever price is lower.

7.03A(2d) If the cost of such materials is, in the opinion of the Engineer, excessive, then the cost of such materials shall be deemed to be the lowest current wholesale price at which such materials are available in the quantities concerned delivered to the job site, less any discounts as provided in Section 7.03(2a).

7.03A(2e) If the Contractor does not furnish satisfactory evidence of the cost of such materials from the actual supplier thereof, the cost shall then be determined in accordance with Section 7.03A(2d).

The District reserves the right to furnish such materials as it deems advisable, and the Contractor shall have no claims for costs and profit on such materials.

7.03A(3) Equipment Rates - The Contractor will be paid for the use of equipment at the rental rates listed for such equipment in the Special Provisions, regardless of ownership and any rental or other agreement, if such may exist, for the use of such equipment entered into by the Contractor. If it is deemed necessary by the Engineer to use equipment not listed in the Special Provisions, a suitable rental rate for such equipment will be established by the Engineer. The Contractor may furnish any cost data which might assist the Engineer in the establishment of such rental rate.

The rental rates paid as above provided shall include the cost of fuel, oil, lubrication, supplies, necessary attachments, repairs and maintenance of any kind, depreciation, storage, insurance, and all incidentals.

Operators will be paid for as provided under Section 7.03A(1).

All equipment shall, in the opinion of the Engineer, be in good working condition and suitable for the purpose for which the equipment is to be used.

Unless otherwise specified, manufacturer's ratings and manufacturer approved modifications shall be used to classify equipment for the determination of applicable rental rates. Equipment which has no direct power unit shall be powered by a unit of at least the minimum rating recommended by the manufacturer.

Individual pieces of equipment or tools having a replacement value of \$25.00 or less, whether or not consumed by use, shall be considered to be small tools and no payment will be made therefor.

Rental time will not be allowed while equipment is inoperative due to breakdowns.

In computing the rental time of equipment, less than 30 minutes shall be considered ½ hour.

7.03A(3a) Equipment on the Work - The rental time to be paid for equipment on the work shall be the time the equipment is in operation on the extra work being performed, and in addition, shall include the time required to move the equipment to location of the extra work and return it to the original location or to another location requiring no more time than that required to return it to its original location, except that moving time will not be paid for if the equipment is used at the site of the extra work on other than such extra work. Loading and transporting costs will be allowed, in lieu of moving time, when the equipment is moved by means other than its own power, except that no payment will be made if the equipment is used at the site of the extra work on other than such extra work.

7.03A(3b) Equipment not on the Work - For the use of equipment moved in on the work and used exclusively for extra work paid for on a force account basis, the Contractor will be paid the rental rates listed in the Special Provisions or as agreed to as provided in Section 7.03A(3) and for the cost of transporting the equipment to the location of the work and its return to its original location, all in accordance with the following provisions:

(1) The original location of the equipment to be hauled to the location of the work shall be agreed to by the Engineer in advance.

(2) The District will pay the costs of loading and unloading such equipment.

(3) The cost of transporting equipment on low bed trailers shall not exceed the hourly rates charged by established haulers.



(4) The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.

(5) The rental period shall begin at the time the equipment is unloaded at the site of the extra work, shall include each day that the equipment is at the site of the extra work, excluding Saturdays, Sundays, and legal holidays unless the extra work is performed on such days, and shall terminate at the end of the day on which the Engineer directs the Contractor to discontinue the use of such equipment. The rental time to be paid per day will be in accordance with the following:

<u>Hours Equipment is in Operation</u>	<u>Hours to be Paid</u>
0.....	4
0.5.....	4.25
1.....	4.5
1.5.....	4.75
2.....	5
2.5.....	5.25
3.....	5.5
3.5.....	5.75
4.....	6
4.5.....	6.25
5.....	6.5
5.5.....	6.75
6.....	7
6.5.....	7.25
7.....	7.5
7.5.....	7.75
8.....	8
Over 8.....	hours in operation

When hourly rates are listed, less than 30 minutes of operation shall be considered to be 1/2 hour of operation.

When daily rates are listed, payment for 1/2 day will be made if the equipment is not used. If the equipment is used, payment will be made for one day.

The minimum rental time to be paid for the entire rental period on an hourly basis shall not be less than 8 hours or if on a daily basis shall not be less than one day.

(6) Should the Contractor desire the return of the equipment to a location other than its original location, the District will pay the cost of transportation in accordance with the above provisions, provided such payment shall not exceed the cost of moving the equipment to the work.

(7) Payment for transporting, loading and unloading equipment, as above provided, will not be made if the equipment is used on the work in any other way than upon extra work paid for on a force account basis.

7.03B Work Performed by Special Forces or Other Special Services - When the Engineer and the Contractor, by agreement, determine that a special service or an item of extra work cannot be performed by the forces of the Contractor or those of any of his subcontractors, such service or extra work item may be performed by a specialist. Invoices for such service or item of extra work on the basis of the current market price thereof may be accepted without complete itemization of labor, material, and equipment rental costs when it is impracticable and not in accordance with the established practice of the special service industry to provide such complete itemization. In those instances wherein a Contractor is required to perform extra work necessitating a fabrication or machining process in a fabrication or machine shop facility away from the job site, the charges for that portion of the extra work performed in such facility may, by agreement, be accepted as a specialist billing.

To the specialist invoice price, less a credit to the District for any cash or trade discount offered or available, whether or not such discount may have been taken, will be added 15% in lieu of the percentages provided in Section 7.03A.

7.03C Records - The Contractor shall maintain his records in such a manner as to provide a clear distinction between the direct costs of extra work paid for on a force account basis and the costs of other operations.

The Contractor shall furnish the Engineer report sheets in duplicate of each day's extra work paid for on a force account basis no later than the working day following the performance of said work. The daily report sheets shall itemize the materials used, and shall cover the direct cost of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Section 7.03B. The daily report sheets shall provide names or identifications and classifications of workmen, the hourly rate of pay and hours worked, and also the size, type and identification number of equipment, and hours operated.

Material charges shall be substantiated by valid copies of vendor's invoices. Such invoices shall be submitted with the daily report sheets, or if not available, they shall be submitted with subsequent daily report sheets. Should said vendor's invoices not be submitted within 15 days after acceptance of the work, the District reserves the right to establish the cost of such materials at the lowest current wholesale prices at which said materials are available in the quantities concerned delivered to the location of the work, less any discounts provided in Section 7.03A(2a).

Said daily report sheets shall be signed by the Contractor or his authorized agent.

The Engineer will compare his records with the daily report sheets furnished by the Contractor, make any necessary adjustments, and compile the costs of work paid for on a force account basis on daily extra work report forms furnished by the District. When these daily extra work reports are agreed upon and signed by both parties, they shall become the basis of payment for the work performed, but shall not preclude subsequent adjustment based on a later audit.

The Contractor's cost records pertaining to work paid for on a force account basis shall be open to inspection or audit by representatives of the District, during the life of the contract and for a period of not less than 18 months after the date of acceptance thereof, and the Contractor shall retain such records for that period. Where payment for materials or labor is based on the cost thereof to forces other than the Contractor, the Contractor expressly guarantees that the cost records of such other forces shall be open to inspection and audit by representatives of the District on the same terms and conditions as the cost records of the Contractor. If an audit is to be commenced more than 60 days after the acceptance date of the contract, the Contractor will be given a reasonable notice of the time when such audit is to begin.

7.03D Payment as provided above in Sections 7.03A and 7.03B shall constitute full compensation to the Contractor for performance of work paid for on a force account basis and no additional compensation will be allowed therefor.

#### 7.04 ACCEPTANCE

The work shall be inspected for acceptance by the Engineer promptly upon receipt of notice in writing from the Contractor that the work is ready for such inspection.

The structures will not be finally accepted until the completion of the entire work under the contract.

#### 7.05 DEDUCTIONS FROM PAYMENTS

The Riverside County Flood Control and Water Conservation District, by and through the Board of Supervisors or other appropriate District officer or officers, may at its option and at any time retain out of any amounts due the Contractor sums sufficient to cover any unpaid claims, provided that sworn statements of said claims shall have been filed in the office of the District or in the office of any other District officer or officers having jurisdiction thereover.

#### 7.06 PARTIAL PAYMENTS

On or about the last day of each month, the Engineer shall make an estimate in writing of the total amount of work done by the Contractor to the time of such estimate and the value thereof. The District shall retain 5% of such estimated value of the work done as part security for the fulfillment of the contract by the Contractor. At no time shall the amount retained by the District be less than 5% of the total value of the work completed at the time such payments are made.

After deducting all previous payments and all sums to be kept or retained under the provisions of the contract, the District shall make monthly progress payments to the Contractor. No such estimate or payment shall be required to be made when, in the judgment of the Chief Engineer, the work is not proceeding in accordance with the provisions of the contract.

In accordance with Public Contract Code Section 22300 and other applicable law, the Contractor may substitute securities for any monies withheld to ensure performance under the contract. Such substitution shall be made only upon a separate agreement between the District and the Contractor which contains terms and conditions in compliance with all laws applicable to monies withheld under the contract.

#### 7.07 DELAYED PAYMENTS

All the monies due the Contractor under the contract will be paid by demand on the Treasurer of the District, prepared and approved as required by law, and it is understood that any delay in the preparation, approval and payment of these demands will not constitute a breach of contract on the part of the District.

#### 7.08 FINAL PAYMENT

The Engineer, after the completion of the contract, shall make a final estimate in writing to the Board of Supervisors of the amount of work done thereunder, and the value of such work, and the District shall pay the entire sum so found to be due after deducting therefrom all previous payments and all amounts to be kept and all amounts to be retained under the provisions of the contract. All prior partial estimates and payment shall be subject to correction in the final estimate and payment. The final payment shall not be due and payable until the expiration of 45 days from the date of acceptance of the work by the Board of Supervisors.

It is mutually agreed between the parties to the contract that no certificate given or payments made under the contract, except the final payment, shall be conclusive evidence of the performance of the contract, either wholly or in part against any claim of the party of the first part, and no payment shall be construed to be an acceptance of any defective work or improper materials.

And the Contractor further agrees that the payment of the final amount due under the contract, and the adjustment and payment for any work done in accordance with any alterations of the same, shall release the Riverside County Flood Control and Water Conservation District, the Board of Supervisors, and the Engineer from any and all claims or liability on account of work performed under the contract or any alteration thereof.

#### 7.09 CLAIMS RESOLUTION - CLAIMS UP TO \$375,000

In accordance with Public Contract Code Section 20104 - 20104.8 and other applicable law, public works claims of \$375,000 or less which arise between the Contractor and the District shall be resolved following the statutory procedure.

1. All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before processing of the final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the claimant for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the claimant and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled, or (3) an amount the payment of which is disputed by the District.

(a) Claims under \$50,000. The District shall respond in writing to the claim within 45 days of receipt of the claim, or, the District may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the District may have against the claimant. If additional information is needed thereafter, it shall be requested and provided upon mutual agreement of the District and the claimant. The District's written response shall be submitted 15 days after receiving the additional documentation,

or within the same period of time taken by the claimant to produce the additional information, whichever is greater.

(b) Claims over \$50,000 but less than or equal to \$375,000. The District shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses or claims the District may have against the claimant. If additional information is needed thereafter, it shall be requested and provided pursuant to mutual agreement between the District and the claimant. The District's response shall be submitted within 30 days after receipt of the further documents, or within the same period of time taken by the claimant to produce the additional information or documents, whichever is greater.

2. If the claimant disputes the District's response, or if the District fails to respond within the statutory time period, the claimant may so notify the District within 15 days of the receipt of the District's response or within 15 days of the District's failure to respond within the time prescribed, and demand an informal conference to meet and confer for settlement of the issues in dispute. Upon such demand, the District shall schedule a meet and confer conference within 30 days for settlement of the dispute.

3. If following the meet and confer conference, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Government Code § 900 et seq. and Government Code § 910 et seq. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the claimant submits the written claim until the time the claim is denied as a result of the meet and confer process, including any time utilized for the meet and confer conference.

4. If a civil action is filed to resolve any claim, the provisions of Public Contract Code § 20104.4 shall be followed, providing for nonbinding mediation and judicial arbitration.

5. Location for Filing of Claims, Jurisdiction. Any legal action related to the performance of the work or the terms of the Contract Documents shall be filed only in the Superior Court of the State of California located in Riverside, California.

#### 7.10 CLAIMS RESOLUTION - ALL CLAIMS (PUBLIC CONTRACT CODE SECTION 9204)

This section is intended to help resolve disputes between the parties related to this project. Such disputes shall be brought to the attention of the District at the earliest possible time, so that such disputes may be promptly resolved, if possible, or other appropriate action or investigation may be promptly undertaken. Claims must be filed on or before the date of final payment as required in Public Contract Code Section 20104.2. Public works claims which arise between the Contractor and the District shall be resolved using the following procedure:

A "claim" means a separate demand by the Contractor sent by registered mail or certified mail return receipt requested for one or more of the following: (a) a time extension including, without limitation, for relief from damages or penalties for delay assessed by the District; (b) payment by the District of money or damages arising from work done by or on behalf of the Contractor and payment for which is not otherwise expressly provided or to which the Contractor

is not otherwise entitled; (c) payment of an amount that is disputed by the District. The Contractor shall furnish reasonable documentation to support the claim.

A. Form and Contents of Claim(s)

The Contractor shall furnish reasonable documentation to support the Claim, which shall be sent by registered mail or certified mail with return receipt requested to the District at the address provided herein this Section 7.10. The Contractor's written Claim must include, but not limited to, the following:

- 1) A statement to identify that it is a Claim under this Section 7.10, on a company letterhead, and a request for a decision on the Claim;
- 2) A detailed description or narrative of pertinent events, act, error, omission, unforeseen condition, event or other circumstance giving rise to the Claim;
- 3) Citation to contract provisions;
- 4) Theory of entitlement that provides a detailed justification for any remedy or relief sought by the Claim. This includes, but not limited to: a detailed cost breakdown, invoices, material tickets, staff logged time, summary of quantities, other cost records and total cost calculations;
- 5) Complete pricing of all cost impacts;
- 6) A time impact analysis of all time delays that shows actual time impact on the critical path; and
- 7) Documentation, District letters, notifications, related drawings and photos supporting items (1) through (6).

The Claim must be verified under penalty of perjury by Contractor's project superintendent as to the Claim's accuracy, and shall be priced like a Change Order, and must be updated at regular intervals as to cost and entitlement if a continuing Claim. Routine contract materials, for example, correspondence, RFI, Change Order requests, or payment requests shall not constitute a Claim. Contractor shall bear all costs incurred in the preparation and submission of a Claim.

Claims and support documentation related must be sent to:

Mr. Claudio M. Padres  
Chief of Design and Construction Division  
Riverside County Flood Control  
and Water Conservation District  
1995 Market Street  
Riverside, CA 92501

B. Claims Procedure

- 1) Upon receipt of a Claim and the supporting documentation, the District shall conduct a reasonable review of the Claim and within 45 days, or an extended period as may be set by mutual agreement of the District and Contractor, provide the Contractor with a written statement identifying what portion of the Claim is still disputed and what portion is undisputed.

- 2) Notwithstanding the time period set forth in B.1) above, if the District needs approval from the Board of Supervisors to provide the Contractor with a written statement identifying the disputed portion and the undisputed portion of the Claim, and the Board of Supervisors does not meet within the 45 days or within the mutually agreed to extension of time following receipt of the Claim, the District shall have up to three (3) days following the next duly publicly noticed meeting of the Board of Supervisors after the forty-five (45) day period, or extension, expires to provide Contractor a written statement identifying the disputed portion and the undisputed portion of the Claim.
- 3) Any payment due on the undisputed portion of the Claim under this section shall be processed and made within 60 days after the District issues its written statement. Amounts not paid in a timely manner as required by this Section 7.10 shall bear interest at 7% per annum. If the District fails to issue a written statement, the Claim shall be deemed rejected in its entirety. Failure by the District to respond to a claim from a Contractor within the time periods described in this subdivision or to otherwise meet the time requirements of this section shall result in the claim being deemed rejected in its entirety. A Claim that is denied by reason of the District's failure to have responded to the Claim, or its failure to otherwise meet the time requirements of this section, shall not constitute an adverse finding with regard to the merits of the Claim or the responsibility or qualifications of the Contractor.
- 4) If the Contractor disputes the District's written response, or if the District fails to respond within the time prescribed, the Contractor may demand in writing, sent by registered mail or certified mail return receipt requested, an informal meet and confer conference for settlement of the portion of the Claim in dispute. Upon receipt of the demand, the District shall schedule a meet and confer conference within 30 days.
- 5) Within 10 business days following the conclusion of the meet and confer conference, if the Claim or any portion thereof remains in dispute, the District shall provide the Contractor a written statement identifying the portion of the Claim that remains in dispute and the portion that is undisputed. Any payment due on an undisputed portion shall be processed and made within 60 days after the District issues its written statement. Any disputed portion of the Claim, as identified by the Contractor in writing, shall be submitted to nonbinding mediation, with the District and Contractor sharing the associated costs equally. The District and Contractor shall mutually agree to a mediator within 10 business days after the disputed portion of the Claim has been identified in writing. If the parties cannot agree upon a mediator, each party shall select a mediator and those mediators shall select a qualified neutral third party to mediate with regard to the disputed portion of the Claim. Each party shall bear the fees and costs charged by its respective mediator in connection with the selection of the neutral mediator.

- 6) For purposes of this section, mediation includes any nonbinding process, including but not limited to, neutral evaluation or a dispute review board, in which an independent third party or board assists the parties in dispute with resolution through negotiation or by issuance of an evaluation. Any mediation utilized shall conform to the timeframes in this section. Unless otherwise agreed to by the District and the Contractor in writing, the mediation conducted pursuant to this Section 7.10 shall excuse any further obligation under Section 20104.4 of the Public Contract Code to mediate after litigation has been commenced.
- 7) If mediation is unsuccessful to resolve all issues, the parts of the Claim remaining in dispute shall be subject to applicable procedures outside of this section and the requirements of Public Contract Code § 9204. The Claim resolution procedures in this Section do not preclude the District from requiring arbitration of disputes under private arbitration or the Public Works Contract Arbitration Program, if mediation under this Article does not resolve the parties' dispute.
- 8) Following the procedures set forth in this Section 7.10, including the mediation, if the Claim or any portion of it remains in dispute, the Contractor may file a Claim as provided in Chapter 1 (commencing with § 900) and Chapter 2 (commencing with § 910) of Part 3 of Division 3.6 of Title 1 of the Government Code.
- 9) If the Government Code claim is denied, Contractor may file an action in court. If a civil action is filed to resolve any claim, such action shall be subject to the provisions of Public Contract Code Sections 9204 or 20104.4 and shall be followed, providing for non-binding mediation and judicial arbitration. This Section applies only to claims subject to Public Contract Code Sections 9204 or 20104. If a claim is not subject to Public Contract Code Sections 9204 or 20104, the Contractor's right to file a civil action shall be as otherwise provided by law.

C. Subcontractor Claim(s)

If a subcontractor or a lower tier subcontractor has a Claim, the Contractor may present to the District a Claim on behalf of a subcontractor or lower tier subcontractor. A subcontractor may request in writing, either on his or her own behalf or on behalf of a lower tier subcontractor, that the Contractor present a Claim for work which was performed by the subcontractor or by a lower tier subcontractor on behalf of the subcontractor. The subcontractor requesting that the Claim be presented to the District shall furnish reasonable documentation as set forth in Section 7.10 to support the Claim. Within 45 days of receipt of this written request, the Contractor shall notify the subcontractor in writing as to whether the Contractor presented the Claim to the District, and if the Contractor did not present the Claim, provide the subcontractor with a statement of the reasons for not having done so.

D. Consistency with Public Contract Code Sections 9204 and 20104



If any Claim(s) arising under this Contract is subject to the provisions of Public Contract Code Sections 9204 or 20104 et seq. (Div. 2, Part 3, Chapter 1, Article 1.5), and if provisions of those statutory sections require a procedure or procedural element different from that established in this Contract, then the provisions of those statutory sections shall apply in place of the conflicting procedure or procedural element established herein.

E. Any legal action related to the performance of the work or the terms of the Contract Documents shall be filed only in the Superior Court of the State of California located in Riverside, California.

## SECTION VIII - GENERAL

### 8.01 COOPERATION BETWEEN CONTRACTORS

The Contractor shall be required to cooperate fully with all utility and public agency representatives engaged in construction, relocation, altering or otherwise rearranging any facilities interfering with the progress of the work.

Full compensation for any delay or inconvenience to the Contractor's operation due to such operations as described above shall be considered included in the unit price paid for other items of work and no additional allowance will be made therefor.

### 8.02 INSURANCE - INDEMNIFICATION/HOLD HARMLESS/DEFEND

#### 1. Insurance.

Contractor shall not commence work under this contract until he has obtained the insurance required hereunder and satisfactory proof of said insurance has been submitted to District and has been approved as to form by Riverside County Counsel.

Without limiting or diminishing the Contractor's obligation to indemnify, defend or hold the District harmless, Contractor shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverages during the term of this Contract. In respects to the requirements for the Project and as further described in this section, the District herein refers to the Riverside County Flood Control and Water Conservation District, the County of Riverside, its Agencies, Districts, Special Districts and Departments, and any municipal corporation or governmental entity in which the work is to be accomplished, their respective directors, officers, Board of Supervisors, governing boards or councils, employees, elected and appointed officials, agents, representatives as Additional Insured.

Workers' Compensation - If the Contractor has employees as defined by the State of California, the Contractor shall maintain statutory Workers' Compensation Insurance (Coverage A) as prescribed by the laws of the State of California. Policy shall include Employers' Liability (Coverage B) including Occupational Disease with limits not less than **\$1,000,000** per person per accident. The policy shall be endorsed to waive subrogation in favor of the District and County of Riverside.

Commercial General Liability - Commercial General Liability insurance coverage, including but not limited to, premises liability, contractual liability, products and completed

operations liability, personal and advertising injury, cross liability coverage and employment practices liability, covering claims which may arise from or out of Contractor's performance of its obligations hereunder. Policy shall name the District, all Agencies, Districts, Special Districts, and Departments of the County of Riverside, together with their respective directors, officers, Board of Supervisors, employees, elected or appointed officials, agents or representatives as Additional Insureds. Policy's limit of liability shall not be less than **\$2,000,000** per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this agreement or be no less than two (2) times the occurrence limit.

Vehicle Liability - If Contractor's vehicles or mobile equipment are used in the performance of the obligations under this Agreement, then Contractor shall maintain liability insurance for all owned, non-owned or hired vehicles so used in an amount not less than **\$1,000,000** per occurrence combined single limit. If such insurance contains a general aggregate limit, it shall apply separately to this agreement or be no less than two (2) times the occurrence limit. Policy shall name the District, all Agencies, Districts, Special Districts, and Departments of the County of Riverside, together with their respective directors, officers, Board of Supervisors, employees, elected or appointed officials, agents or representatives as Additional Insureds.

Builder's Risk - Contractor shall obtain, at Contractor's expense, and keep in effect until final acceptance by the District, Builder's Risk Insurance (including earthquake and flood) covering the real and personal property of others in the care, custody, and control of the Contractor. Builder's Risk Insurance shall include theft and damage coverage. The minimum amount of coverage to be carried shall be equal to the full amount of the contract. Contractor shall be financially responsible for any deductible applied to loss. This insurance shall include the District, County of Riverside, the Contractor and its subcontractors as their interests may appear.

Professional Liability - Contractor shall maintain Professional Liability Insurance providing coverage for the Contractor's performance of work included within this Agreement, with a limit of liability of not less than **\$2,000,000** per occurrence and **\$4,000,000** annual aggregate. If Contractor's Professional Liability Insurance is written on a claims made basis rather than an occurrence basis, such insurance shall continue through the term of this Agreement and Contractor shall purchase at his sole expense either 1) an Extended Reporting Endorsement (also, known as Tail Coverage); or 2) Prior Dates Coverage from new insurer with a retroactive date back to the date of, or prior to, the inception of this Agreement; or 3) demonstrate through Certificates of Insurance that Contractor has Maintained continuous coverage with the same or original insurer. Coverage provided under items; 1), 2), or 3) will continue as long as the law allows.

Pollution and Asbestos Liability - If hazardous material is encountered during construction, the Project Manager must be notified immediately, and if any work is done to remove it, any Contractor performing work shall obtain and keep in effect during the term of their contract with Contractor, Pollution Liability Insurance, including Asbestos Liability Insurance, covering the subcontractor's liability for bodily injury, property damage, and environmental damage resulting from "sudden accidental" or "gradual" pollution and related cleanup costs incurred by the subcontractor, all arising out of the work or services (including the transportation risk, when applicable) to be performed under this contract. Combined single limit per occurrence shall not be less than **\$2,000,000**, or the equivalent. Annual aggregate limit shall not be less than **\$4,000,000**.

If the Contractor maintains broader coverage and/or higher limits than the minimums shown above, the District requires and shall be entitled to the broader coverage and/or higher limits maintained by the Contractor. Any available insurance proceeds in excess of the specified minimum limits of insurance and coverage shall be available to the District.

General Insurance Provisions - All lines -

a) Any insurance carrier providing insurance coverage hereunder shall be admitted to the State of California and have an A.M. Best rating of not less than A: VIII (A:8) unless such requirements are waived, in writing, by the District Risk Manager. If the District's Risk Manager waives a requirement for a particular insurer such waiver is only valid for that specific insurer and only for one policy term.

b) The Contractor's insurance carrier(s) must declare its insurance deductibles or self-insured retentions. If such deductibles or self-insured retentions exceed \$500,000 per occurrence such deductibles and/or retentions shall have the prior written consent of the District's Risk Manager before the commencement of operations under this Agreement. Upon notification of deductibles or self-insured retentions unacceptable to the District, and at the election of the District's Risk Manager, Contractor's carriers shall either, 1) reduce or eliminate such deductibles or self-insured retentions as respects this Agreement with the District, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.

c) Contractor shall cause Contractor's insurance carrier(s) to furnish the District with either 1) a properly executed original Certificate(s) of Insurance and certified original copies of Endorsements effecting coverage as required herein, or 2) if requested to do so orally or in writing by the District's Risk Manager, provide original certified copies of policies including all Endorsements and all attachments thereto, showing such insurance is in full force and effect. Further, said Certificate(s) and policies of insurance shall contain the covenant of the insurance carrier(s) that 30 days written notice shall be given to the District prior to any material modification, cancellation, expiration or reduction in coverage of such insurance. In the event of a material modification, cancellation, expiration, or reduction in coverage, this Agreement shall terminate forthwith, unless the District receives, prior to such effective date, another properly executed original Certificate of Insurance and original copies of endorsements or certified original policies, including all endorsements and attachments thereto evidencing coverages set forth herein and the insurance required herein is in full force and effect. Contractor ***shall not commence operations until the District has been furnished original Certificate(s) of Insurance and certified original copies of endorsements or policies of insurance including all endorsements and any and all other attachments as required in this Section. An individual authorized by the insurance carrier to do so on its behalf shall sign the original endorsements for each policy and the Certificate of Insurance.***

d) It is understood and agreed to by the parties hereto and the insurance company(s), that the Certificate(s) of Insurance and policies shall so covenant and shall be construed as primary insurance, and the District's insurance and/or deductibles and/or self-insured retentions or self-insured programs shall not be construed as contributory.

e) The District's Reserved Rights--Insurance. If, during the term of this Agreement or any extension thereof, there is a material change in the scope of services; or, there is a material change in the equipment to be used in the performance of the scope of work (such as the use of aircraft or watercraft), the District reserves the right to adjust the types of insurance required under this Agreement and the monetary limits of liability for the insurance coverages

currently required herein, if, in the District's Risk Manager's reasonable judgment, the amount or type of insurance carried by the Contractor has become inadequate.

f) Contractor shall pass down the insurance obligations contained herein to all tiers of subcontractors working under this Agreement.

g) The insurance requirements contained in this Agreement may be met with a program(s) of self-insurance acceptable to the District.

h) Said insurance must contain an endorsement that District, County of Riverside, and any municipal corporation or governmental entity in which the work is to be accomplished, are named as an additional insured as respects the work covered hereunder. Said insurance must not contain, as respects the work covered hereunder, any exclusions as to bodily injury or death or property damage arising out of blasting, explosion, or underground damage to wire, pipes, conduits, mains, sewers, tank tunnels or any similar property, i.e., the so-called "x c u" exclusions. The insurance certificate evidencing such insurance must affirmatively state that the insurance carrier(s) will give District 30 days written notice prior to cancellation of the insurance or a reduction in coverage; must state that the "x c u" exclusions are waived or do not exist in the policy(s); and that District, County of Riverside, and any municipal corporation in which the work is to be accomplished, are named as an additional insured as respects the work covered hereunder.

The cost of this insurance shall be included in the prices bid for the various items of work and no additional compensation will be made therefor.

## 2. Indemnification - Hold Harmless and Defend.

Contractor shall indemnify and hold harmless the District, County of Riverside, and any municipal corporation or governmental entity in which the work is to be accomplished, together with its Agencies, Districts, Special Districts and Departments, their respective directors, officers, Board of Supervisors, elected and appointed officials, employees, agents and representatives (individually and collectively hereinafter referred to as Indemnitees) from any liability whatsoever, based or asserted upon any acts, omissions or services of Contractor, its officers, employees, subcontractors, agents or representatives arising out of or in any way relating to this Contract, relating to or in any way connected with or arising from the accomplishment of the work, whether or not in furtherance of the work, including but not limited to property damage, bodily injury, or death or any other element of any kind or nature whatsoever arising from the performance of Contractor, its officers, employees, subcontractors, agents or representatives Indemnitors from this Contract. Contractor shall defend, at its sole expense, all costs and fees including, but not limited, to attorney fees, cost of investigation, defense and settlements or awards, the Indemnitees in any claim or action based upon such alleged acts or omissions.

With respect to any action or claim subject to indemnification herein by Contractor, Contractor shall, at their sole cost, have the right to use counsel of their own choice and shall have the right to adjust, settle, or compromise any such action or claim without the prior consent of the District; provided, however, that any such adjustment, settlement or compromise in no manner whatsoever limits or circumscribes Contractor's indemnification to Indemnitees as set forth herein.

Contractor's obligation hereunder shall be satisfied when Contractor has provided to District the appropriate form of dismissal relieving the Indemnitees from any liability for the action or claim involved.

The specified insurance limits required in this Agreement shall in no way limit or circumscribe Contractor's obligations to indemnify and hold harmless the Indemnitees herein from third party claims.

In the event there is conflict between this clause and California Civil Code Section 2782, this clause shall be interpreted to comply with Civil Code 2782. Such interpretation shall not relieve the Contractor from indemnifying the Indemnitees to the fullest extent allowed by law.

3. Obligations.

The obligations assumed by Contractor cover all obligations set forth in this Subsection and elsewhere in the Contract Documents, such as Subsections 5.01, 5.02, 5.05, 5.06, 5.08, 5.09, 5.10, 10.01, and 10.02.

8.03 PUBLIC UTILITIES

The locations of all pipelines, power lines, communication lines and other utility components known to District to exist within the limits of the work, are indicated on the drawings and may be the subject of a specific Special Provision(s). Size, location and characteristics of such utilities is based upon information made available to District - primarily from the owner of the utility in question. The exactness of such information is not guaranteed but may be assumed to have been accomplished with reasonable accuracy.

In addition to the drawings and any such provision regarding utilities, Contractor is under a duty to take into account the location of service laterals or other appurtenances which can be inferred from the presence of facilities such as buildings, meters and junction boxes in or about the limits of the work.

Unless otherwise directed by the Contract Documents, all existing utilities - where shown or described or not - shall be left in place and Contractor must conduct its operations so that such utilities are protected from damage at all times during the course of the work and the work must be accomplished so as to give such utilities proper protection and support upon completion of the work by Contractor.

If during the course of the work, Contractor discovers underground utility components not indicated in the drawings, the Special Provisions or elsewhere in the Contract Documents, Contractor must immediately notify, in writing, the Engineer and the utility company (public or private) involved, stating with exactness the condition found.

When Contractor encounters a utility not shown or described in the Contract Documents, Contractor shall cease all work which would disturb such utility and its support until given specific instructions as to how to proceed regarding such utility by Engineer. All work done by Contractor to protect existing utilities shown or described in the Contract Documents, or which can be reasonably inferred from the presence of other visible facilities, is at Contractor's expense, the cost of which is deemed included in Contractor's Proposal to do the work.

Contractor's cost of locating, repairing damage not due to the failure of Contractor to exercise reasonable care, and removing or relocating utility components and facilities not indicated in the drawings, specifications or elsewhere in the Contract Documents with reasonable accuracy,

shall be paid Contractor as Extra Work as provided in Subsection 2.07 and Subsection 7.03 of these General Provisions. Compensation for idle time of equipment shall be paid as provided in Section 8-1.07C, "Payment Adjustments", of the State Standard Specifications. No surcharge rates for equipment will be applied for idled equipment.

District may direct the Contractor to do such repair or relocation work as required. When such repair or relocation work is not elsewhere provided for in these Contract Documents, or reasonably inferred therefrom, a requirement of District that Contractor perform such work shall be compensated for as Extra Work pursuant to Subsections 2.07 and 7.03 of these General Provisions.

Contractor shall not be assessed liquidated damages for delay in completion of the project, if such delay is caused by failure of District, or the owner of the utility in question, to provide for removal or relocation of the utility involved.

#### 8.04 PROTECTION OF EXISTING STREET FACILITIES

The Contractor shall be responsible for the protection of existing signs, fences, concrete curbs, gutters and other facilities which may be encountered. The replacement or repair of any facilities which the District deems necessary as a result of the Contractor's operations shall be done by the Contractor at his own expense and to the satisfaction of the Engineer.

Excavation within the street right of way shall be conducted in a manner to cause the least interruption to traffic. Where traffic must cross open trenches, the Contractor shall provide suitable bridges at street intersections and driveways. Hydrants under pressure, valve pipe covers, valve boxes, curb stop boxes, fire or police call boxes, or other utility controls shall be left unobstructed and accessible during construction.

#### 8.05 DIVERSION AND CONTROL OF WATER

Unless otherwise provided in the Proposal, no separate payment will be made for diversion and control of surface or groundwater. All costs incidental to maintaining dry working areas shall be included in the unit prices paid for other items of work in the schedule.

#### 8.06 DUST ABATEMENT

During the performance of all work included in the contract, the Contractor shall take the necessary precautions to save the District free and harmless from any loss or damage resulting from his operations that raise or produce dust in such amounts that will be objectionable, and/or cause damage to adjacent property or property owners.

The Contractor will be required to have a positive and continuous method of dust control which is satisfactory to the Engineer. 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 of the work included in the contract. All costs incidental to dust control shall be included in the unit prices paid for other items of work in the schedule.

8.07 PROJECT SIGNS

The Contractor shall erect project signs at the locations designated by the Engineer.

No separate payment will be made for erecting the project signs and all costs in connection therewith will be considered a subsidiary obligation of the Contractor.

8.08 EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK

The bidder shall examine carefully the site of the work contemplated, the plans and specifications, and the proposal and contract forms therefor. The submission of a bid shall be conclusive evidence that the bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of work to be performed, the quantities of materials to be furnished, and as to the requirements of the proposal, plans, specifications, and the contract.

Where the District has made investigations of subsurface conditions in areas where work is to be performed under the contract, or in other areas, some of which may constitute possible local material sources, such investigations are made only for the purpose of study and design. Where such investigations have been made, bidders or Contractors may, upon request, inspect the records of the District as to such investigations subject to and upon the conditions hereinafter set forth. Such inspection of records may be made at the office of the District.

The records of such investigations are not a part of the contract and are shown solely for the convenience of the bidder or Contractor. It is expressly understood and agreed that the District assumes no responsibility whatsoever in respect to the sufficiency or accuracy of the investigations thus made, the records thereof, or of the interpretations set forth therein or made by the District in its use thereof and there is no warranty or guarantee, either expressed or implied, that the conditions indicated by such investigations or records thereof are representative of those existing throughout such areas, or any part thereof, or that unlooked-for developments may not occur, or that materials other than, or in proportions different from those indicated, may not be encountered.

When a log of test borings showing a record of the data obtained by the District's investigation or subsurface conditions is included with the contract plans, it is expressly understood and agreed that said log of test borings does not constitute a part of the contract, represents only the opinion of the District as to the character of the materials encountered by it in its test borings, is included in the plans only for the convenience of bidders and its use is subject to all of the conditions and limitations set forth in this Section 8.08.

No information derived from such inspection of records of investigations or compilation thereof made by the District or from the Engineer, or his assistants, will in any way relieve the bidder or Contractor from any risk or from properly fulfilling the terms of the contract.

## SECTION IX - WATERING

### 9.01 DESCRIPTION

This work shall consist of developing a water supply for all water required for the work. The application of the water shall be under the control of the Engineer at all times and shall be applied in the amounts and at the locations approved by the Engineer.

At least one mobile unit of at least 1,000-gallon capacity for applying water shall be available on the project at all times.

Water for compacting embankment material and for laying dust shall be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses with nozzles that will ensure a uniform application of water.

No separate payment or additional allowances will be made for this work and all costs in connection therewith will be considered as included in other items in the schedule.

## SECTION X - PUBLIC CONVENIENCE, TRAFFIC CONTROL AND DETOURS

### 10.01 GENERAL

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to the public and he shall have under construction no greater length or amount of work than he can prosecute properly with due regard to the rights of the public.

Unless otherwise provided in the Special Provisions, all public traffic shall be permitted to pass through the work with as little inconvenience and delay as possible.

Spillage resulting from hauling operations along or across any public traveled way shall be removed immediately at the Contractor's expense.

Construction operations shall be conducted in such a manner as to cause as little inconvenience as possible to abutting property owners.

Convenient access to driveways, houses and buildings along the line of work shall be maintained and temporary approaches to crossings or intersecting highways shall be provided and kept in good condition.

### 10.02 SIGNS

It shall be the responsibility of the Contractor to provide and maintain all lights, barricades and signs, both on and off the site of work, as required by the Engineer, and all such devices shall be of a type approved by him.

If, in any case, the Engineer finds it necessary to replace, add to or erect said barricades, signs, or lights, when the Contractor fails to do so when informed, the Contractor shall be billed for all costs thereof including a daily rental fee for signs.



No separate payment, unless otherwise provided for under the Special Provisions, will be made for traffic control and detour signing and all costs incidental to these items shall be included in the unit prices paid for other items of work.

10.03 MATERIALS STORAGE

Storing or stockpiling of excavated material, imported backfill material or construction materials on any street or highway will not be permitted except as approved in writing by the Engineer.

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SPECIAL PROVISIONS  
AND  
DETAILED SPECIFICATIONS

## SPECIAL PROVISIONS

### SECTION 1 - GENERAL

1.1 Drawings and Specifications - These documents are for the construction of **South Norco Channel, Stage 6, Norco MDP Line S-1, Stage 1, and Norco MDP Line S-5, Stage 1**, 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 "Greenbook 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 "Caltrans Specifications" are used in these Special Provisions or Detailed Specifications they shall mean the Standard Specifications of the State of California, Department of Transportation, current edition. Whenever the words "Caltrans Standards" are used they shall mean the Standard Plans of the State of California, Department of Transportation, 2010 edition, unless otherwise noted.

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.

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.

1.2 Submittals to District - Submittals shall be sent in the form of email or postal carrier to the attention of the Engineer. The Contractor shall allow the Engineer ten (10) working days from the time of receipt of the submittal (mailing time is not included) to review and respond in writing. The Contractor shall submit and obtain approvals for all required submittals identified within these specifications prior to the pre-construction meeting.

### 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

### THREE HUNDRED FIFTY (350) 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.

4.2 Cooperation with Utilities Relocated by Others or Protected in Place - Some utilities will require relocation by others prior to or during construction or be protected in place as shown on the drawings and as specified in these specifications and Special Provisions.

Supplement to Section 8.01 of the General Provisions. The Contractor shall coordinate and cooperate with the various utilities or their contractors to ensure the work proceeds in an orderly manner.

The Contractor shall stage his work as required to accommodate the following utility construction or relocations or to protect them in place:

- (a) Ramboll on behalf of Arrow Electronics - There are several active and abandoned vapor probe, monitoring, and injection wells along this project. These facilities are operated and maintained by Ramboll on behalf of Arrow Electronics (formerly Wyle Laboratories) and are regulated by the California Department of Toxic Substances Control. The Contractor will be responsible for any damage done to these facilities by the Contractor.

The following facilities along Third Street (Norco MDP Line S-1) will require special attention by the Contractor:

- An array of monitoring and injection wells cross the storm drain alignment at the intersection of Third Street and Hillside Lane (approximately Station 19+70 of Norco MDP Line S-1). These wells are required to be protected in place by the Contractor. **A representative from Ramboll must be present during any work in this location.**
- Pavement work and ribbon gutter construction near the three monitoring wells/vapor probes on Sheets 30, 42, and 63 of the drawings will require the concrete slabs surrounding these facilities to be broken up. Additionally, the well lids for these facilities will need to be adjusted to finished grade by Ramboll. **A representative from Ramboll must be present during any work affecting these facilities.**

**The Contractor shall notify Ramboll in writing at least one (1) month prior to construction reaching any of their facilities.**

Contact person: Safaa Dergham  
Ramboll  
sdergham@ramboll.com  
18100 Von Karman Avenue, Suite 600  
Irvine, CA 92612  
949.798.3610

- (b) City of Norco - The following waterlines and laterals will be isolated by the City of Norco during construction, and the abandoned/isolated waterline will be removed by the Contractor:

- One (1) 2" water lateral at Station 22+00 (South Norco Channel) on Sheet 6
- One (1) 6" waterline at Station 49+39 (South Norco Channel) on Sheet 13

The Contractor shall notify the City of Norco in writing at least 14 calendar days prior to construction reaching Norco's facilities. **Contractor shall coordinate with the City and remove the interfering portions after confirming with the City that the facilities have been isolated and/or abandoned.**

Contact person: Sam Nelson  
snelson@ci.norco.ca.us  
City of Norco  
2870 Clark Avenue  
Norco, CA 92860  
951.270.5677

(c) Southern California Gas Company (SoCal Gas) - The following gas lines will be relocated by SoCal Gas:

- One (1) 4" gas line at Station 29+30 (South Norco Channel) on Sheet 8
- One (1) 2" gas line at Station 42+30 (South Norco Channel) on Sheet 11
- One (1) 3" gas line at Station 81+50 to Station 81+90 (Lateral S-5) on Sheet 22
- One (1) 4" gas line at Station 11+25 (Line S-9) on Sheet 23
- One (1) 3/4" gas service lateral at Station 11+70 (Line S-1) on Sheet 24
- One (1) 2" gas line at Station 12+40 (Line S-1) on Sheet 25
- One (1) 3/4" gas service lateral at Station 12+80 (Line S-1) on Sheet 25
- One (1) 2" or 3" gas line at Station 10+60 to Station 11+35 (Lateral S-1G) on Sheet 31
- One (1) 3" gas line at Station 10+40 to Station 11+40 (Lateral S-5C) on Sheet 32 and (Lateral S-5-C-1) on Sheet 34

The Contractor shall notify SoCal Gas in writing at least one (1) month prior to construction reaching SoCal Gas facilities.

Contact person: David Moreno  
DMoreno2@SempraUtilities.com  
Southern California Gas Company  
1981 W. Lugonia Avenue, SC8031  
Redlands, CA 92374  
909.335.7850

(d) Southern California Edison (SCE) - The following power pole/electrical lines will be relocated by SCE:

- One (1) pole 1822144E at Station 28+80 (South Norco Channel) on Sheet 8
- One (1) pole 1040549H at Station 12+45 (Line S-1) on Sheet 25

The Contractor shall notify SCE in writing at least one (1) month prior to construction reaching SCE's facilities.

Contact person: Sang (Sam) Kim  
Sang.B.Kim@sce.com  
Southern California Edison  
1351 E. Francis Street  
Ontario, CA 91761  
909.930.8425

- (e) Charter Communications - The following cable lines will be relocated by Charter Communications:

- One (1) buried cable line at Station 28+80 (South Norco Channel) on Sheet 8
- One (1) overhead cable line at Station 12+45 (Line S-1) on Sheet 25

The Contractor shall notify Charter Communications in writing at least one (1) month prior to construction reaching Charter facilities.

Contact person: Rick Keyner  
Charter Communications  
7337 Central Avenue  
Riverside, CA 92504

- (f) AT&T - There are no known conflicts with AT&T lines:

The Contractor shall notify AT&T in writing at least one (1) month prior to construction reaching AT&T's facilities.

Contact person: Lee Corby  
LC1429@att.com  
AT&T West Engineering  
3073 Adams Street, 2<sup>nd</sup> Floor  
Riverside, CA 92504  
951.359.2255

- (g) Crown Castle Fiber - There are no known conflicts with Crown Castle Fiber's fiber optic lines:

Contact person: Ed Mulcahy  
Ed.Mulcahy@crowncastle.com  
Crown Castle Fiber  
226 North Lincoln Avenue  
Corona, CA 92882  
951.264.9953

- (h) Western Municipal Water District - The Contractor shall contact Western Municipal Water District prior to any work affecting its facilities:

Contact person: Sergio Felix  
sfelix@wmwd.com  
Western Municipal Water District  
14205 Meridian Parkway  
Riverside, CA 92518  
951.571.7204

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

Should any utility relocation 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 idled equipment or additional payment over and above the agreed upon contract unit prices.

#### SECTION 5 - PROJECT SITE MAINTENANCE

Through all phases of construction, the Contractor shall comply with the provisions of Section 3-12 of the Greenbook 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's Safety and Operations Manual (SOM) - Confined Space Procedures, 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 the number of working days specified in Section 1.2 of these Special Provisions 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. **Note that work within Hillside Lane (private road) will be restricted from 7:00 a.m. to 3:00 p.m.**

6.5 Business License - The Contractor is required to obtain a business license from the City of Norco for work within the city limits. The City of Norco will require the Contractor to pay a fee for the business license. A copy of the business license shall be provided to the Engineer prior to commencement of work.

6.6 Encroachment Permits - The Contractor is required to obtain an encroachment permit from the City of Norco for work within City right of way. In addition, the Contractor shall obtain a separate road closure permit from the City of Norco for the pre-approved planned road closures as shown in the traffic control drawings. The City of Norco will not require the Contractor to pay a fee for the encroachment permit nor the road closure permit. A copy of the encroachment permit and the road closure permit shall be provided to the Engineer prior to commencement of work.

If the Contractor desires to implement any road closures beyond the pre-approved closures shown in the contract drawings, the Contractor shall be solely responsible for obtaining the additional road closure permit. As a part of the road closure permit application, the Contractor must submit a letter of justification and traffic control plans prepared and signed by a registered Traffic Engineer or a registered Civil Engineer for the unplanned road closure(s).

6.7 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.

6.8 Survey Crew - The Contractor shall notify the Engineer in writing at least 48 hours prior to new construction staking and shall provide safe and unobstructed access to the staking area within this period. Should the staking area be inadequately prepared, unsafe, or obstructed when the District's survey crew arrives onsite to perform the new construction staking, the Contractor shall be subject to delay charges as defined below.

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.

The Contractor shall carefully preserve benchmarks, reference points, and stakes. In case of willful or careless destruction, the Contractor shall be charged with the resulting expense and shall be responsible for any mistakes that may be caused by their unnecessary loss or disturbance.

If the District's Survey Crew incurs delays or survey restaking is required as a result of the Contractor's operations, the Contractor shall be charged at a rate of \$250 per hour, with a minimum

charge of two (2) hours for each restaking request. Payment shall be deducted from the monthly progress payment.

6.9 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.

6.10 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, electrical service, and a private portable toilet for the Inspector. 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.

6.11 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 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 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. 0.0025W + 1 inch
Variation from specified height of lining		0.005 times specified height H plus 1 inch. 0.005H + 1 inch
Variation in surfaces (gradual)	Invert Sideslopes	¼ inch in 10 feet 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 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 Backfilled, in 10 feet	½ inch 1 inch
Variation in cross-sectional dimensions		Minus ¼ inch Plus ½ inch
Variation in surfaces (gradual)	Invert Soffits, Walls, Sideslopes	¼ inch in 10 feet 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

Elements not meeting these requirements shall be removed and replaced as directed by the Engineer.

6.12 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. Related 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 any Regulatory Permits related to stockpiling, grading, or disposal of material outside of the project limits shall be borne by the Contractor.

6.13 Sewer Line Inspection - Prior to the commencement of construction, the Contractor is required to video record all sewer mains (8" diameter and larger) within the project limits. Additionally, the Contractor shall video record the sewer mains after the backfilling of the storm drain has been completed. Copies of the videotapes shall be provided to the Engineer. All costs associated with this requirement shall be included in the contract price bid for Clearing and Miscellaneous Work. The Contractor is required to replace and/or repair at his own expense, any sewers damaged or misaligned as a result of his construction activities.

6.14 Pipe Order Notification - The Contractor shall submit to the District the invoice from the pipe company stating, (1) pipe order date, (2) pipe quantity, and (3) estimated date of pipe delivery within five (5) calendar days of the award of the contract.

6.15 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.

6.16 Liability Insurance - The Contractor's attention is directed to Section 8.02, Indemnification/Hold Harmless/Defend, of the General Provisions. The City of Norco, Western Municipal Water District, and Corona-Norco Unified School District shall also be named as additional insureds with the liability insurance coverage required to be maintained by the Contractor.

6.17 1602 Permit Compliance - Pursuant to Section 1600 et seq. of the California Department of Fish and Game Code, the California Department of Fish and Wildlife (CDFW) issued a Streambed Alteration Agreement (SAA) to the District dated July 15, 2016. A copy of the 1602 SAA (No. 1600-2015-0247-R6, Revision 3) will be provided to the Contractor prior to start of construction. The Contractor shall comply with all permit conditions, including but not limited to the following:

1. A copy of the 1602 SAA and the project's CEQA documents shall be kept onsite at all times.
2. Contractor shall provide copies of the SAA to all persons who will be working on the project at the project site on behalf of District, including but not limited to contractors, subcontractors, inspectors, and monitors.
3. CDFW personnel shall be allowed to enter the site at any time during construction.
4. Please be advised that Sections 3503, 3503.5, and 3513 of the Fish and Game Code (FGC) stipulate the following: Section 3503 states that it is unlawful to take, possess, or needlessly destroy the nest or eggs of any bird, except as otherwise provided by FGC or any regulation made pursuant thereto; Section 3503.5 states

that it is unlawful to take, possess, or destroy any birds in the orders Falconiformes or Strigiformes (birds of prey) to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by FGC or any regulation adopted pursuant thereto; and Section 3513 states that it is unlawful to take or possess any migratory nongame bird except as provided by the rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Bird Treaty Act (MBTA).

5. Coordinate with the District Engineer for District to conduct pre-construction surveys for nesting birds prior to project activities and/or vegetation removal. See Section 6.23 Nesting Bird Pre-Construction Survey (except Burrowing Owl) for further details.
6. Coordinate with the District Engineer for District to conduct pre-construction Burrowing Owl (*Athene cunicularia*) surveys no more than 14 days prior to ground disturbance. If burrowing owls are present at or near the site, measures identified in Section 6.22 Burrowing Owl Avoidance Measures shall apply.
7. At the end of each work day, a ramp shall be placed at each end of any open trenches and pits that have vertical and very steep sides which are deep enough to present a hazard to wildlife, to allow any animals that may have become entrapped in the trench to climb out overnight. The ramp may be constructed of either dirt fill or wood planking or other suitable material that is placed at an angle no greater than 30 degrees. Alternatively, at the end of each work day, after inspecting that no wildlife is trapped inside, a tight cover (e.g., plate) may be secured over the trench or pit.
8. Project activities shall be conducted in a manner that prevents the introduction, transfer, and spread of invasive species, including plants, animals, and microbes from one project site and/or waterbody to another.
9. Contractor shall actively implement Best Management Practices (BMPs) to prevent erosion and the discharge of sediment and pollutants into streams during project activities. BMPs shall be monitored and repaired if necessary to ensure maximum erosion, sediment, and pollution control. Contractor shall prohibit the use of erosion control materials potentially harmful to fish and wildlife species, such as mono-filament netting (erosion control matting) or similar material, within and adjacent to CDFW jurisdictional areas. All fiber rolls, straw wattles, and/or hay bales utilized within and adjacent to the project site shall be free of non-native plant materials. Fiber rolls or erosion control mesh shall be made of loose-weave mesh that is not fused at the intersections of the weave, such as jute or coconut (coir) fiber or other products without welded weaves. Non-welded weaves reduce entanglement risks to wildlife by allowing animals to push through the weave, which expands when spread.
10. Contractor shall comply with all litter and pollution laws. All contractors, subcontractors, and employees shall also obey these laws, and it shall be the responsibility of Contractor to ensure compliance.
  - a. Contractor shall not allow water containing mud, silt, or other pollutants from grading, aggregate washing, or other activities to enter a lake,

- streambed, or flowing stream or be placed in locations that may be subjected to high storm flows.
- b. Spoil sites shall not be located within a lake, streambed, or flowing stream or locations that may be subjected to high storm flows, where spoil shall be washed back into a lake, streambed, or flowing stream where it will impact streambed habitat and aquatic or riparian vegetation.
  - c. Raw cement/concrete or washings thereof, asphalt, paint, or other coating material, oil or other petroleum products, or any other substances which could be hazardous to fish and wildlife resources resulting from project related activities shall be prevented from contaminating the soil and/or entering the waters of the State. These materials, placed within or where they may enter a lake, streambed, or flowing stream by Contractor or any party working under contract or with the permission of Contractor, shall be removed immediately.
  - d. No broken concrete, cement, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or washings thereof, oil or petroleum products, or other organic or earthen material from any construction or associated activity of whatever nature shall be allowed to enter into or be placed where it may be washed by rainfall or runoff into waters of the State. When operations are completed, any excess materials or debris shall be removed from the work area. No rubbish shall be deposited within 150 feet of the high water mark of any lake, streambed, or flowing stream.
  - e. No equipment maintenance shall be done within or near any lake, streambed, or flowing stream where petroleum products or other pollutants from the equipment may enter these areas under any flow.

6.18 Regional Board Order for Waste Discharge Requirements - The Santa Ana Regional Water Quality Control Board adopted Regional Board Order No. R8-2016-0068 (Order) with Waste Discharge Requirements on December 16, 2016. The Order requires the use of water quality BMPs during construction. This Order will serve as a Clean Water Act Section 401 Water Quality Standards Certification in the event one is required by any federal agency. The Contractor shall comply with all requirements in the Order, including but not limited to the following:

Discharge Specifications:

1. No activities associated with the Project shall cause or threaten to cause a nuisance or pollution.
2. The discharge of any substance in concentrations toxic to animal or plant life is prohibited.
3. The groundwater in the vicinity of the Project shall not be degraded as a result of the Project activities or placement of fill for the Project.
4. Appropriate BMPs will be implemented to reduce construction-related impacts to waters of the State per the requirements of Regional Board Order No. R8-2010-033 (NPDES Permit No. CAS618033), commonly known as the Riverside County Municipal Storm Water Permit, and subsequent iterations thereof. Order No. R8-2010-033 requires that the discharger substantially comply with the requirements

of State Water Resources Control Board General NPDES Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order Number 2012-0006-DWQ.

5. The discharge of fill materials shall be limited to the placement of native fill and inert materials as defined in Section 20230, Division 2, Title 27 of the California Code of Regulations. The discharge of fill material other than native soil shall be only with the prior approval of the Executive Officer.
6. The direct discharge of wastes, including rubbish, refuse, bark, sawdust, or other solid or liquid wastes, into channels, surface waters, or any place where they would contact or be eventually transported to surface waters, including floodplains, is prohibited.
7. The discharge of oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.
8. The discharge of silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity, or discoloration in surface waters is prohibited.
9. Discharges to surface waters of wastes or pollutants that are not otherwise regulated by a separate National Pollutant Elimination System (NPDES) permit is prohibited.
10. During the grading and filling operation, there shall be no onsite fueling, lubrication, changing of oil or other equipment fluids and their filters, or any other maintenance or storage of construction equipment within or next to drainage areas or other surface runoff conveyances.
11. Maintain a copy of this Order at the site so that it is available to site operating personnel at all times. Key operating personnel shall be familiar with its content.
12. Remove from the construction site any waste or fill material found to contain substances that may have a deleterious effect on water quality, and dispose of unacceptable wastes in a manner acceptable to the Executive Officer.
13. Take all reasonable steps to minimize or prevent any discharge that has a reasonable likelihood of adversely affecting human health or the environment.
14. The Regional Board and other representatives shall be allowed:
  - a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept;
  - b. Access to copy records that are kept under the requirements of this Order;
  - c. To inspect any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under this Order; and
  - d. To photograph, sample, and monitor for the purpose of assuring compliance with this Order.

6.19 Coordination with Paleontological/Archaeological Monitoring - The District's professional paleontologist and a tribal monitor will be monitoring the Contractor's initial grading and excavation activities. The Contractor shall coordinate and cooperate with the District's professional paleontologist and the tribal monitor in monitoring the initial grading and excavation.



If findings are uncovered during excavation activity, the Contractor's attention is directed to Section 6.20 Accidental Discovery.

**6.20 Accidental Discovery** - In the event that any human remains, hazardous materials, historical, tribal, 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.

**6.21 Burrowing Owl Pre-Construction Survey** - In compliance with Western Riverside Multiple Species Habitat Conservation Plan, the District must conduct a presence/absence survey for Burrowing Owl (*Athene cunicularia*) no more than 14 days prior to construction/disturbance. The Contractor shall not commence any work, including equipment staging, clearing, grubbing, etc., until the District determines that Burrowing Owl is absent from the project site and the buffer area (up to 500 feet), or that an avoidance/relocation plan has been initiated should Burrowing Owl be detected. If the Contractor does not commence construction within 14 days of the presence/absence survey or if construction activities are halted for more than 14 days, the Contractor must notify the Engineer that another Burrowing Owl survey is needed.

**6.22 Burrowing Owl Avoidance Measures** - If any Burrowing Owl (*Athene cunicularia*) is found within the project site or within the buffer area (up to 500 feet), the District will coordinate with its biologist to establish an appropriate avoidance buffer of up to 500 feet around occupied burrows or nests. Encroachment will not be allowed within the established avoidance buffer until it has been determined by the biologist that the burrow/nest is no longer active, or until the biologist relocates the owls outside of the nesting season, or is otherwise safe to do so. **The Contractor shall not resume construction in the affected area without Engineer's approval.**

Should the presence of 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.

6.23 Nesting Bird Pre-Construction Survey (except Burrowing Owl) - The District or its biologist will conduct a pre-construction nesting bird survey(s). If active nests are identified, the District will coordinate with its biologist to establish an appropriate buffer of up to 500 feet around the active nest, or other avoidance measures as deemed necessary by the District biologist. Encroachment will not be allowed within the established buffer until it has been determined by the biologist that the nest is no longer active or it is safe to resume work. **The Contractor shall not resume construction in the affected area without Engineer's approval.** This section does not apply to the Burrowing Owl.

Should the presence of 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 prices.

6.24 Hillside Lane Construction - Hillside Lane is a private street. The Contractor shall stage construction to complete all work on Hillside Lane with minimal disturbance to the affected property owners. "All work" includes the removal of trees, gates, fencing and bollards, stump grinding, pipe installation, structure construction, street improvements, and replacement of fencing on Hillside Lane. The paving of Hillside Lane is to immediately follow the storm drain construction. All work shall be completed within **thirty (30) days**. Significantly restricted access to each residence shall be limited to two (2) days, one for storm drain installation and another for paving. On "paving day" residents must be allowed to park within the TCE on the south side of Hillside Lane.

The working hours for Hillside Lane construction are reduced to 7:00 a.m. through 3:00 p.m. The Contractor shall be aware of the multi-day trash pickup schedule throughout the week and minimize impacts or hardship to the residences along Hillside Lane. Monday is regular trash pickup day; every other Tuesday is the large container pickup day. The Contractor shall verify this information and accommodate access to trash service vehicles.

In addition the following safety precautions are required:

1. Emergency access to residences must be accommodated at all times.
2. K-rail must be placed along the trench during the work day.
3. The trench must be plated at the end of each work day.

**Two** written notices shall be given to the twelve (12) property owners listed below prior to start of any work on Hillside Lane. The first written notice shall be given **forty-five (45) days** prior to start of work, and the second written notice **seven (7) days** prior to start of work.

1. Miguel and Cynthia Sanchez  
2636 Hillside Avenue  
Norco, CA 92860

**Mailing Address: 836 S. Magnolia Avenue  
Anaheim, CA 92804**

APN 123-130-010

2. **Matthew and Erica Whisnand**  
841 Hillside Lane  
Norco, CA 92860  
APN 123-120-026
3. **Randi Verin**  
851 Hillside Lane  
Norco, CA 92860  
APN 123-120-027
4. **Marlin Nitso**  
861 Hillside Lane  
Norco, CA 92860  
APN 123-120-028
5. **Norma Smalley**  
871 Hillside Lane  
Norco, CA 92860  
APN 123-120-029
6. **William and Lois Camping**  
881 Hillside Lane  
Norco, CA 92860  
APNs 123-120-030 and 123-120-031
7. **William Arthur**  
901 Hillside Lane  
Norco, CA 92860  
APN 123-120-032
8. **Clifford Foehl and Nancy Marra**  
911 Hillside Lane  
Norco, CA 92860  
APN 123-120-033
9. **Carson Sheckler and Dawn Ostrowski**  
921 Hillside Lane  
Norco, CA 92860  
APN 123-120-034
10. **Miguel Ruiz and Moises Rodriguez**  
931 Hillside Lane

Norco, CA 92860  
APN 123-120-035

11. Kathy Klatt  
941 Hillside Lane  
Norco, CA 92860  
APN 123-120-036

12. William and Lucia Shorrock  
951 Hillside Lane  
Norco, CA 92860  
**Mailing Address: Post Office Box 5405  
Norco, CA 92860-8013 B024**  
APN 123-120-037

The Contractor must submit a construction schedule that will incorporate Hillside Lane Construction prior to start of any work on Hillside Lane.

6.25 Work Affecting Temescal Avenue - Temescal Avenue is the primary street utilized for vehicular and pedestrian access to Norco High School and Norco Intermediate School. Any work within Temescal Avenue right of way may occur only during breaks in the Corona-Norco Unified School District (CNUSD) school year. The school schedule is available online at [www.cnusd.k12.ca.us](http://www.cnusd.k12.ca.us). This work includes the portion of South Norco Channel, Stage 6 within Temescal Avenue right of way (approximately Station 28+50 to Station 29+74); Lines S-7, S-8, and S-9 in their entirety; and all street improvements including catch basins, paving and pavement striping on Temescal Avenue adjacent to Norco High School and Norco Intermediate School. The school schedule is available online at [www.cnusd.k12.ca.us](http://www.cnusd.k12.ca.us). **Temescal Avenue and Third Street west of Hillside Lane cannot be closed at the same time. No work on Temescal Avenue shall be allowed on either school's graduation or promotion ceremony days.**

6.26 Work on Norco High School Campus - **The Contractor shall complete most work on the Norco High School Campus during the summer break for Norco High School.** This work includes South Norco Channel, Stage 6 from Station 29+74 to Station 37+00. Any remaining work will have to be completed by January and in close coordination with the school. Summer break is approximately nine (9) weeks and typically begins in early June (June 6<sup>th</sup> - August 9<sup>th</sup> for the 2019-2020 school year). The school schedule is available online at [www.cnusd.k12.ca.us](http://www.cnusd.k12.ca.us). No work or closure of Temescal Avenue will be allowed on the school's graduation ceremony day. For any work during the school session, Contractor shall work with minimal disturbance to the school. The school's traffic hours from Monday -Friday are 7:30 a.m. to 8:30 a.m. (drop-off) and 2:30 p.m. - 3:30 p.m. (pick-up).

Record drawings indicate that there may be buried electrical and gas lines encased in concrete below the existing pedestrian bridge at approximately Station 32+70. These lines may have been relocated to the conduits mounted to the underside of the pedestrian bridge or they may be live. The Contractor shall notify and coordinate with Ernie Marez (951.736.3316) two (2)

weeks prior to work at this location so that appropriate school staff can be onsite to coordinate any work involving the school's bridges or utilities.

**The existing agricultural crossing at approximately Station 36+40 is used by the school's agricultural department to access the high school farm. At all times, the Contractor shall allow vehicles and livestock trailers to reach the agricultural area located east of the channel either by entering the existing access road from Temescal Avenue then driving north, or by entering the easterly channel access road from Third Street then driving south. Safe pedestrian access to and from the agricultural department and the farm must be maintained at all times.**

6.27 Work on Norco Intermediate School Campus - Work on the Norco Intermediate School Campus includes Norco MDP Line S-5 from Station 51+40 to Station 71+20. The CNUSD will allow construction on the campus of Norco Intermediate School while school is in session. However, temporary fencing must be placed around the construction area including privacy screen fabric. If pedestrian access to the school from Hillside Lane cannot be accommodated during construction, the Contractor shall post advance notice at both ends of Hillside Lane for the students. The Contractor shall notify Ernie Marez (951.736.3316) two (2) weeks prior to the start of work on the campus. The Contractor shall provide the school with an estimated construction schedule for work that will affect the existing athletic field and track and to coordinate the relocation of bleachers. **No work or closure of Temescal Avenue will be allowed on the school's promotion ceremony day.** For any work during the school session, Contractor shall work with minimal disturbance to the school. The school's traffic hours from Monday - Friday are 7:30 a.m. to 8:30 a.m. (drop-off) and 2:30 p.m. - 3:30 p.m. (pick-up).

#### SECTION 7 - SOILS REPORT

In conjunction with the soils investigation report prepared by Geocon West, Inc. dated July 31, 2012 and revised January 2, 2013, 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 or can be downloaded from [http://rcflood.org/Documents/Soils\\_Report\\_200015006.pdf](http://rcflood.org/Documents/Soils_Report_200015006.pdf).

#### 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. **The Contractor's attention is directed to Section 29 and Section 32 of these Detailed Specifications for handling groundwater, including investigation, testing, and offsite disposal of contaminated groundwater if necessary.** 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 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 or alter the suitability of the site for the proposed work. 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 - TRAFFIC CONTROL

12.1 Description - The contract item Traffic Control shall include labor, flagmen, lights, barricades, signs, materials, temporary bridges and equipment necessary to ensure that the vehicular and pedestrian traffic conforms to requirements as set forth in this section, specifically for the flood control portion of this project as shown on Sheets 1 through 68 and T1 through T21 of the drawings. This item does not include any traffic control costs associated with the Norco Waterline Relocation drawings shown on Sheets N1 through N4 or the WMWD Waterline Relocation drawings shown on Sheets W-1 through W-3.

12.2 Notification of Agencies - The Contractor shall notify the following agencies a minimum of 48 hours in advance of start of any street work and inform them of the proposed construction schedule and provide any additional pertinent information they may request:

AT&T West Engineering (Lee Corby)	951.359.2255
Charter Communications, Inc. (Micah Polk, primary contact)	951.343.5100 Ext. 15117
Charter Communications, Inc. (Rick Keyner)	626.636.0603
City of Norco Fire Department	951.737.8097
City of Norco, Public Works (Chad Blais)	951.270.5678
City of Norco, Public Works (Sam Nelson)	951.270.5677
City of Norco – Water/Trash Services	951.270.5656
Corona-Norco Unified School District (Ernie Marez)	951.736.3316
Crown Castle Fiber (Ed Mulcahy)	951.264.9953
Ramboll on behalf of Wyle Laboratories (Safaa Dergham)	949.798.3610
Riverside County Sherriff's Department	951.270.5673
Riverside Transit Agency	951.565.5002
Southern California Edison (Sam Kim)	909.930.8425
The Gas Company (David Moreno)	909.335.7850
Underground Service Alert	800.227.2600
United States Postal Service	951.808.4679
Waste Disposal Service	951.270.5656
Western Municipal Water District (Sergio Felix)	951.571.7204

The Contractor is not relieved of his responsibility of notifying the various departments and agencies mentioned above, even if their telephone numbers may have changed without notice.

The above agencies shall also be advised by the Contractor of any major change in the construction schedule that could restrict pedestrian or vehicular traffic.

**The Contractor shall notify the public a minimum of ten (10) working days prior to start of road closure. The Contractor is also required to notify, in writing, the following as applicable: Fire Department, Sheriff, California Highway Patrol, local newspaper, trash pickup, school districts, Riverside Transit Agency, Post Master, UPS, Colleges, Local businesses, Local residents, State and local agencies involved, if affected.**

**12.3 Public Convenience and Access - The Contractor shall comply with the requirements of Section X of the General Provisions and shall provide continuous access to all private property. Additional provisions shall be made as necessary to protect the public and accommodate traffic with a minimum of inconvenience.**

The Contractor shall be aware of the special road closure and access requirements for Temescal Avenue, Third Street, and Hillside Lane. Refer to Section 6 of the Special Provisions for more information.

Closures or partial closures of the traveled way implemented by the Contractor shall be related to actual work being performed at the time. Closures shall not be maintained if work is not being performed. If the existing closure is not essential to the type of work being performed at the time, the traveled way shall immediately be restored to a safe condition for public use.

The Contractor shall provide temporary bridge crossings for all driveway entrances to be closed to vehicular access for any period exceeding 4 hours.

Temporary bridges shall have a minimum width of 12 feet for residential driveways and 24 feet for business driveways, and shall be designed for an AASHTO H20 truck loading. Steel plates placed over the trench shall have a minimum thickness of 1.25" and the surface shall be roughened or coated to provide a non-skid surface. For spans greater than 4 feet, a structural design shall be prepared by a Registered Civil Engineer and submitted to the District for review and approval.

The Contractor shall notify each resident in writing three (3) days in advance of working adjacent to resident's property or excavating past the affected driveway entrance. Such notice shall contain the expected day and period of time (not to exceed 4 hours) that the driveway is to be out of service or the expected duration of construction when working adjacent to resident's property. A copy of each letter shall be submitted to the Engineer.

**12.4 Construction Signs and Traffic Control Plans - All construction signs, barricades, delineators, k-rails, etc., shall conform with the U.S. Department of Transportation, Federal Highway Administration, "Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD), Part 6, latest edition", and the MUTCD California Supplement, Part 6 along with the Uniform Sign Chart as shown on the drawings.**



12.5 Flaggers - All personnel utilized as flaggers must be trained in the proper fundamentals of flagging and signaling.

12.6 Striping and Pavement Marking - Temporary and permanent striping shall be performed by the Contractor at his expense as directed by the Engineer. The Contractor shall restore the permanent striping immediately after resurfacing of the streets is completed. The Contractor shall notify the City of Norco, Public Works Inspector, Dan Cuthbertson, Telephone: 951.545.7872 at least 48 hours prior to restriping.

All temporary traffic striping and pavement markings shall conform to Section 84 of the Caltrans Specifications and shall be acceptable to the City of Norco Public Works Department.

All pavement markings such as arrows, "STOP", "ONLY", reflectors, etc., shall be replaced by the Contractor using thermoplastic. Thermoplastic crosswalk, traffic stripes and pavement markings shall conform to the provisions in Section 84-1, "General" and 84-2, "Thermoplastic Traffic Stripes and Pavement Markings" of the Caltrans Specifications and these Detailed Specifications.

12.7 Payment - The contract prices paid for Traffic Control shall include full compensation for all material and labor costs incurred under this section, specifically for the flood control portion of this project as shown on Sheets 1 through 68 and T1 through T21 of the drawings. This contract item does not include any traffic control costs associated with the Norco Waterline Relocation drawings as shown on Sheets N1 through N4 or the Western Municipal Water District (WMWD) Waterline Relocation drawings as shown on Sheets W-1 through W-3. Contractor is advised that traffic plans as shown on the drawings may be modified as field conditions require. No additional payment shall be made for modifications to the traffic plan.

This payment does not include any traffic control work related to waterline relocations for the City of Norco and WMWD which will be included in the lump sum item price for these respective items and further detailed in Section 30 of these Detailed Specifications.

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

### 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 legal disposal of all vegetation, trees, roots, stumps, block walls, pipes, abandoned facilities, culverts, rocks, structures, curb, gutters, cross gutters, sidewalk, concrete and asphalt excluding those items defined specifically as Excavation in the appropriate sections.

Included in this item are the following:

1. The Contractor shall leave all improved parkways undisturbed where possible. When this is impractical, he shall re-turf in kind areas disturbed in the parkways including removing and replacing interfering portions of sprinkler systems. Sod shall be used to restore disturbed grass. All work is to be done to the satisfaction of the Engineer.
2. The temporary relocation of signs and mailboxes, and their reinstallation. Work involving mailboxes shall be coordinated with the Postal Service.
3. The stenciling and signage on top of all catch basins and drop inlets. Stenciling and signage will be provided by the District.
4. The installation of object markers near catch basins where there is no curb and as marked on the plans.
5. The demolition and removal of interfering curb, curb and gutter, and cross gutters. Reconstruction of new curb, curb and gutter, and curb transitions shall be paid under a separate contract bid item.
6. The breaking up of concrete slabs surrounding the monitoring well and vapor probe well lids as necessary to perform pavement work and ribbon gutter construction as shown on Sheets 30, 42, and 63 of the drawings.
7. The removal and replacement of in kind irrigation lines, irrigation valves, and sprinkler heads within the Norco Intermediate School campus. Coordinate with Ernie Marez at 951.736.3316. See available record drawings from School District in Appendix "D".
8. The temporary relocation of any bleachers and storage sheds within the Norco Intermediate School campus.
9. The removal and replacement of bollards at Hillside Lane.
10. The removal and legal disposal of existing storm drains, metal drains, and plastic pipes within construction limits as marked on the plans. The removal of asbestos pipe as shown on Sheet 10 of the drawings shall be paid for under a separate contract bid item.
11. The removal and legal disposal of existing catch basins, drop inlets and pipes, and associated backfill, as listed below:
  - Catch basin, drop inlet, and corrugated metal pipe as shown on Sheets 13, 23, and 36
  - Catch basin and storm drain as shown on Sheet 11

12. The removal and legal disposal of interfering portions of concrete pipe as marked on Sheets 14 and 43 of the drawings. Contractor to ensure the pipe is abandoned and coordinate with the City of Norco.
13. The removal and legal disposal of the concrete transition structure and 3-foot thick ¼ ton riprap as shown on Sheet 3.
14. The removal and legal disposal of the sidewalk underdrain as shown on Sheet 35. Reconstruction of new sidewalk underdrain shall be paid for under a separate contract bid item.
15. The removal of interfering portions of existing concrete ditches as shown on Sheets 14 and 22. Concrete required for reconstruction of these ditches shall be paid for under a separate contract bid item.
16. The removal of existing pipe culverts underneath the Third Street crossing between Station 28+65 to Station 29+80 and replacement as temporary drains above the relocated WMWD 30" waterline on Sheet W-2 and the City of Norco's relocated 6" waterline as shown at Location #2, Sheet N-3 of the drawings to facilitate temporary drainage during construction in the event the new RCB is not constructed immediately after the pipe relocation work.
17. The removal and legal disposal of existing concrete headwalls, pipes (after RCB construction is completed), and appurtenances at the Third Street crossing as specified on Sheet 11 of the drawings.
18. The adjustment of all existing valves to finished street grade per City of Norco Standard Drawings and painting of valves, if requested by the City of Norco or the Engineer.
19. The saw cutting, removal, and disposal of the existing concrete swale as necessary to construct new storm drain facilities as shown on Sheet 43 of the drawings.

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 Trench Excavation; Channel Excavation; Basin Excavation; Asphalt Concrete Excavation; Trench Backfill; Channel Backfill;

Basin Backfill; Backfill Preparation; Controlled Low Strength Material (CLSM); Slurry Cement Backfill; Filter Material; and Equestrian Trail.

14.2 General Excavation Requirements - Trench Excavation shall be in conformance with Section 306 of the Greenbook Specifications. Channel Excavation and Basin Excavation shall be in conformance with Section 300-7. Trench access ladders shall be in conformance with Section 306-3.6 and the manner of shoring and bracing shall be in conformance with Section 306-4 of the Greenbook 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. The maximum length of open trench shall be in conformance with Section 306-3.5 of the Greenbook Specifications.

In excavating for surfaces against which concrete is to be placed, care shall be exercised in removing the final lift. The foundation for all concrete structures including concrete channels and sideslopes will be inspected and tested after excavation. The subgrade shall be ninety percent (90%) relative compaction prior to the placement of concrete. Surfaces against which concrete is to be placed shall be free of debris, mud or ponded water. If subgrade compaction is deficient, subgrade shall be scarified, moisture conditioned to or slightly above optimum moisture content, and the surface proof rolled to a minimum ninety percent (90%) relative compaction. Subgrade preparation will not be measured or paid separately and no additional compensation will be allowed unless overexcavation is directed by Engineer.

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.

In the absence of obvious discoloration, chemical odors, or other indicators of apparent contamination, soil is considered "non-impacted" soil and any surplus excavated material shall legally be disposed of outside of the limits of the construction easements and permanent rights of way. **If apparently contaminated soil is encountered (based on observed discoloration, detection of chemical odor, etc.) during excavation activities, the Contractor shall strictly follow the requirements in Section 32 of these Detailed Specifications.**

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 19-2.03E of the Caltrans 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 Trench Excavation** - The contract item Trench Excavation covers all costs associated with the excavation necessary for the construction and installation of the reinforced concrete box and pipe, and the associated junction structures, headwalls, manholes, Transition No. 1, Transition No. 3, Transition No. 4, collars, and bulkheads within the excavation paylines as shown on the project drawings, standard drawings, and as directed by the Engineer. Included in this item is the sawcutting (where necessary), removal, and disposal of all surplus excavated material including asphalt, aggregate base, abandoned pipelines, and concrete from within the excavation paylines as specified and as required. All non-impacted surplus material and items not suitable for use as backfill shall be legally disposed of outside the limits of the construction easements, temporary and permanent rights of way. All HMA and P.C.C. shall be sawcut unless otherwise specified.

This contract item also includes the excavation necessary to achieve the surface grades shown on Sheets 8 through 10 of the project drawings (between Station 29+70 to Station 37+00).

**14.4 Channel Excavation** - The contract item Channel Excavation covers all costs associated with the excavation required to construct the rectangular and trapezoidal channels, as well as transitions per Standard CH329 and as shown on the drawings, access roads, access ramps within the reaches shown below, and as directed by the Engineer. Included in this item is the sawcutting (if necessary), removal, and disposal of all surplus excavated material including asphalt, aggregate base, abandoned pipelines, and concrete from within the excavation paylines as specified and as required. All non-impacted surplus material and other items not suitable for use as backfill shall be legally disposed of outside the limits of the construction easements, temporary and permanent rights of way.

Applicable reaches for Channel Excavation:

- Station 10+03 (Sheet 3) through Station 28+44.38 (Sheet 8)
- Station 37+00 (Sheet 10) through Station 42+26.70 (Sheet 11)
- Station 42+76.70 (Sheet 11) through Station 49+46.53 (Sheet 13)

**14.5 Basin Excavation** - The contract item Basin Excavation covers all excavation required to complete the basin grading plan and grade the access road as shown on Sheets 67 and 68 of the drawings and as directed by the Engineer. Included in this item is sawcutting (if necessary), removal, and disposal of all surplus excavated material including asphalt, aggregate base, abandoned pipelines, and concrete from within the excavation paylines as specified and as required. All non-impacted surplus material shall be legally disposed of outside the limits of the construction easements, temporary and permanent rights of way.

**14.6 Asphalt Concrete Excavation** - The contract item Asphalt Concrete Excavation covers the asphalt grinding/header cut and the removal of all materials including asphalt concrete pavement,

aggregate base, abandoned pipelines, and concrete as required to construct the full HMA and aggregate base pavement sections to the depths and dimensions as specified and as shown on the project drawings and the legal disposal of all surplus material. All HMA and P.C.C. shall be sawcut unless otherwise specified.

Included in this contract item is the recompaction of the existing aggregate base to 95% relative compaction should the aggregate base be exposed after removal of existing asphalt concrete, and the 12" wide, 1" thick grind outside of "WP" as shown on Detail A on Sheet 55 and where specified on the drawings.

Exclusive of this contract item is the asphalt concrete excavation within the trench excavation limits which are included in the contract item Trench Excavation.

The cold planing machine shall have a cutter head at least 72 inches wide and shall be operated so as not to produce fumes or smoke.

The final cut shall result in a uniform surface conforming to the typical cross sections. The outside lines of the planed area shall be neat and uniform. The road surfacing to remain in place shall not be damaged in any way.

The material planed from the roadway surface, including material deposited in existing gutters or on the adjacent traveled way, shall be immediately removed from the work site and disposed of outside the right of way. The removal crew shall follow within 50 feet of the planer unless otherwise directed by the Engineer.

**14.7 General Backfill Requirements** - Whenever fill is specified or required (except for pipe and box backfill, or where otherwise specified herein) the work shall be performed as set forth in Sections 300-4.1 to 300-4.8 of the Greenbook Specifications. Backfill for pipe and box shall conform to Section 306-12 of the Greenbook Specifications, except jetting is not allowed.

All fill material placed shall be moistened and shall be free from sod, roots, brush, debris, trash, and other objectionable material.

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. A maximum of six (6) test cylinders per structure will be made and paid by the District for the following day breaks: 7, 14, 21, 28, 28 days, and one break to be agreed upon by the Engineer and Contractor. Any additional test cylinders requested by Contractor shall be deducted from the monthly progress payment at a rate of \$500.00/cylinder.

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.

Backfill will be accomplished by either mechanical methods or by placement of Controlled Low Strength Material (CLSM) as described in (1) and (2) below.

- (1) Mechanical Compaction - Backfill 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 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 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.

All relative compaction tests will be made by the Engineer in conformance with ASTM D1557. Whenever relative compaction is specified to be determined by ASTM D1557.

- (2) Controlled Low Strength Material (CLSM) - Controlled Low Strength Material (CLSM) placement for backfill shall be used when specified or approved by the Engineer. CLSM shall conform to Section 201-6 of the Greenbook Specifications and as specified in Section 16.

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 around structures and pipe shall be compacted to not less than ninety percent (90%) relative compaction. Where such material is placed under existing or proposed paved roadways, the top 3 feet, measured from the subgrade plane, shall be compacted to ninety-five percent (95%) and shall be compacted by Method (1).

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

14.8 Testing - District personnel shall perform compaction tests as described below using either the ASTM D1556 (sand cone) or ASTM D6938 (nuclear) test method. 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 placed. Each series will consist of tests taken at approximate maximum intervals of 300 feet. Each series will begin above the structure.

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.

14.9 Trench Backfill - The contract item Trench Backfill covers all costs associated with storing and transporting of suitable surplus excavated material from the overall project, and the placement and compaction of material around the reinforced concrete box and pipe, and the associated junction structures, headwalls, manholes, Transition No. 1, Transition No. 3, Transition No. 4, collars, and bulkheads within the paylines as shown on the project drawings, standard drawings, and as directed by the Engineer.

This contract item also includes the backfill necessary to achieve the surface grades shown on Sheets 8 through 10 of the project drawings (between Station 29+70 to Station 37+00).

14.10 Channel Backfill - The contract item Channel Backfill includes all costs associated with storing and transporting of suitable surplus excavated material from the overall project, and the placement and compaction of such material to meet the lines and grades specified for the rectangular and trapezoidal channels, as well as transitions per Standard CH329 and as shown on the drawings, access roads, and access ramps within the reaches specified herein for Channel Excavation, or as directed by the Engineer. Included in this item is any cost associated with screening out and disposing of objectionable material, if necessary, to meet the requirements to be used as backfill. Channel Backfill shall be compacted to ninety percent (90%) relative density.

Also included in this item is all earthwork necessary to achieve the access road and grading shown upstream of Station 49+46.53 on Sheet 13.

14.11 Basin Backfill - The contract item Basin Backfill includes all costs associated with storing and transporting of suitable surplus excavated material from the overall project, and the placement and compaction of such material to meet the lines and grades as specified on Sheets 67 and 68 of the drawings. Included in this item is any cost associated with the screening out and disposal of objectionable material, if necessary, to meet the requirements to be used as backfill. Backfill beneath the access road shall be compacted in accordance with the General Backfill Requirements herein. Backfill in areas outside of the access roads shall be mechanically compacted by means of track laying equipment, defined as a bulldozer or equivalent, unless otherwise approved by the Engineer. Compaction shall be defined as eight (8) passes of the equipment over the entire surface of each layer or a maximum 80% relative compaction, whichever is less.

14.12 Backfill Preparation - The contract item Backfill Preparation includes all direct and indirect costs related to hauling, storage, and drying of wet material excavated from and to the trench to achieve optimum moisture content, or import of suitable material to be used for contract item Trench Backfill as described in Section 14.9. The high moisture content shall not be a result on any action on the part of the Contractor, otherwise, such work and material shall be at the expense of the Contractor.



At the beginning of each day of Trench Excavation and/or Channel Excavation, the Engineer shall test the moisture content of the material excavated near the proposed subgrade of the storm drain facility. The Contractor shall only be paid for Backfill Preparation on the days when the tested moisture content exceeds the optimum moisture content.

14.13 Controlled Low Strength Material (CLSM) - The contract item Controlled Low Strength Material (CLSM) shall cover all costs and materials associated with the placement of CLSM as specified on drawings and as directed by the Engineer.

CLSM material conformance is specified in Section 16 of these specifications.

14.14 Slurry Cement Backfill - The contract item Slurry Cement Backfill shall cover all costs and materials associated with the placement of slurry backfill as specified around the pipe or structure as shown on Sheets 24 and 25 or as directed by the Engineer.

Slurry Cement Backfill shall be in conformance with Section 19-3.02D of the Caltrans Specifications.

A minimum of two (2) sacks of cement shall be used for each cubic yard of Slurry Cement Backfill produced.

14.15 Filter Material - The contract item Filter Material includes all filter material to be placed below the reinforced concrete pipe, box, 1/4-ton rock, and various other structures.

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 90-1.02C and 90-1.02C(4)(a) of the Caltrans Specifications. Grading shall meet the requirements for 1" x No. 4 coarse aggregate as per Section 90-1.02C(4)(b) of the Caltrans Specifications. The filter material shall be consolidated and the surface trimmed to final grade as directed by the Engineer.

14.16 Equestrian Trail - The contract item Equestrian Trail includes all costs associated with the furnishing and installation of all trail material required to replace interfering portions of equestrian trails as shown on the drawings. The trail material and installation shall conform to the City of Norco Standard Drawing No. 700.

14.17 Measurement - Trench Excavation; Channel Excavation; Basin Excavation; Asphalt Concrete Excavation; Trench Backfill; Channel Backfill; Basin Backfill; Backfill Preparation; Controlled Low Strength Material (CLSM); Slurry Cement Backfill; Filter Material; and Equestrian Trail beyond the limits established by the project drawings and standard 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 trench 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 Trench 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 pipe or structures, measured along the longitudinal axis of the pipe or structure.

Measurement for payment for the contract items Channel Excavation; and Basin Excavation will be the number of cubic yards excavated within the paylines as shown on the project drawings and standard drawings, or as directed by the Engineer.

Measurement for payment for the contract item Asphalt Concrete Excavation will be the number of square feet excavated as shown on the project drawings, or as directed by the Engineer.

Measurement for payment for the contract items Trench Backfill; Channel Backfill; and Basin Backfill will be the number of cubic yards of fill material placed in final position as specified and within the limits of the payment lines shown on the project drawings and standard drawings. Existing (pre-project) grades will be established by the District based on surveyed cross sections. Where Backfill is specified to be placed above existing (pre-project) grades, the volumes above the existing grade will be measured from the ground surface existing prior to placement of any fill compared to the approved finished grades, as determined from surveyed cross sections taken by the District. The longitudinal limits for Trench Backfill shall terminate at a vertical plane at the limits of the pipe or structure, measured along the longitudinal axis of the various pipe or structures. Volumes occupied by structures, aggregate base, asphalt concrete and other features for which a separate payment is made will be deducted from the gross volume.

Measurement for payment for the contract item Backfill Preparation will be the same number of cubic yards of material placed and paid under the backfill contract item(s) for each day the qualifying criterion as stated in Section 14.12 of these Detailed Specifications is met.

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

Measurement for payment for the contract item Slurry Cement Backfill will be the number of cubic yards of material placed in final position as specified and within the limits of the payment lines as shown on the drawings. The longitudinal limits for Slurry Cement Backfill shall terminate at a vertical plane at the limits of the pipe or structure, measured along the longitudinal axis of the various pipe or structures. Volume occupied by structures, aggregate base, asphalt concrete and other features 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.

Measurement for payment for the contract item Equestrian Trail will be the number of square feet of materials placed in final position as specified to the lines, grades, and dimensions as shown on the drawings or as directed by the Engineer.

14.18 Payment - The contract prices paid for Trench Excavation; Channel Excavation; Basin Excavation; Asphalt Concrete Excavation; Trench Backfill; Channel Backfill; Basin Backfill; Backfill Preparation; Controlled Low Strength Material (CLSM); Slurry Cement Backfill; Filter Material; and Equestrian Trail 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 306-4 of the Greenbook 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 bridges and reinforced concrete boxes shall conform with Section 48-2 Falsework of the Caltrans 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 (a minimum of 70 drum revolutions and a maximum of 250 drum revolutions are required to provide sufficient agitation to the concrete mix) 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	Boxes, Rectangular Channel, Transition Structure Nos. 1, 3 and 4, Transitions (L1, L2, and L3) per CH329, Junction Structure Nos. 1 and 3, Vertical (Stem), Extension Walls, Edge Beams, Collars, Bulkheads, Parapet Walls, Headwalls, Special Access Ramp and Transition Structure between Station 40+77.70 and Station 41+96.70, Special Transition Structure between Station 41+96.70 and Station 42+26.70	4000*
A	6	Slope Paving and Footing per CH323, Access Ramps, Catch Basins, Drop Inlets, Manholes, Slabs Surrounding Manhole Covers, Junction Structure Nos. 2, 4, 7 and 8, Transverse Cutoff Walls, Collection Works Ditch on Sheet 43	3250*
B	5	Longitudinal Channel Cutoff Walls, Curb, Gutter, Sidewalk, Driveways, Local Depressions, Pipe Seals, Aprons, Sanitary Sewer Protection (Encasements), Concrete Slope Protection Outside of Channel, Minor Ditches on Sheets 14 and 22, and Miscellaneous Concrete not otherwise specified	3000*
E	1/2 Max.	Controlled Low Strength Material (CLSM)	50-100 (hand excavatable)

\*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.

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 Caltrans 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 90-1.02C(4)(d) of the Caltrans Specifications and the following tabulation for each type of work listed:

<u>TYPE OF WORK</u>	<u>COMBINED AGGREGATE GRADING</u>
The inverts of: Reinforced Concrete Box, Rectangular Channels, Junction Structures, Transition Structures and Manholes.	1-1/2" Maximum
Slope Paving, Box Deck and Walls, Rectangular Channel Walls, Headwalls, Catch Basins, Drop Inlets, Parapet Walls, Local Depressions, Curb and Gutter, Driveways, Sidewalk, Cutoff Walls, Bulkheads, Collars, Edge Beams, Encasements and other Miscellaneous Concrete not otherwise specified.	1" Maximum
Controlled Low Strength Material (CLSM)	*See below

\*Note: Controlled Low Strength Material (CLSM) gradation shall conform to Section 201-6.2.2 of the Greenbook Specifications except that the Contractor has the option to use reclaimed concrete material for the CLSM. The reclaimed material shall meet the same grading requirements as non-reclaimed material set forth in Greenbook Specifications Section 201-6.2.2.

The Contractor may also elect to use an air entrained agent or an accelerant (2% PolarSet or equivalent) to speed up the set time of the CLSM. The Contractor shall submit mix designs for review and approval.

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 Caltrans 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 90-1.02G(3) of the Caltrans 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 Caltrans 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.

Controlled Low Strength Material (CLSM) flow characteristics shall be determined by the producer to meet job site conditions and shall be approved by the Engineer.

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 51-1.03D(1) of the Caltrans 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.

Element

Strength or Time

Reinforced Concrete Boxes with spans 14 feet or less,  
and not at pavement grade, Manhole Structures,  
Transition Structure Nos. 1, 3, & 4

1600 psi

All other structures

16 hours

The finish on all exposed formed surfaces shall conform to Section 51-1.03F(3) Class 1 Surface Finish of the Caltrans Specifications. A tight wood float finish will be required on the surface of trapezoidal channels 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.

Concrete flatwork shall match adjacent surfaces. The concrete shall be struck off and tamped or vibrated until a layer of mortar has been brought to the surface. The top surface and face of curbs, gutters, catch basins and sidewalks shall be finished to match adjacent surfaces.

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 90-1.03B(3) of the Caltrans Specifications and ASTM Designation C-309. The curing compound shall be No. 2 White Pigmented Curing Compound, Type 2, Class B for all concrete surfaces other than for flatwork which shall be coated with No. 6 Nonpigmented Curing Compound, Type 1-D, Cass A 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 Controlled Low Strength Material (CLSM) Curing - Controlled Low Strength Material (CLSM) must achieve a maximum indentation diameter of three (3) inches as determined under ASTM D6024 before covering.

16.10 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 and rectangular 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 for the rectangular channel walls 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 51-1.03D(4) of the Caltrans Specifications.

For cast-in-place 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 Standard 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.

For rectangular channels, keyed transverse construction joints shall not exceed 50 feet or be less than 10 feet. Transverse joints in the invert and the walls shall be in the same plane. Transverse construction joints shall be constructed per details on the Standard 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

16.11 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 Greenbook Specifications. Filter material shall also meet the quality requirements of Sections 200-1.1 and 200-1.2 of the Greenbook 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 be Class A per Section 88-1.02B of the Caltrans 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.

16.12 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 concreted invert of the channel.

Equipment loading and vehicular use of box invert and rectangular channel shall not be allowed until concrete reaches its compressive strength specified in Section 16.2.

A rubber track 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.

16.13 Class "A" Concrete, Reinforced Concrete Box - The contract item Class "A" Concrete, Reinforced Concrete Box includes the complete construction of all cast-in-place reinforced concrete boxes, transitions per Standard Drawing CH329, vertical (stem) extension walls, Transition Structure No. 4, parapet walls, and headwalls. Included in the pay item is all reinforcing steel required, but exclusive of earthwork. Pre-cast reinforced concrete box work shall be per Section 31 of these Detailed Specifications.

Reinforced concrete box walls shall be constructed by placing the concrete directly against timber or steel sheeting used as the outside form and shoring. Sheeting shall be closely fitted and extend a minimum of 12 inches above the ground surface. Unless otherwise directed, all sheeting shall be removed and the void created shall be immediately backfilled with a well graded sand and thoroughly jetted to the relative densities specified in Backfill.

The Contractor has an option of forming both sides of the reinforced concrete box walls, however, due to additional loads on the box structure resulting from this trench condition, the Contractor will be required to submit an alternate box design prepared by a Civil Engineer registered in the State of California. All alternate box designs are subject to the approval of the Engineer and no additional payment will be made for the alternate box if approved.

If the box is constructed from State of California, Department of Transportation Standard Plans, either method of forming noted in the above paragraphs may be used without an alternate box design being submitted.

Loading and vehicular use of box deck slab shall comply with the requirements of Section 51-1.03B of the Caltrans Specifications (also apply to bridge deck slab).

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

16.14 Class "A" Concrete, Rectangular Channel - The contract item Class "A" Concrete, Rectangular Channel includes the complete construction of the rectangular channel per the limits shown on the plans and details shown on Sheets 3 and 53. Included in the pay item is all reinforcing steel required, but exclusive of earthwork.

Also included in this item of work will be the construction of weepholes, if required.

16.15 Class "A" Concrete, Special Access Ramp and Transition, and Special Transition - The contract item Class "A" Concrete, Special Access Ramp and Transition, and Special Transition includes the complete construction of the special access ramp and transition structure between Station 40+77.70 and Station 41+96.70, and the special transition structure between Station 41+96.70 and Station 42+26.70 on Sheet 11, including the channel invert, walls, slopes, and vertical (stem) extension walls. Included in the pay item is all reinforcing steel required, but exclusive of earthwork.

Not included in this item are the longitudinal cutoff walls which are covered under the contract item Class "B" Concrete, 2' Cutoff Wall. Also included in this item of work will be the construction of weepholes, if required.

16.16 Class "A" Concrete, Channel Slope Paving and Footing - The contract item Class "A" Concrete, Channel Slope Paving and Footing includes the complete construction of the concrete slope paving and footing of the concrete lined soft bottom channel (per modified CH323 on Sheet 50), and access ramps. Included in the pay item is all reinforcing steel required, but exclusive of earthwork.

Also included in this item of work will be the construction of weepholes, if required.

The finished surface of the channel shall be true to line and grade and concrete shall be not less than the minimum thickness indicated on the drawings and as specified in Section 6.11 Construction Tolerances of the Special Provisions.

16.17 Class "A" Concrete, Collars and Bulkheads - The contract item Class "A" Concrete, Collars and Bulkheads includes the complete construction of collars and bulkheads as specified on the drawings. Included in the pay item is all reinforcing steel required, but exclusive of earthwork.

16.18 Class "A" Concrete, Minor Structures - The contract item Class "A" Concrete, Minor Structures includes the complete construction of the catch basins, drop inlets, slabs surrounding manhole covers, and the collection works ditch on Sheet 43 of the drawings. Included in the pay item is all earthwork and reinforcing steel required for these structures, but exclusive of the required miscellaneous iron and steel. The subgrade for cross gutters, ribbon gutters, and spandrels shall be scarified to a depth of twelve inches (12") and compacted to ninety-five percent (95%) relative compaction prior to the placement of concrete.

16.19 Class "A" Concrete, Transverse Cutoff Wall - The contract item Class "A" Concrete, Transverse Cutoff Wall includes the complete construction of the transverse cutoff walls across the trapezoidal channel per the details shown on Sheet 51 of the drawings. Included in the pay item is all earthwork and reinforcing steel required.

16.20 Class "B" Concrete, 2' Cutoff Wall - The contract item Class "B" Concrete, 2' Cutoff Wall includes the complete construction of the entire longitudinal (continuous) cutoff walls on each side of the channel prism and at the outer edge of the collection works structure on Sheet 43. Included in the pay item is all earthwork and reinforcing steel.

16.21 Class "B" Concrete, Sidewalk - The contract item Class "B" Concrete, Sidewalk includes the complete construction of sidewalks as shown on the drawings or as directed by the Engineer. Included in the pay item is all earthwork and reinforcing steel.

16.22 Class "B" Concrete, Miscellaneous - The contract item Class "B" Concrete, Miscellaneous includes the complete construction of the curb, curb and gutters, curb transitions, cross gutters, ribbon gutters, spandrels, driveways, local depressions, pipe seals, aprons, sanitary sewer protection (encasements), slope protection outside of the channel, concrete brow ditches as shown on Sheets 14 and 22 of the drawings, additional concrete needed to seal the ends of pipe prior to pouring collars as shown in the detail on Sheet 13 of the drawings, and any other concrete not specified. Included in the pay item is all earthwork and reinforcing steel required. The subgrade for cross gutters, ribbon gutters, driveways, and spandrels shall be scarified to a depth of twelve inches (12") and compacted to ninety-five percent (95%) relative compaction prior to the placement of concrete.

16.23 Transition Structures - The contract items Transition Structure Nos. 1 and 3 covers the complete construction of these various structures, including reinforcing steel but exclusive of earthwork.

16.24 Junction Structures - The contract items Junction Structure Nos. 1, 2, 3, 7, and 8 covers the complete construction of these structures, including reinforcing steel, exclusive of earthwork.

No separate payment will be made for Junction Structure No. 4.

16.25 Manholes - The contract items Manhole Nos. 1, 2, and 4 cover the complete construction of these various structures, including reinforcing steel, exclusive of earthwork and the miscellaneous iron and steel.

The manhole rings are required and shall conform to ASTM Designation: C-478, and the drawings. The rings shall be laid up, using Type II modified cement with a 1:2 mix mortar and with 1/2-inch minimum thickness pointed joints. On completion, vertical wall section shall not be out of plumb by more than 1/2-inch in 10 feet of vertical height. The manhole rings shall also be accurately aligned. The cast iron manhole frame and cover shall be installed, with frame accurately set to finished grade of pavement, in mortar well tamped around the perimeter of frame to ensure full bearing.

16.26 Measurement - Measurement for payment for the contract items Class "A" Concrete, Reinforced Concrete Box; Class "A" Concrete, Rectangular Channel; Class "A" Concrete, Special Access Ramp and Transition, and Special Transition; Class "A" Concrete, Channel Slope Paving and Footing; Class "A" Concrete, Collars and Bulkheads; Class "A" Concrete, Minor Structures; Class "A" Concrete, Transverse Cutoff Wall; 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.

Measurement for payment for the contract item Class "B" Concrete, Sidewalk will be the number of square feet placed.

Measurement for payment for the contract items Transition Structure No. 1; Transition Structure No. 3; Junction Structure No. 1; Junction Structure No. 2; Junction Structure No. 3; Junction Structure No. 7; Junction Structure No. 8; Manhole No. 1; Manhole No. 2; and Manhole No. 4 will be the number of each type constructed as specified.

No measurement or payment will be made for Junction Structure No. 4.

No measurement or payment will be made for dowels, tie bars, tie wires, blocks, chairs and other accessories.

16.27 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 except where modified as indicated on the drawings. 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.

The District will also require the D-load bearing strength test conforming to ASTM C497 for new pipe 30" or greater, in conformance with Sections 207-2.9.1(1) and 207-2.9.2 of the Greenbook Specifications as a basis for acceptance of the pipe. The test shall be performed in the presence of the Engineer.

Pipe shall be laid in a trench free of ponded water in conformance with Section 306-5, with joints in conformance with Section 306-7.3 of the Greenbook 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, exclusive 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 Video Inspection - All storm drains with a height or diameter of 60 inches or less shall be recorded by closed circuit television (CCTV) prior to final inspection. The recorded video and report shall be provided to the District for review. For storm drains within paved roadway, the video inspection and report shall be approved by the District prior to paving. Any additional video required to address video quality or construction deficiencies shall be completed by the Contractor at no additional expense to the District. All video inspection shall follow the RCFC Video Procedures (Appendix "I") and any re-inspection shall be at a minimum of a storm drain segment as defined in the RCFC Video Procedures.

17.6 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.

17.7 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 items Aggregate Base, Class 2; Hot Mix Asphalt (HMA); Hot Mix Asphalt (HMA) Dike; and Temporary Resurfacing.

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 Caltrans Specifications using 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 26-1.03A and 26-1.03C of the Caltrans Specifications. The aggregate base material shall be compacted as specified in Section 26-1.03D of the Caltrans Specifications.

The aggregate material used for exposed surfaces, such as shown on Sheet 65 and where specified elsewhere, shall not contain recycled concrete products.

19.3 General Hot Mix Asphalt (HMA) Requirements - The Contractor shall not start paving Hot Mix Asphalt (HMA) until all compaction on the aggregate base is tested and approved by the Engineer.

The HMA shall be proportioned, mixed, spread and compacted in accordance with the applicable provisions in Section 39 of the Caltrans Specifications and these Detailed Specifications.

The Contractor shall ensure the safe transportation, storage, use and disposal of HMA.

The Contractor shall prevent the formation of carbonized particles caused by overheating HMA during manufacturing or construction.

19.4 Hot Mix Asphalt (HMA) Aggregate - Aggregates shall be clean and free from decomposed materials, organic material, and other deleterious substances. Coarse aggregate is material retained on the No. 4 sieve and fine aggregate is material passing the No. 4 sieve. Supplemental fine aggregate is added fine material passing the No. 30 sieve including, but not limited to, cement and stored fines from dust collectors.

The aggregate grading of the different types of Hot Mix Asphalt (HMA) shall conform to the following, unless otherwise specified on the plans:

HMA Type	Grading
A	$\frac{3}{4}$ -inch and/or $\frac{1}{2}$ -inch

The base course of the HMA shall consist of  $\frac{3}{4}$ -inch aggregate for Type A and the final surface course for Type A shall consist of  $\frac{1}{2}$ -inch aggregate.

The combined aggregate gradation and quality characteristics for HMA Type A aggregate(s), prior to addition of asphalt binder, shall conform to the requirements found in the following tables:



**Aggregate Gradation HMA Type A  
(Percentage Passing)**

**¾-inch HMA Type A**

Sieve Sizes	Target Value Limits	Allowable Tolerance
1-inch	100	-
¾-inch	90-100	TV ±5
½-inch	70-90	TV ±6
No. 4	45-55	TV ±7
No. 8	32-40	TV ±5
No. 30	12-21	TV ±4
No. 200	2-7	TV ±2

**Aggregate Gradation HMA Type A  
(Percentage Passing)**

**½-inch HMA Type A**

Sieve Sizes	Target Value Limits	Allowable Tolerance
¾-inch	100	-
½-inch	95-99	TV ±6
3/8-inch	75-95	TV ±6
No. 4	55-66	TV ±7
No. 8	38-49	TV ±5
No. 30	15-27	TV ±4
No. 200	2-8	TV ±2

**HMA Type A Aggregate Quality**

Quality Characteristic	Test Method	Requirement	
Percent of crushed particles <sup>1</sup>	CT 205		
Coarse aggregate (% min.)			
One fractured face			90
Two fractured faces	75		
Fine aggregate (Passing No. 4 Sieve and retained on No. 8 Sieve) (% min.)	CT 211		
One fractured face			70
Los Angeles Rattler (% max.) <sup>1</sup>	CT 217		
Loss at 100 rev.			12
Loss at 500 rev.			45
Sand equivalent <sup>1, 2</sup> (min.)	AASHTO T 304 Method A	47	
Fine aggregate angularity (% min.) <sup>1</sup>			45
Flat and elongated particles (% max. by weight at 5:1) <sup>1</sup>	ASTM D 4791	10	

Note: <sup>1</sup>Combine aggregate in the job mix formula proportions.

<sup>2</sup>Reported value must be the average of three (3) tests from a single sample.

19.5 Asphalt Binder - The asphalt binder to be mixed with aggregate shall conform to these Detailed Specifications and shall be as designated below or as determined by the Engineer:

- Grade PG 64-10 (Inland Valleys)

The Contractor shall furnish and place the HMA with all asphaltic emulsions required.

Asphalt binder shall consist of refined petroleum or a mixture of refined liquid asphalt and refined solid asphalt, prepared from crude petroleum. Asphalt binder shall be:

- Free from residues caused by the artificial distillation of coal, coal tar or paraffin
- Free from water
- Homogeneous

The Contractor shall furnish asphalt binder from a supplier that conforms to the State of California Department of Transportation's "Certification Program for Suppliers of Asphalt". The Department maintains the program requirements, procedures, and a list of approved suppliers at <http://www.dot.ca.gov/hq/esc/Translab/ormt/fpmcoc.htm>.

The amount of asphalt binder to be mixed with the mineral aggregate shall be between three percent (3%) and seven percent (7%) by weight, of the dry mineral aggregate. The exact amount of asphalt binder to be mixed with the mineral aggregate shall be determined by a special mix design.

Performance grade paving asphalt shall conform to the testing requirements in the table below:

**Performance Graded Asphalt Binder**

Property	AASHTO Test Method	Specification Grade			
		PG 64-10	PG 64-16	PG 70-10	PG 64-28PM <sup>i</sup>
Original Binder					
Flash Point, Minimum °C	T48	230	230	230	230
Solubility, Minimum % <sup>b</sup>	T44	99	99	99	98.5
Viscosity <sup>c</sup> at 135 °C, Maximum, Pa·s	T316	3.0	3.0	3.0	3.0
Dynamic Shear, Test Temp. at 10 rad/s, °C	T315	64	64	70	64
Minimum G <sup>*</sup> /sin(delta), kPa		1.00	1.00	1.00	1.00
RTFO Test <sup>e</sup> , Mass Loss, Maximum, %	T240	1.00	1.00	1.00	1.00

RTFO Test Aged Binder					
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum $G^*/\sin(\delta)$ , kPa	T315	64 2.20	64 2.20	70 2.20	64 2.20
Ductility at 25 °C Minimum, cm	T51	75	75	75	-
Dynamic Shear, Test Temp. at 10 rad/s, °C Minimum $(\delta)$ , %	T315	-	-	-	Note g 80
PAV <sup>f</sup> Aging, Test Temperature, °C	R28	100	100	110	100
Elastic Recovery <sup>h</sup> , Test Temp., °C Minimum recovery, %	T 301	-	-	-	25 75
RTFO Test and PAV Aged Binder					
Dynamic Shear, Test Temp. at 10 rad/s, °C Maximum $G^*/\sin(\delta)$ , kPa	T315	31 <sup>d</sup> 5000	28 <sup>d</sup> 5000	34 <sup>d</sup> 5000	31 5000
Creep Stiffness, Test Temperature, °C Maximum S-value, Mpa Minimum M-value	T313	0 300 0.300	-6 300 0.300	0 300 0.300	-12 300 0.300

**Notes:**

- a. Not used.
- b. The Engineer will waive this specification if the supplier is a Quality Supplier as defined by Department's "Certification Program for Suppliers of Asphalt".
- c. The Engineer will waive this specification if the supplier certifies the asphalt binder can be adequately pumped and mixed at temperatures meeting applicable safety standards.
- d. Test the sample at 3 °C higher if it fails at the specified test temperature.  $G^*\sin(\delta)$  shall remain 5000 kPa maximum.
- e. "RTFO Test" means the asphaltic residue obtained using the Rolling Thin Film Oven Test, AASHTO Test Method T240 or ASTM Designation: D2827.
- f. "PAV" means Pressurized Aging Vessel.
- g. Test temperature is the temperature at which  $G^*/\sin(\delta)$  is 2.2 kPa. A graph of  $\log G^*/\sin(\delta)$  plotted against temperature may be used to determine the test temperature when  $G^*/\sin(\delta)$  is 2.2 Kpa. A graph of  $(\delta)$  versus temperature may be used to determine  $\delta$  at the temperature when  $G^*/\sin(\delta)$  is 2.2 kPa. The Engineer also accepts direct measurement of  $(\delta)$  at the temperature when  $G^*/\sin(\delta)$  is 2.2 kPa.
- h. Test without a force ductility clamp may be performed.
- i. Do not modify PG Polymer Modifier using acid modification.

Certificates of compliance shall be furnished to the Engineer certifying that the asphaltic emulsions and paving asphalts conform to the referenced Greenbook Specifications.

19.6 Hot Mix Asphalt (HMA) Prime Coat - Prime coat shall consist of refined petroleum and shall conform to the provisions in Section 93 "Liquid Asphalts" of the Caltrans Specifications. Prime coat shall be applied only to those areas designated by the Engineer. The application rate shall be 0.25 gallon per square yard of surface covered. The exact rate and number of applications will be determined by the Engineer.

19.7 Hot Mix Asphalt (HMA) Paint Binder/Tack Coat - Asphaltic emulsion for paint binder (tack coat) shall conform to the provisions in Section 94 "Asphaltic Emulsion" of the Caltrans Specifications for the rapid-setting or slow-setting type and grade approved by the Engineer. Grade CQS1 shall be used if not otherwise specified by the Engineer. Tack coat shall be applied to all vertical surfaces of existing pavement, curbs, gutters, and construction joints in the surfacing against which additional material is to be placed, to a pavement to be surfaced, and to other surfaces designated in the Detailed Specifications. The application rate shall be from 0.02 to 0.10 gallon per square yard of surface covered. The exact rate and number of applications will be determined by the Engineer.

19.8 Hot Mix Asphalt (HMA) Placement - Hot Mix Asphalt (HMA) shall be spread and compacted in the number of layers of the thicknesses indicated in the following table:

Total Thickness Shown on Plans <sup>1</sup>	Minimum No. of Layers	Top Layer Thickness (ft.)		Next Lower Layer Thickness (ft.)		All Other Lower Layer Thickness (ft.)	
		Min.	Max.	Min.	Max.	Min.	Max.
0.24-foot or less	1	-	-	-	-	-	-
0.25-foot	2	0.12	0.13	0.12	0.13	-	-
0.26 - 0.46-foot	2	0.12	0.21	0.14	0.25	-	-
0.47-foot or more	3 or more	0.15	0.21	0.15	0.25	0.17	0.25

<sup>1</sup>When pavement reinforcing mat is shown to be placed between layers of HMA, the thickness of HMA above the pavement reinforcing mat shall be considered to be the "total thickness shown on plans".

The straightedge for smoothness determination on the top layer of HMA pavement shall conform to the tolerance specified in Section 39-1.12B, "Straightedge" of the Caltrans Specifications.

Areas of the top surface of the uppermost layer of HMA pavement that do not meet the specified surface tolerances shall be brought within tolerance by abrasive grinding. Areas which have been subjected to abrasive grinding shall receive a seal coat. The corrective method for each area shall be selected by the Contractor and shall be approved by the Engineer prior to beginning the corrective work.

When abrasive grinding is used to bring the top surface of the uppermost layer of HMA surfacing within the specified surface tolerances, additional abrasive grinding shall be performed as necessary to extend the area ground in each lateral direction so that the lateral limits of grinding are at a constant offset from, and parallel with, the nearest lane line or pavement edge, and in each longitudinal direction so that the grinding begins and ends at lines normal to the pavement

centerline, within a ground area. Ground areas shall be neat rectangular areas of uniform surface appearance.

19.9 Hot Mix Asphalt (HMA) - The contract item Hot Mix Asphalt (HMA) covers the furnishing and installation of HMA necessary for the repair and resurfacing of streets damaged or removed due to construction operations, or as otherwise specified on the plans, including all aggregate, asphalt binder, prime coat, and tack coat/paint binder as specified herein, exclusive of any excavation or pavement grinding.

19.10 Hot Mix Asphalt (HMA) Dike - The contract item Hot Mix Asphalt (HMA) Dike covers all labor, equipment, and materials needed for the construction of HMA Dike as shown on the project drawings. Asphalt and aggregates for HMA Dikes shall conform to Section 39-1.14 of the Caltrans Specifications. The asphalt surface shall be cleaned thoroughly prior to applying any tack coat. Included in the pay item is all earthwork required to establish lines and grades per the project drawings.

19.11 Temporary Resurfacing - The contract item Temporary Resurfacing is required for short reaches of the mainline and connector pipe trenches whenever excavation is made through pavement on which traffic must be allowed immediately after backfilling, only as directed by the Engineer. Otherwise the leveling course of the HMA may be used to open the work area to traffic until the final paving is completed. Measurement and payment of the leveling course will be made as a HMA item, not Temporary Resurfacing.

Temporary Resurfacing shall be 2" (0.17') and in conformance with Section 306-13 of the Greenbook Specifications.

19.12 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.**

Measurement for payment of the contract item Hot Mix Asphalt (HMA) will be the number of tons placed to the lines, grades and dimensions shown on the drawings. The HMA pay quantity shall be determined by using a conversion factor of 144 pounds per cubic foot for all HMA placed within standard paylines. No measurement for payment will be made for asphalt emulsions, including asphalt binder, HMA prime coat, HMA tack coat/paint binder required for this portion of the work, all costs for these items shall be included in the price paid for HMA. **No allowance will be made for HMA placed outside said dimensions unless otherwise ordered by the Engineer.**

Measurement for payment of the contract item Hot Mix Asphalt (HMA) Dike will be the number of lineal feet placed as shown on the drawings. No measurement for payment will be made for asphalt emulsion, tack coat, or earthwork.

Measurement for payment of the contract item Temporary Resurfacing will be the number of tons placed as specified in Section 19.11 and as directed by the Engineer.

19.13 Payment - The contract prices paid for Aggregate Base, Class 2; Hot Mix Asphalt (HMA); Hot Mix Asphalt (HMA) Dike; and Temporary Resurfacing 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; Temporary Fencing; Cable Railing; Trail Fence; Remove Existing Fence; Remove Existing Gates; Remove and Reinstall New Chain Link Fence and New Sliding Gate; 10-Foot Double Drive Gates; 12-Foot Double Drive Gates; 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.

All materials shall be new, unless otherwise specified on the drawings for removal and relocation, or unless use of salvaged materials is approved by the Engineer. Materials salvaged shall be subject to the Engineer's approval prior to reinstallation. New fencing materials shall conform to Section 206-6 of the Greenbook Specifications and the drawings. All installation shall be in conformance with Section 304-3.2 of the Greenbook Specifications. All posts shall be set in commercial plant quality, 4 sack per cubic yard concrete. Fencing fabric shall be installed with the knuckled finish at the top of the fabric and the barbed finish at the bottom.

20.3 Temporary Fencing - The contract item Temporary Fencing shall include all labor, materials and equipment necessary for installing, maintaining, and removing the temporary fencing. The temporary fencing shall be a 6-foot high chain link fence as shown on the drawings and shall include a privacy screen fabric mesh subject to the Engineer's approval. Fencing materials need not be new and fence posts need not be set in concrete.

20.4 Cable Railing - The contract item Cable Railing 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 Caltrans Specifications.

20.5 Trail Fence - The contract item Trail Fence includes all costs associated with the furnishing and installation of Trail Fence as shown on the drawings and as directed by the Engineer. Included in this item is all hardware parts, posts, and fittings.

All materials shall be new except those specified for removal and relocation and shall conform to City of Norco Standard Drawing No. 705.

20.6 Remove Existing Fence - The contract item Remove Existing Fence includes all costs associated with the removal and legal disposal of chain link and wood fences as noted on the drawings and as directed by the Engineer. Materials salvaged subject to the Engineer's approval shall be delivered to the District yard. Otherwise, if not approved by the Engineer, the salvaged material shall be disposed of offsite.

20.7 Remove Existing Gates - The contract item Remove Existing Gates includes all labor and equipment required for removal and relocation, if required, of District access gates as noted on the drawings and as directed by the Engineer. Materials salvaged shall be subject to the Engineer's approval prior to reinstallation. Otherwise, if not approved by the Engineer, the salvaged material shall be legally disposed of offsite.

20.8 Remove and Reinstall New Chain Link Fence and New Sliding Gate - The contract item Remove and Reinstall New Chain Link Fence and New Sliding Gate covers all labor, equipment, materials, and any incidentals required for the complete removal and disposal of interfering portions as shown on Sheets 19 through 22 of the drawings and reinstallation with new materials to match the existing fence height and gate width.

20.9 10-Foot Double Drive Gates - The contract item 10-Foot Double Drive Gates includes furnishing and installing 10-foot double drive gates as shown on the drawings, complete with all gate posts set in concrete and in conformance with Section 304-3.3 of the Greenbook Specifications. Padlocks are not included in this item. On completion, gates shall operate freely without wedging or binding.

20.10 12-Foot Double Drive Gates - The contract item 12-Foot Double Drive Gates includes furnishing and installing 12-foot double drive gates as shown on the drawings, complete with all gate posts set in concrete and in conformance with Section 304-3.3 of the Greenbook Specifications. Padlocks are not included in this item. On completion, gates shall operate freely without wedging or binding.

20.11 14-Foot Double Drive Gates - The contract item 14-Foot Double Drive Gates includes furnishing and installing 14-foot double drive gates as shown on the drawings, complete with all gate posts set in concrete and in conformance with Section 304-3.3 of the Greenbook Specifications. Padlocks are not included in this item. On completion, gates shall operate freely without wedging or binding.

20.12 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 Temporary Fencing will be the number of lineal feet of fencing installed for the temporary fencing and relocations.

Measurement for payment for the contract item Cable Railing will be the number of lineal feet of new cable railing installed along the top of the railing parallel to the ground.

Measurement for payment for the contract item Trail 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 Remove Existing Fence will be the number of lineal feet of removed fence measured along the top of the fence parallel to the ground. No

payment will be made under this contract item if the fence is salvaged and approved for reinstallation.

Measurement for payment for the contract item Remove Existing Gates will be per pair of removed gates measured at each location. No payment will be made under this contract item if the gates are salvaged and approved for reinstallation.

No measurement will be made for the lump sum contract item Remove and Reinstall New Chain Link Fence and New Sliding Gate.

Measurement for payment for the contract items 10-Foot Double Drive Gates; 12-Foot Double Drive Gates; and 14-Foot Double Drive Gates will be the number of pairs installed. Excavation and concrete required for fence or gate posts will not be measured for payment.

20.13 Payment - The contract price paid for 6-Foot Chain Link Fence; Temporary Fencing; Cable Railing; Trail Fence; Remove Existing Fence; Remove Existing Gates; Remove and Reinstall New Chain Link Fence and New Sliding Gate; 10-Foot Double Drive Gates; 12-Foot Double Drive Gates; 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 Miscellaneous Iron and Steel; Remodel Sewer Service Lateral; Adjust Manhole to Grade; Retaining Wall; Remove and Dispose Asbestos Pipe; Reconstruct Sidewalk Underdrain; Conduit Bank; Repair Track Field; and Extra Directed Work.

21.2 Miscellaneous Iron and Steel - The contract item Miscellaneous Iron and Steel covers all ferrous metal used in the various hydraulic structures. Materials, parts and fittings shall conform with the following:

- (a) Manhole Frames and Covers - Per ASTM Designation: A-48, Class 35B. Manhole frames and covers shall be minimum weight as shown on the plans, and the weight of each frame and cover shall be indicated thereon in white paint. Style and markings shall be approved by the Engineer. The castings shall be free from cracks, blowholes or other imperfections, straight, true to pattern and have a uniform finish. The castings for manholes in streets shall be thoroughly cleaned and coated with asphaltum paint of approved composition; all other castings for frames and covers shall be cleaned and galvanized. The cover shall fit firmly into the frame without rocking, with the frame accurately placed so that cover is flush with finish paving. All covers shall be provided with socket set screw locking devices. Drill and tap two holes to a depth of one-inch at 90 degrees to pick hole and install 3/4-inch x 3/4-inch stainless steel socket set screws with 3/8-inch recessed hex head. All threads shall be National Coarse threading.
- (b) All other Miscellaneous Metal - Per ASTM Designation: A-36.



- (c) Galvanizing - Except for manhole frames and covers described above, all exposed ferrous metal shall be galvanized per Section 210-3 of the Greenbook Specifications.

21.3 Remodel Sewer Service Lateral - The contract item Remodel Sewer Service Lateral pertains to the removing of interfering portions of house sewer connections and replacing with new pipe and any mainline modification required. The remodeling shall be done in accordance with the drawings, including excavation, backfill and any concrete encasement but excluding asphalt concrete or aggregate base in this item of work. Only the vitrified clay pipe (VCP) house connections interfering with the RCB or pipe conduit to be constructed will be measured for payment.

21.4 Adjust Manhole to Grade - The contract item Adjust Manhole to Grade covers all labor, equipment, materials and incidentals required for the complete adjustment of all manholes within the project limits to meet the proposed finished grade. Utility manhole and vault frames and covers within an area to be paved or graded will be set by the owners thereof to finished grade. Sewer and storm drain manhole frames within the area to be paved or graded shall be set to finish grade by the Contractor. Manholes in asphalt concrete pavement shall be set to finish grade in accordance with provisions of 403-3. In case of Portland cement concrete pavement, manhole frames shall be set to finish grade before paving. Repaving required as a result of reconstructing or adjusting all manhole and vault frames and covers to grade shall be the responsibility of the Contractor and the cost thereof shall be included in the bid item for pavement. The Contractor shall remove all debris from the interior of manholes and shall clean all foreign material from the top of the frames and covers.

21.5 Retaining Wall - The contract item Retaining Wall includes the complete construction of the retaining wall as shown on the drawings. Included in this item is the labor, earthwork, and materials inclusive of reinforcing steel required for the wall, drainage system, and the associated footing as shown on Sheet 11 of the drawings. The retaining wall shall be in conformance with the Type 2: 6" Heel as shown in the City of Norco Building Department Document titled "Western Riverside County Code Uniformity Program - Retaining Walls". Contractor shall provide compacted backfill as needed above the wall footing as specified in the standard drawing and as directed by the Engineer.

21.6 Remove and Dispose Asbestos Pipe - The contract item Remove and Dispose Asbestos Pipe covers all labor, equipment, materials, testing, and incidentals required for the removal and disposal of the asbestos pipe and its proper disposal as shown on Sheet 10 of the drawings. The Contractor or his subcontractor shall be certified in asbestos handling and disposal in accordance with the latest federal, state, and local agency laws. The Contractor shall provide Hazardous Waste Hauler Manifest to the Engineer prior to hauling any asbestos material. The Contractor shall also provide a bill of lading and the appropriate paper work and receipt from the disposal site once the transit materials have been properly disposed.

21.7 Reconstruct Sidewalk Underdrain - The contract item Reconstruct Sidewalk Underdrain covers all labor, equipment, materials, and incidentals required for the reconstruction of the sidewalk underdrain on Sheet 35 per Riverside County Transportation Department Standard Drawing No. 309 as shown on the drawings.

21.8 Conduit Bank - The contract item Conduit Bank covers all labor, materials, equipment, and incidentals for the complete construction of conduits as specified and shown on Sheet 9 of the drawings. This item includes all pipes, fittings, couplings, excavation, compaction, bedding, and backfill.

All pipe, fittings, and couplings shall be schedule 40 PVC approved for direct burial. Pipe shall be assembled with solvent welded joints in accordance with the manufacturer's written instructions and fittings and couplings shall be factory-produced.

21.9 Repair Track Field - The contract item Repair Track Field covers all labor, equipment, materials, and incidentals required for the reconstruction of any excavated athletic track and incidentals within the Norco Intermediate School campus as shown on the drawings. The track materials shall be 4-inch thick, beige color decomposed granite including stabilizing binder material supplied by Gail Materials or approved equal, and constructed per the supplier's and Norco Intermediate School District's standards. Gail Materials is located at 10060 Dawson Canyon Road in the city of Corona.

21.10 Extra Directed Work - The contract item Extra Directed Work shall consist of necessary work that is not included in other contract bid items and not shown on the drawings, as determined by the Engineer. All Extra Directed Work shall be performed only as directed by the Engineer and in accordance with all applicable standards and specifications.

21.11 Measurement - Measurement for payment for the contract item Miscellaneous Iron and Steel will be the number of pounds used in the work as specified. Should manhole frames and covers exceed the minimum weights as shown on the drawings by more than two percent (2%) that weight in excess of the allowable two percent (2%) increase will not be measured for payment. Manhole frames and covers to be salvaged and reused will not be measured for payment.

Measurement for payment for the contract item Remodel Sewer Service Lateral will be the number of vitrified clay pipes installed. There will be no separate payment for special fittings or joint materials and modification to the main line.

Measurement for payment for the contract item Adjust Manhole to Grade shall be the number of manholes that are adjusted to meet the proposed finished grade.

Measurement for payment for the contract item Retaining Wall shall be number of lineal feet installed.

No measurement will be made for lump sum contract items Remove and Dispose Asbestos Pipe; Reconstruct Sidewalk Underdrain; Conduit Bank; and Repair Track Field.

21.12 Payment - The contract prices paid for Miscellaneous Iron and Steel; Remodel Sewer Service Lateral; Adjust Manhole to Grade; Retaining Wall; Remove and Dispose Asbestos Pipe; Reconstruct Sidewalk Underdrain; Conduit Bank; Repair Track Field; and Extra Directed Work shall include full compensation for all costs incurred under this section.

Full compensation for the contract item Extra Directed Work shall be as "Extra Work" and shall be paid pursuant to Section 2.07 of the General Provisions. The total accumulated costs for Extra Directed Work shall not exceed the amount specified in the contract bid item unless otherwise increased by change order.

SECTION 22 THROUGH SECTION 25 - NOT USED

SECTION 26 - STONEMWORK

26.1 Description - This section covers the contract items 1/4-Ton Rock; Cobble Layer; Crushed Rock; and Rock Protection Fabric.

26.2 General - All rock materials (except Cobble Layer and Crushed Rock) shall meet the gradation requirements of Section 72-2.02 of the Caltrans Specifications and the quality requirements of Sections 200-1.6.1 and 200-1.6.3 of the Greenbook Specifications.

Rock materials shall be blocky and predominantly angular in shape. Not more than 25% of the rock shall have a length more than 2.5 times the breadth or thickness. No rock shall have a length exceeding 3.0 times its breadth or thickness. All oversize rocks, as determined by the Engineer, shall be removed.

Rock materials shall be placed on a firm dry foundation in conformance with Method B of Section 72-2.03 of the Caltrans Specifications, however, additional placement effort shall be required to meet the lines and grades as shown on the drawings and to fill and chink oversize voids with selected rock to establish a stable interlock. Chinking of voids will not be required for rock specified to be concreted.

26.3 1/4-Ton Rock - The contract item 1/4-Ton Rock covers the rock furnished and placed in the channel invert as shown on the drawings. Rock shall conform to 1/4-Ton Class, for Method B placement per Section 72-2.02 of the Caltrans Specifications.

26.4 Cobble Layer - The contract item Cobble Layer covers the material and installation of the cobble layer on the invert of the channel as shown on the drawings.

All cobble to be 4"-8" Malibu Cobble by Southwest Boulder and Stone or approved equal. Contractor shall submit sample of cobble for approval by the Resident Engineer. Cobbles shall be placed in the channel as designated on the plans to an average depth of 12".

The cobble layer shall conform to Section 72-4 of the Caltrans Specifications and shall be carefully placed on top of the protection fabric to the lines and grades as shown on the plans. Material shall be placed on firm, dry foundation. Soft, spongy material shall be removed and replaced with acceptable compacted material as directed by the Engineer. The cost of foundation preparation shall be included in the price bid for excavation and no additional allowance will be made for such work. The cobble layer shall be consolidated and the surface trimmed to final grade as shown on the drawings or as directed by the Engineer.

The 1-foot thick grading shall comply with the following table:

Sieve sizes	% Passing
9-inch	100
5-inch	80-90
4-inch	25-40
3-inch	0-10

26.5 Crushed Rock - The contract item Crushed Rock covers the complete installation of crushed rock on access roads, turn arounds, and within District right of way as shown on the plans and as directed by the Engineer. Grading for the Crushed Rock shall meet the requirements for 1" x No. 4 coarse aggregate as per Section 90-1.02C(4)(b) of the Caltrans Specifications. Crushed Rock shall additionally meet the spreading and compaction requirements of Sections 26-1.03C and 26-1.03D of the Caltrans Specifications, respectively.

26.6 Rock Protection Fabric - Rock Protection Fabric shall be placed beneath all 1/4-ton rock and cobbles and shall conform to Class 10 per Section 88-1.02I of the Caltrans Specifications. Rock Protection Fabric must be transported, stored, and installed in accordance with these specifications and the manufacturer recommendations (whichever is stricter). Product that is damaged or otherwise not handled in strict conformance with these requirements may be required to be replaced at no cost to the District.

In sections of the channel where 1/4-ton rock will be placed, filter material shall first be placed over the rock protection fabric to the thicknesses specified on the drawings before placement of the 1/4-ton rock. Payment for this filter material will be paid under the contract item Filter Material as described in Section 14 of these Detailed Specifications.

26.7 Measurement - Measurement for payment for the contract items 1/4-Ton Rock; Cobble Layer; and Crushed Rock, shall be the number of cubic yards placed as specified.

Measurement for payment for the contract item Rock Protection Fabric shall be the number of square yards placed to the neat lines as required per the drawings, or as otherwise required by the Engineer. No measurement for payment will be made for laps required for installation or for convenience to the Contractor.

26.8 Payment - The contract prices paid for 1/4-Ton Rock; Cobble Layer; Crushed Rock; and Rock Protection Fabric shall include full compensation for all costs incurred under this section.

## 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 disturbed graded areas shall be scarified and hydroseeded except for the channel and access roads.

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 21-1.03E of the Caltrans Specifications. Fiber shall be produced from natural or recycled (pulp) fiber and shall meet the requirements of Section 21-1.02E of the Caltrans 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.

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. All disturbed areas shall be scarified and hydroseeded as directed by the Engineer.

The Contractor shall provide a written submittal of the per load mix tabulation, based on a ratio of the tank capacity and the equipment utilized for the project. The Contractor's submittal will be reviewed for 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 Fiber Mulch
- 120 lbs./acre Stabilizing binder

No commercial fertilizer shall be used.

Seed mix shall contain sterile seed wheat hybrid commercially used for erosion control in California, such as wheat x wheatgrass or a triticale hybrid. Seeding rate shall be as recommended by manufacturer as a cover crop for over-seeding in disturbed, weedy soil.

28.5 Measurement - Measurement for the contract item Hydroseeding will be made on the basis of the actual area treated to the nearest one hundredth (0.01) acre as measured by the Engineer.

28.6 Payment - The contract price paid for Hydroseeding shall include full compensation for all costs incurred under this section. No payment shall be made for the Hydroseeding required as a result of the Contractor or his subcontractor disturbing areas outside of the project limits.

## 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. R8-2015-0004.

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 and Board Order No. 2012-0006-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://rcflood.org/Documents/SWPPP\\_Template\\_200015006.pdf](http://rcflood.org/Documents/SWPPP_Template_200015006.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**". A copy of the "California Stormwater BMP Handbook – Construction", 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 PRDs
- 1.3 SWPPP Availability and Implementation
- 1.4 SWPPP Amendments
- 1.5 Retention of Records
- 1.6 Required Non-Compliance Reporting
- 1.7 Annual Report
- 1.8 Changes to Permit Coverage
- 1.9 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 Site 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 Control 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 Objectives
- 7.2 M&RP Implementation Schedule
- 7.3 LUP Monitoring and Reporting Requirements
- 7.4 Monitoring for Non-Visible Pollutants

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 REAP - The REAP is applicable to LUP Risk Level 2 construction sites only.** The Contractor shall ensure a QSP develop a REAP and submit a copy to the Engineer for review 48 hours prior to any likely precipitation event. The Contractor shall amend and implement the REAP as directed by the Engineer. If no comments are received prior to the precipitation event, the REAP shall be implemented as proposed. A likely precipitation event is any weather pattern that is forecast to have a 50% or greater probability of producing precipitation in the project area. The discharger shall ensure a QSP obtain a printed copy of the precipitation forecast information from the National Weather Service Forecast Office (e.g., enter the zip code of the project's location at <http://www.weather.gov>).

The Contractor's QSP shall ensure that the REAP include, at a minimum, the following site information:

- a. Site Address
- b. Calculated Risk Level
- c. Site Stormwater Manager information including the name, company and 24-hour emergency telephone number
- d. Erosion and Sediment Control Provider information including the name, company and 24-hour emergency telephone number
- e. Stormwater Sampling Agent information including the name, company and 24-hour emergency telephone number

**29.8 Water Quality Monitoring, Sampling and Analysis - The Water Quality Monitoring, Sampling and Analysis is applicable to LUP Risk Level 2 construction sites only.** The Contractor's QSD shall be responsible for preparing an M&RP and implementing the monitoring, sampling and analysis requirements as described in Attachment A of the General Permit. Records of all visual observations and sampling results required by the General Permit shall be kept using the forms contained in Attachment 3 of the CASQA Construction BMP Handbook Portal. Copies of the forms shall be maintained in the SWPPP and submitted to the Engineer within 24 hours of the visual observation or sampling event.

**29.9 NAL Exceedance Report - The NAL Exceedance Report is applicable to LUP Risk Level 2 construction sites only.** The Contractor shall be responsible for submitting a NAL Exceedance Report to the Engineer in the event that any effluent sample exceeds an applicable NAL.

- a. The Contractor shall submit all storm event sampling results for each discharge point to the Engineer no later than 24 hours after the conclusion of the storm event.
- b. The Contractor shall certify each NAL Exceedance Report in accordance with the Special Provisions for Construction Activity.

- c. The Contractor shall retain an electronic or paper copy of each NAL Exceedance Report for a minimum of three (3) years after the date the annual report is filed.
- d. The Contractor shall include in the NAL Exceedance Report:
  - i. The analytical method(s), method reporting unit(s) and method detection limit(s) of each analytical parameter (analytical results that are less than the method detection limit shall be reported as "less than the method detection limit").
  - ii. The date, place, time of sampling, visual observation (inspections) and/or measurements, including precipitation.
  - iii. A description of the current BMPs associated with the effluent sample that exceeded the NAL and the proposed corrective actions taken.

29.10 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.

29.11 Non-Stormwater Discharge or Dewatering - The Contractor shall implement non-stormwater BMPs described in Sections 29.2, 29.3, and 29.6 to prevent or eliminate all non-stormwater discharges from the construction site. This contract item covers the discharge or

dewatering of non-stormwater and all associated costs, including treatment if necessary, in certain limited cases where authorized by the Engineer.

Stormwater discharges are comprised of runoff that originate as rainfall and are directly discharged from the site during or immediately following a rain event, and not retained or used for other purposes. In contrast, examples of non-stormwater include, but are not limited to: groundwater in excavations, ponded sump areas (or excavations) such as may remain following a storm event, or water from other non-storm sources.

Discharges of non-stormwater from the construction site to surface waters are prohibited unless the discharge is compliant with a permit issued by CRWQCB - Santa Ana Region. **If the discharge will include groundwater, Section 32 must first be followed to ascertain whether the non-stormwater is contaminated.** If the non-stormwater is contaminated per Section 32, the procedures in Section 32 must be followed and the following instructions do not apply to that discharge.

If the groundwater is not contaminated per Section 32 and for all other sources of non-stormwater that will be discharged from the site, the Contractor must implement the following provisions to obtain coverage and comply with the General Waste Discharge Requirements for Discharges to Surface Waters that Pose an Insignificant Threat to Water Quality, CRWQCB - Santa Ana Region Order No. R8-2015-004 (General De Minimus Permit). This Order can be downloaded from [http://www.waterboards.ca.gov/santaana/board\\_decisions/adopted\\_orders/orders/2015\\_orders.shtml](http://www.waterboards.ca.gov/santaana/board_decisions/adopted_orders/orders/2015_orders.shtml).

Notice of Intent - The Contractor shall prepare the Notice of Intent application in Attachment B of the General De Minimus Permit. The Notice of Intent requires a complete characterization of the discharge which includes, but is not limited to the following:

- Description of project and types of wastewater that are proposed to be discharged;
- A list of potential pollutants in the discharge and the anticipated concentration of each pollutant;
- Proposed discharge locations as latitude and longitude for each discharge point;
- Description of the proposed treatment system (if appropriate);
- The name and location of the initial and ultimate receiving water;
- A map showing path from discharge to the ultimate receiving water;
- A list of known or suspected leaking underground tanks and other facilities or operations that have or may have impacted the quality of the underlying groundwater within 200 feet of the project; and
- Any other information required by CRWQCB - Santa Ana Region.

The Contractor shall submit any fees required for permit coverage with the Notice of Intent application to CRWQCB - Santa Ana Region. The Discharge Authorization Letter issued by CRWQCB - Santa Ana Region may include additional requirements. The Contractor shall also comply with the terms and conditions of the Discharge Authorization Letter.

Monitoring and Reporting - When discharging non-stormwater from dewatering activities to surface waters, the Contractor shall comply with and implement Attachment E - Monitoring and Reporting Program and the terms and conditions of the Discharge Authorization Letter.

In addition to submitting monitoring reports to CRWQCB - Santa Ana Region as required by the General De Minimus Permit, the Contractor shall submit a copy of the monitoring reports to the Engineer for review.

If the results of discharge monitoring identifies exceedances for any effluent limits listed in Attachment E or the Discharge Authorization Letter (General De Minimus Effluent Limits), the Contractor shall immediately contain and cease the discharge and notify the Engineer.

Treatment of Dewatering Discharges - When authorized by the Engineer, the Contractor shall prepare and submit to the Engineer for review and approval a treatment plan that will describe how the Contractor proposes to treat the construction dewatering wastes in order to reduce the exceeded parameters/constituents to levels within the General De Minimus Permit Effluent Limits.

The treatment plan must contain the following items:

- Description of the parameters/constituents which exceeded the General De Minimus Permit Effluent Limits;
- Description of proposed treatment method(s) to reduce exceeded parameters to levels within the effluent limits, detailing locations, system capacity (including calculations), design (including engineering drawings), and installation, operation, maintenance, and removal procedures;
- Exhibit showing locations of the proposed treatment system;
- Schedule of implementation and anticipated compliance (reduction of exceeded parameters/constituents to levels within General De Minimus Permit Effluent Limits);
- Additional monitoring for constituents which exceeded the General De Minimus Permit Effluent Limits; and
- Certification that sampling personnel are trained to collect, maintain, and ship samples in accordance with the Surface Water Ambient Monitoring Program (SWAMP) 2008 Quality Assurance Program Plan.

Following approval from the Engineer, the Contractor shall implement the approved treatment plan. Before resuming any dewatering discharges, the Contractor must fully implement the approved treatment plan and ensure that all treatment facilities are operational.

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

29.12 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 29.11, "Non-Stormwater Discharge or Dewatering". **Contractor shall not be paid any portion of the contract lump sum if coverage under the De Minimus Permit is not required.**

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 29.10(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 - UTILITIES

30.1 Description - This section covers the contract items City of Norco Waterline Relocations; and Western Municipal Water District (WMWD) Waterline Relocation as shown on two separate sets of construction drawings by each entity.

30.2 City of Norco Waterline Relocations - The contract item City of Norco Waterline Relocations includes all labor, equipment, materials, testing, dewatering, disinfection, and incidentals required to safely relocate City of Norco Waterlines as shown on the construction drawings. Included in this item is the relocation of water services per the City of Norco Standard 410 or 412 as shown on Sheet 24 of the drawings. The relocation of such waterlines shall be done in accordance with the drawings prepared by Armstrong & Brooks Consulting Engineers on behalf of the City of Norco as shown on Sheets N1 through N4 of the drawings and in accordance with the City of Norco's Technical Provisions (see available copy in Appendix "E") and Water Utility Specifications and Standards.

The Contractor shall obtain the latest edition of the City of Norco's Water Utility Specifications and Standards from [www.norco.ca.us](http://www.norco.ca.us) or by contacting Sam Nelson, City of Norco, Public Works Department at 951.270.5677 or by email at [snelson@ci.norco.ca.us](mailto:snelson@ci.norco.ca.us).

All materials proposed to be used by the Contractor for the construction of such relocations shall be submitted for review and approval to the City of Norco and the District.

30.3 Western Municipal Water District (WMWD) Waterline Relocation - The contract item Western Municipal Water District (WMWD) Waterline Relocation covers all labor, equipment, materials, testing, dewatering, disinfection, and incidentals required to safely relocate the WMWD 30" waterline as shown on Sheets W-1 through W-3 of the drawings. The relocation of such waterline shall be done in accordance with the drawings prepared by Albert A. Webb Associates on behalf of WMWD and in accordance with WMWD's Special Conditions (see available copy in Appendix "F") and Technical Specifications.

WMWD's Technical Specifications can be downloaded from [http://rcflood.org/Documents/Technical\\_Specifications\\_200015006.pdf](http://rcflood.org/Documents/Technical_Specifications_200015006.pdf).

All materials proposed to be used by the Contractor for the construction of such relocations shall be submitted for review and approval to WMWD and the District.

30.4 Payment - The contract lump sum prices paid for the City of Norco Waterline Relocations; and Western Municipal Water District (WMWD) Waterline Relocation items shall include full compensation for all costs incurred under this section. Successful bidder shall submit a "Schedule of Values" breakdown for the contract items City of Norco Waterline Relocations; and Western Municipal Water District (WMWD) Waterline Relocation prior to the award of contract. Contractor's submittal for "Schedule of Values" breakdown shall utilize Form 1, Appendix "G" for the City of Norco Waterline Relocations and Form 2, Appendix "H" for the Western Municipal Water District (WMWD) Waterline Relocation. This payment will be made on a basis of the percentage of work completed as listed in the approved "Schedule of Values" breakdown for each submittal.

### SECTION 31 – PRECAST REINFORCED CONCRETE BOX

31.1 Description - This section covers the contract item 12'W x 5'H Precast Reinforced Concrete Box (PRCB) as required for the work.

31.2 General Requirements - This specification covers single-cell Precast Reinforced Concrete Box (PRCB) sections. The span, rise, soil weight and design earth cover shall be as shown on the plans. The Contractor shall follow Sections 216 and 306-10 of the Greenbook Specifications except as noted in the following sections.

31.3 Materials - The materials used for the 12'W x 5'H PRCB shall comply with Section 216-2 of the Greenbook Specifications except as follows:

Filter Material shall be used in place of Leveling Bed Material. Filter Material shall be installed, measured and paid for as described in Section 14 of these Detailed Specifications.

31.4 Fabrication - The Fabrication for the PRCB shall conform to Section 216-3 of the Greenbook Specifications with the following exceptions:

Reinforcement placement shall conform to the details shown on the plans or standard plans except that the minimum cover of concrete over the reinforcement for the invert is two (2) inches.

All splices or laps must be tied.

PRCB sections shall be fabricated with one end beveled where the curves, grade breaks or angle points shown on the drawings would otherwise result in a clear space greater than 1 inch measured at the extreme ends. Beveled sections must be identified on the Shop Drawings and PRCB Layout Diagrams.

The interior surface of the PRCB shall be smooth and well finished. The manufacturer may be required to provide a representative section to be used to determine the acceptable finish by the Engineer.

31.5 PRCB Shop Drawings, Calculations, and Layout Diagrams - PRCB Shop Drawings and Layout Diagrams shall be prepared and submitted in accordance with the Greenbook Specifications, with the following additions.

Shop Drawings shall show the necessary details of all reinforcing steel and lifting devices and locations for all PRCB sections.

The Contractor must provide engineered special designs for all PRCB sections that incorporate openings for manholes and junction structures not already detailed on the plans. Shop Drawings and supporting engineering calculations for these specially designed sections shall be prepared by a California Registered Civil Engineer and submitted to the Engineer for approval prior to the pre-construction meeting and in accordance with Section 3-8.1 of the Greenbook Specifications. No manufacturing of any specially designed PRCB sections will be allowed prior to the approval of the Shop Drawings.

The Shop Drawings and PRCB Layout Diagrams must explicitly identify which joints are beveled and the 'drop' dimension for each.

31.6 Basis of Acceptance - The basis of acceptance of the 12'W x 5'H PRCB shall be dependent on whether the plant fabricating the PRCB sections is currently certified on the Caltrans Authorized Facility Audit List for Structural Precast Concrete, ([http://www.dot.ca.gov/des/QualitySystem/documents/mets/controlleddocuments/Internet\\_auditlisting.pdf](http://www.dot.ca.gov/des/QualitySystem/documents/mets/controlleddocuments/Internet_auditlisting.pdf)) as follows:

- a) If the PRCB Manufacturing Plant is NOT certified on Caltrans Authorized Facility Audit List:

The basis of acceptance shall be full compliance with these Specifications demonstrated through Contractor-supplied third party inspections and verification in accordance with Section 31.7 of these Detailed Specifications.

- b) If PRCB Manufacturing Plant IS certified on Caltrans Authorized Facility Audit List:

The basis of acceptance shall be provision of a Certificate of Compliance conforming to Section 4-5 of the Greenbook Specifications from the certified manufacturing plant **BEFORE** any PRCB is ordered or fabricated. The Contractor shall supply documentation to the satisfaction of the Engineer, that the plant is currently certified on the Caltrans Authorized Facility Audit List.

Either acceptance, however, shall be considered a tentative acceptance. Final acceptance will only be made when the work is completed.

**31.7 Contractor Supplied Third-Party Inspection of PRCB Plant** - If the PRCB is fabricated at a plant that is NOT currently certified on the Caltrans Authorized Facility Audit List, the Contractor, at its expense, shall engage a Qualified Inspector or Accredited Testing Laboratory to inspect the materials, equipment and manufacture of the PRCB.

The PRCB inspections shall be conducted for every 400 feet or 50 units and shall include cage manufacturing, curing processes, batching equipment and process, aggregate and cement storage, concrete mix designs and product handling.

The Qualified Inspector or Accredited Testing Laboratory shall be approved by the Engineer and:

1. Either be registered as a Civil Engineer in the State of California or have a current Plant Quality Personnel Certification, Level II from the Precast/Prestressed Concrete Institute; and
2. Be a subcontractor providing only quality control inspection services; and
3. The Inspector or Accredited Testing Laboratory must not be affiliated with, employed or compensated by any material provider, the PRCB manufacturer, or any other subcontractor providing other services or materials for this project.

The Inspection Reports to be submitted to the Engineer shall include, at a minimum:

1. Plant location;
2. Names of all inspectors and the specific inspections they performed that day;
3. Verification of compliance with these contract documents for every 400 feet or 50 units;
4. Any problems or deficiencies discovered;
5. Any testing or repair work performed; and
6. Daily production reports.

The Third-Party Inspector shall forward all daily reports to the Engineer on a weekly basis. Any problems or deficiencies discovered shall be immediately reported to the PRCB manufacturer and to the Engineer. Deficiencies shall be corrected to the satisfaction of the Engineer, or the affected products must be replaced at no cost to the District.