

**SUBMITTAL TO THE BOARD OF SUPERVISORS
COUNTY OF RIVERSIDE, STATE OF CALIFORNIA**

184



FROM: Riverside County Department of Waste Resources

SUBMITTAL DATE:
July 30, 2015

SUBJECT: Approval of Contract Documents including Specifications for the Department of Waste Resources Site Maintenance and Improvements Construction, District 4 & 5 [\$0 -Department of Waste Resources Enterprise Funds], CEQA Exempt.

RECOMMENDED MOTION: That the Board of Supervisors:

1. Find that the Project is exempt from the California Environmental Quality Act (CEQA) pursuant to State CEQA Guidelines Sections 15061(b)(3) (General Rule for Exemption), and categorically exempt pursuant to Section 15301 (Existing Facilities) and Section 15304 (Minor Alterations of Land); and
2. Approve the Contract Documents including Specifications for the Department of Waste Resources Site Maintenance and Improvements Construction; and
3. Authorize the General Manager-Chief Engineer of the Riverside County Department of Waste Resources to advertise for bids.

BACKGROUND:

Summary (continued)

Hans Kernkamp
General Manager-Chief Engineer

FINANCIAL DATA	Current Fiscal Year:	Next Fiscal Year:	Total Cost:	Ongoing Cost:	POLICY/CONSENT (per Exec. Office)
COST	\$ 0	\$ 0	\$ 0	\$ 0	Consent <input type="checkbox"/> Policy <input checked="" type="checkbox"/>
NET COUNTY COST	\$ 0	\$ 0	\$ 0	\$ 0	

SOURCE OF FUNDS: Department of Waste Resources Enterprise Funds
 Budget Adjustment: No
 For Fiscal Year: 15/16

C.E.O. RECOMMENDATION:

APPROVE

BY:
Steven C. Horn

County Executive Office Signature

MINUTES OF THE BOARD OF SUPERVISORS

On motion of Supervisor Jeffries, seconded by Supervisor Tavaglione and duly carried, IT WAS ORDERED that the above matter is approved as recommended.

Ayes: Jeffries, Tavaglione, Washington and Benoit
 Nays: None
 Absent: Ashley
 Date: August 18, 2015
 xc: Waste

Kecia Harper-Ihem
Clerk of the Board
By:
Deputy
COUNTY

Prev. Agn. Ref.: _____ District: 4 & 5 Agenda Number: _____

12-2

FORM APPROVED COUNTY COUNSEL
BY:
DATE: 8/3/15
GREGORY P. PRIAMOS

Departmental Concurrence

- A-30
- Positions Added
- 4/5 Vote
- Change Order

**SUBMITTAL TO THE BOARD OF SUPERVISORS, COUNTY OF RIVERSIDE, STATE OF CALIFORNIA
FORM 11 Approval of Contract Documents including Specifications for the Department of Waste
Resources 2014 Site Maintenance and Improvements Construction, District 4 & 5 [\$0 –Department of
Waste Resources Enterprise Funds], CEQA Exempt.**

DATE: July 30, 2015

PAGE: 2 of 2

BACKGROUND: (cont.)

The project covered by this contract is certain construction work affecting the Edom Hill, Beaumont, Mead Valley, and Coachella Landfills.

In September 2014 a storm caused severe erosion throughout the Edom Hill Landfill, which caused the failure of a concrete drainage structure. This contract represents the Department's efforts to repair the drainage structure and erosion at the Edom Hill Landfill and to construct stormwater preventative measures at the Mead Valley, Coachella and Beaumont landfills. This work will reduce the introduction of pollutants which affect the quality of storm water discharges at these sites. This work will insure ongoing regulatory compliance related to required erosion and drainage control features.

In addition, fence material at the Mead Valley Landfill has been damaged and stolen during the past several years. This had led to an increase in trespassing and costs to repair, replace, and install new fence. The Department has received "area of concerns" for site security from the Riverside County Department of Environmental Health - Local Enforcement Agency. To resolve the issue, the Department plans to relocate onsite rock to construct a more permanent barrier in areas where fencing has been damaged and stolen. Installation of a rock barrier should eliminate trespassing in these areas and reduce maintenance costs associated with site security.

California Environmental Quality Act (CEQA) Findings

The Project is exempt from CEQA pursuant to the State CEQA Guidelines Section 15061(b)(3) (General Rule for Exemption), and categorically exempt from CEQA pursuant to Section 15301 Existing Facilities and Section 15304 Minor Alterations of Land. The Project contemplated in this Form 11 involves approval of a contract identifying proposed work at existing closed landfills. The Contract Documents including Specifications will be advertised, and ultimately, a contractor will be selected to complete the work (under a separate Board action). The work identified in the Contract Documents including Specifications involves on-going site maintenance, drainage improvements and repairs, and security enhancements at several closed landfills (existing public facilities- Edom Hill, Beaumont, Mead Valley, and Coachella Landfills) with no expansion of approved uses. This work would not have a direct, indirect, or cumulatively significant effect on the environment. A Notice of Exemption (NOE) to this effect will be filed with the County Clerk upon Project approval.

Impact on Citizens and Businesses

Completion of the Project will improve and repair drainage structures within existing public facilities. As a result, water quality within the facilities storm water discharge shall improve. In addition, the Project will improve site security; thereby reducing occurrences of trespass. This will result in a cost savings due to a reduction in maintenance costs associated with site security.

Price Reasonableness

The Engineer's estimate for this project is \$508,000 and the action today, if approved, will authorize the Department to pursue competitive bids through the California Public Works Contract process.

CONTRACT DOCUMENTS

FOR

CONSTRUCTION OF

2015 SITE IMPROVEMENTS

AT THE

CLOSED EDM HILL, BEAUMONT, MEAD

VALLEY AND COACHELLA LANDFILLS

Prepared by:

RIVERSIDE COUNTY
DEPARTMENT OF WASTE RESOURCES

14310 Frederick Street
Moreno Valley, CA 92553

FORM APPROVED COUNTY COUNSEL

BY: Neal R. Kipnis
NEAL R. KIPNIS

7/14/18
DATE

AUG 18 2015 12-2045

TABLE OF CONTENTS

NOTICE TO CONTRACTORS..... IV
INSTRUCTIONS TO BIDDERS VI
CONTRACTOR'S PROPOSAL.....X
LIST OF SUBCONTRACTORS XIII
STATEMENT OF LICENSURE XV
AFFIDAVIT FOR INDIVIDUAL CONTRACTORS.....XVI
AFFIDAVIT FOR JOINT VENTURE OR COPARTNERSHIP CONTRACTOR
XVII
AFFIDAVIT FOR CORPORATE CONTRACTOR..... XVIII
BID BOND.....XIX
AGREEMENT..... XX
PERFORMANCE BOND..... XXIII
PAYMENT BOND.....XXIV

GENERAL PROVISIONS

SPECIAL PROVISIONS

PROJECT DRAWINGS (11 X 17)

APPENDICES

Appendix A – BMP Installation Details from the CASQA/Cal-Trans Stormwater BMP Handbook

NOTICE TO CONTRACTORS

The Riverside County Department of Waste Resources, hereinafter called "County," invites sealed bids for

CONSTRUCTION OF THE RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES 2015 SITE IMPROVEMENTS PROJECT

Contract Documents may be examined at the County's office located at 14310 Frederick Street, Moreno Valley, California, and may be obtained at the County office for \$30 per set, or \$45 if mailed by U.S. mail (mailing cost does not apply when using recipient's mailing account number). No refund will be made.

The Project Drawings are also available electronically in digital Microstation (.dgn) format. The digital files will be available by email or FTP. No refund will be made. This digital data was created using Microstation software, and will be made available only in the Microstation (.dgn) format. This digital data is to be used at the Contractor's own discretion. The County is not responsible for the manner in which the Contractor chooses to use the digital data. The County is not responsible for how this digital data might be converted by the Contractor to another format. The Contractor is solely responsible for its use of this digital data.

Each proposal must be accompanied by a certified or cashier's check or bid bond equal to ten percent (10%) of the amount bid, payable to the County of Riverside as a guarantee that the Contractor will, if awarded the contract, execute a satisfactory contract and furnish the required bonds and provide the required certificates of insurance.

Proposals must be placed in a sealed envelope clearly marked "Contractor's Proposal". Proposals must be in accordance with the instructions and filed with the County by 11:00 am on Tuesday, September 8, 2015 at 14310 Frederick Street, Moreno Valley, CA 92553 which time and place are fixed for the public opening of bids. A mandatory pre-bid site review will be conducted at the Edom Hill Landfill on Thursday, August 27, 2015, at 10:00 am. The Edom Hill Landfill site is located at 70-100 Edom Hill Rd., Cathedral City, Ca. 92234. All questions must be submitted in writing by 5:00 p.m. on Tuesday, September 1, 2015 to Rob Istik via email (ristik@co.riverside.ca.us) or fax at 951-247-1591.

General prevailing rate of per diem wages and general prevailing rate of per diem wages for holiday and overtime work, including employer payments for health and welfare, pension, vacation, apprentices and similar purposes for each craft, classification or type of workman needed for execution of contracts under the jurisdiction of the County have been obtained by the County from the Director of Industrial Relations of the State of California for the area where the work is to be done. These are on file at the County's office, and will be made available to any interested person upon request.

Contractors submitting proposals for this project shall have a Class A Contractors license from the State of California in order to be considered eligible for the contract award.

BIDDER QUALIFICATIONS:

A bidder must satisfy the following requirements to bid on this project:

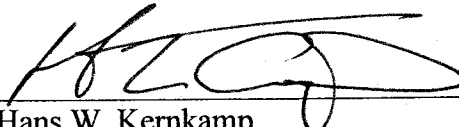
1. The Contractor and/or subcontractor shall have successfully completed an earthwork construction project with at least 10,000 CY of engineered fill including soil material processing, placement, compaction, and grading per plan.
2. The Contractor and/or subcontractor shall have successfully completed an earthwork construction project with at least 10,000 CY of excavation to line and grade.
3. The Contractor and/or subcontractor shall have successfully completed a construction project with at least 50 CY of reinforced shotcrete/concrete drainage structures.
4. The Contractor and/or subcontractor shall have successfully completed a construction project with at least 100,000 square feet of green waste and/or palm waste placement.

SUBMITTAL REQUIREMENTS:

With the submittal of the Proposal, the Contractor shall submit for approval by the County documented evidence of satisfaction of all of the Bidder Qualifications listed above, including the name and experience of the superintendent and senior personnel that will be responsible for earthwork and concrete placement. As part of this submittal, a project reference list shall be provided indicating at a minimum, the name, address, and phone number of the project owner and owner's representative, the location of the project, the amount of material installed, and completion date.

Dated: August 18, 2015

RIVERSIDE COUNTY
DEPARTMENT OF WASTE RESOURCES



Hans W. Kernkamp
General Manager - Chief Engineer

INSTRUCTIONS TO BIDDERS

QUANTITIES: The amount of work to be done or materials to be handled under the Contract as noted in the proposal are but estimates and are not to be taken as an expressed or implied statement that the actual amount of work or materials will correspond to the estimate. The County reserves the right to increase or decrease or to entirely eliminate certain items from the work or materials if found desirable or expedient. The Contractor will be allowed no claims for anticipated profits, loss of profits or for any damages of any sort because of any difference between the estimated and the actual amounts of work done, or materials furnished or used in the completed project. The Contractor is cautioned against unbalancing of his bid by including his overhead into one or two items only when there are a number of items on the schedule. The overhead and indirect charges should be prorated on all items in the schedule.

DISCREPANCIES AND OMISSIONS: Discrepancies, omissions, ambiguities, or requirements likely to cause disputes shall be immediately brought to the attention of the County. When appropriate, Addenda will be issued by the County. No communication by anyone as to such matters except by an Addendum affects the meaning or requirements of the Contract Documents. If at any time (before or after submittal of its bid) the Contractor is of the opinion that there is or may be a discrepancy or inconsistency in the plans, drawings, specifications or other Contract Documents, it shall immediately report this in writing to the County and shall not proceed with any related work until ordered so to do.

WITHDRAWAL OF PROPOSALS: Any proposal may be withdrawn at any time prior to the hour fixed in the Notice to Contractors for the opening of proposals, provided that a request in writing, executed by the bidder or his duly authorized representative, for the withdrawal of such proposal, is filed with the County. The withdrawal of a proposal shall not prejudice the right of a bidder to file a new proposal.

AGREEMENT OF FIGURES: If the unit prices and the total amounts named by the bidder in the proposal do not agree, the unit prices alone will be considered as representing the bidder's intention.

INVALID PROPOSALS: Proposals submitted by fax or telegraph and those which fail to reach the place fixed for opening of proposals prior to the date and hour set for opening same will not be considered.

INSPECTION OF SITE AND UNDERSTANDING OF CONTRACT PROVISIONS: Prior to submission of a bid, bidders must have examined the site and fully acquainted themselves with all conditions affecting the work. Information derived from maps, plans or specifications, or from the County will not relieve the successful bidder from properly carrying out all the terms of the contract. By the submittal of a proposal, the bidder will be held to have personally examined the site and the drawings, to have carefully read all of the specifications and other Contract Documents, and to have satisfied himself as to his ability to meet all the difficulties attending the execution of the work. The bidder agrees that if he is awarded the contract he will make no claim against the County based on ignorance or misunderstanding of the contract provisions; and that the bidder fully understands the payment method for the work.

QUALIFICATIONS OF BIDDERS: No proposal will be accepted from a Contractor who is not licensed under laws of California, as evidenced by the submittal of the Statement of

Licensure. No award will be made to any bidder who cannot give satisfactory assurance to the County as to his ability to carry out the contract, both from his financial standing and by reason of his previous experience as a Contractor on work of the nature contemplated in the contract.

VENDOR REGISTRATION: Contractors must be registered with the County in order to be considered eligible for the Contract award. To register, Contractors may utilize "Vendor Self-Registration" web site at <http://www.purchasing.co.riverside.ca.us> and complete the on-line registration form.

Information needed in order to register:

1. User name (This person will be responsible for original registration and any future change.)
2. User Password
3. Company information including:
 - a. All Addresses (Corporate, Remit to, Sales, etc)
 - b. Company type (Corporation, partnership, sole proprietorship, etc)
 - c. Tax Identification Number (or social security number for individuals)
 - d. Status (women, minority, Disabled Veteran owned, etc)
 - e. Qualification as a local Riverside County business
 - f. Banking Information for future electronic payment processes
4. Contact Information including:
 - a. Names
 - b. Titles/Positions
 - c. Contact Numbers (Phone, Fax, Cell phone, etc)
 - d. E-Mail address for future correspondences
5. List of items/services you wish to provide to the County.

PROPOSAL FORMS: Attention of all bidders is called to the proposal affidavit forms attached hereto and bidders are cautioned that all proposals submitted must be accompanied by the proper affidavit, properly executed. Proposals must be made on the form furnished by the County.

REJECTION OF PROPOSALS CONTAINING ALTERATIONS, ERASURES OR IRREGULARITIES: Proposals may be rejected if they show any alterations of form, additions not called for, conditional proposals, incomplete proposals, erasures, or irregularities of any kind. Erasures or interlineations in the proposal must be explained or noted over the signature of the bidder.

PUBLIC OPENING OF PROPOSALS: Proposals will be opened and read publicly at the time and place indicated in the Notice to Contractors. Bidders or their authorized agents are invited to be present.

DISQUALIFICATION OF BIDDERS: More than one proposal from an individual, a firm or partnership, a corporation or an association under the same or different names will not be considered. Reasonable ground for believing that any bidder is interested in more than one proposal for the work contemplated will cause the rejection of all proposals in which such bidder is interested. If there is any reason for believing that collusion exists among the bidders, none of the participants in such collusion will be considered in awarding the contract. Proposals in

which the prices appear to be unbalanced may be rejected.

ADDENDA: County reserves the right to issue Addenda to the Contract Documents at any time prior to the time set to open bids. Each potential bidder shall leave with the County its name, address, and fax number for the purpose of receiving Addenda. To be considered, a Contractor's proposal must list and take into account all issued Addenda.

AWARD OF CONTRACT: The County reserves the right to reject any and all proposals or to waive technical defects as the best interests of the County may require. Prior to award of the contract, and if requested by County, the Contractor agrees to meet with the County to review the details and calculations of the Contractor's proposal and the Contractor's understanding of any aspect of the work. The award of the Contract, if it be awarded, will be to the lowest responsible and qualified bidder based upon the total bid including all Optional Bid Items. The award, if made, will be made within approximately fourteen (14) to thirty (30) days after the opening of the proposals.

BIDDER'S CHECK OR BOND: Each proposal must be accompanied by a certified or cashier's check or by a bid bond only on the form supplied by the County, drawn in favor of the County in an amount not less than ten percent (10%) of the total bid. This check or bond shall be given as a guarantee that the bidder, if awarded the contract, will execute and deliver the Contract, the required Payment and Performance Bonds, and the required certificates of insurance in accordance with his bid accepted by the County. In default of execution of the Contract upon award and/or delivery of said Payment and Performance Bonds and certificates of insurance, such Bid Bond or check shall be held subject to payment to the County for the difference in money between the amount of the contract with another party to perform the work, together with the cost to the County of redrafting, redrawing and publishing documents and papers necessary to obtain new bids on said work. The check or bond shall, in addition, be held subject to all other actual damages suffered by the County. The check or bond will be returned upon the close of the period mentioned in these Instructions below and to the successful bidder upon execution of the Contract. **NO BONDS WILL BE ACCEPTED UNLESS SUBMITTED ON THE FORM SUPPLIED BY THE COUNTY.**

FORFEITURE FOR FAILURE TO POST SECURITY AND EXECUTE CONTRACT: In the event the bidder, to whom an award is made, fails or refuses to post the required bonds and provide the required certificates of insurance and fails to return executed copies of the Agreement within five (5) calendar days after the prescribed forms are presented to him for signature, the County may award the work to the next best bidder, or may call for new bids.

RETURN OF PROPOSAL GUARANTEES: Within ten (10) business days after the award of the contract, the County will return the proposal guarantees accompanying those proposals that are not considered in making the award. All other proposal guarantees will be held until the contract has been fully executed and the required bonds and certificates of insurance have been provided, after which they will be returned to the respective bidders whose proposal they accompany.

CONTRACT BONDS: The Contractor shall furnish two (2) surety bonds in duplicate, one as a security for the faithful performance of the contract in the amount equal to one hundred percent (100%) of the contract price, and one as security for the payment of all persons performing labor

and furnishing materials in connection with the contract in an amount equal to one hundred percent (100%) of the contract price. All bonds must be submitted on forms provided by the County. Bonds submitted in any other form will not be accepted. Should any surety on the Payment Bond or Performance Bond be deemed unsatisfactory by the County, Contractor shall upon notice promptly substitute new bonds satisfactory to the County. All bonds must be issued by sureties which are licensed by the State of California to issue such bonds.

SUBLETTING AND SUBCONTRACTING: Bidders are required, pursuant to the Subletting and Subcontracting Fair Practices Act (commencing with Section 4100 of the Public Contract Code), to list in their proposal the name and location of place of business of each subcontractor who will perform work or labor or render services in or about the construction of the work or improvement or a subcontractor who specially fabricates and installs a portion of the work or improvement, in excess of one-half ($\frac{1}{2}$) of one percent (1%) of the prime Contractor's total bid. Failure to list a subcontractor for a portion of the work means that the prime contractor will do that portion of the work.

“OR EQUAL”: Pursuant to Division 2, Chapter 3, Article 5, commencing at Section 3400 of the Public Contract Code, all specifications shall be deemed to include the words “or equal,” provided, however, that permissible exceptions shall be specifically noted in the specifications. Any “equal” proposed by the Contractor must be described in the Contractor’s Proposal.

ANTI-DISCRIMINATION: It is the policy of the County that in connection with all work performed under this Contract, there be no discrimination against any prospective or active employee engaged in the work because of race, color, ancestry, national origin, religious creed, sex, age, marital status, or sexual preference. The Contractor agrees to comply with applicable Federal and California laws including, but not limited to, the California Fair Employment Practice Act, beginning with Labor Code Section 1410, and Labor Code Section 1735. In addition, the Contractor agrees to require like compliance by any subcontractors employed on the work.

CONTRACTOR'S PROPOSAL

TO THE BOARD OF SUPERVISORS OF THE COUNTY OF RIVERSIDE:

The undersigned hereby declares:

- (a) That the only persons or parties interested in this proposal as principals are the following:

(If the Contractor is a corporation, give the name of the corporation and the name of its president, secretary, treasurer, and manager. If a co-partnership, give the name under which the co-partnership does business, and the names and addresses of all copartners. If an individual, state the name and address under which the contract is to be drawn.)

- (b) That this proposal is made without collusion with any other person, firm or corporation.
- (c) That he has carefully examined the location of the proposed work, and has familiarized himself with all of the physical, climatic or other conditions related to the work.
- (d) That he has carefully examined the attached specifications, plans, and other Contract Documents, and makes this proposal in accordance therewith.
- (e) That, if this proposal is accepted, he will enter into a written contract with the County of Riverside.
- (f) That he proposes to enter into such contract and to accept in full payment for the work actually done the prices stated in this proposal. It is understood that final payment will be based on actual quantities of material removed.

Accompanying this proposal is a certified or cashier's check or bid bond payable to the order of the County of Riverside in the sum of

_____ Dollars (\$_____)

THE REQUIRED REFERENCES AND OTHER REQUIRED DOCUMENTS MUST BE
ATTACHED TO THIS PROPOSAL

Contractor bids as follows for the 2015 Site Improvements Project located at various Riverside County Landfills:

Item No.	Item of Work	Unit	Quantity	Unit Cost	Sub-Total Cost
1	Earthwork – Bench Grading / Erosion Repair (Edom Hill)	LF	29,768		
2	Earthwork – Slope & Top Deck Erosion Repair (Edom Hill)	SF	126,076		
3a	Earthwork – Berm Install (Edom Hill)	LF	5,207		
3b	Earthwork – Berm Install (Beaumont)	LF	595		
4	Earthwork – Basin Excavation, Haul & Stockpile (Edom Hill)	LS	1		
5	Earthwork – Engineered Fill (Edom Hill)	LS	1		
6	Earthwork – Access Bench Re-Grading / Erosion Backfill (Edom Hill)	LS	1		
7	Concrete Drainage Structures (Beaumont)	SF	708		
8	Shotcrete Drainage Structures (Beaumont)	LF	877		
9	Masonry Splash Walls (Edom Hill)	LF	489		
10	Rip-Rap (Edom Hill)	LS	1		
11	Palm Waste Installation (Edom Hill)	LS	1		
12	Authorized Time & Materials	NA	NA	\$46,000	
Optional Bid Items - Awarded at County Discretion:					
13	Rock Boulder Relocation / Placement (Mead Valley)	LF	1,900		
14a	Green Waste - Spread, Relocate and Track-Walk (Mead Valley)	LS	1		
14b	Palm Waste – Spread, Relocate and Track-Walk (Coachella)	LS	1		
15	Compost Facility Basin Area Improvements: Eng Fill, CMP Clean-out & Shotcrete Drainage Structures (Edom Hill)	LS	1		

Total Cost \$

Contractor acknowledges receipt of Addenda No _____.

Name of Contractor: _____

Address: _____

Telephone: _____

Contractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Signature: _____

Name: _____

Title: _____

Dated: _____

LIST OF SUBCONTRACTORS

The name and the location of the place of business of each subcontractor who will perform work or labor or render service to the Prime Contractor in or about the construction of the work or improvement, or a subcontractor who specially fabricates and installs a portion of the work or improvement, in an amount in excess of one-half ($\frac{1}{2}$) of one percent (1%) of the Prime Contractor's total bid and the portion of the work which will be done by each such subcontractor is as follows:

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Subcontractor's License No. and Classification: _____

Department of Industrial Relations (DIR) Registration Number: _____

Phone and Fax Numbers _____

Address: _____

STATEMENT OF LICENSURE

Pursuant to California Public Contract Code (commencing with Section 3300), the undersigned does certify as follows:

1. That the pocket license/certificate of licensure I have presented to County as of this date is my own license, being State of California Contractors License No. _____;
2. That said Contractors License is current and valid; and
3. That said Contractors License is of a classification appropriate to the work to be undertaken for County, a Class _____ license.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Dated: _____ Signature: _____

Name: _____

Title: _____

AFFIDAVIT FOR INDIVIDUAL CONTRACTORS

STATE OF CALIFORNIA)

SS

COUNTY OF RIVERSIDE)

_____, being first duly sworn, deposes and says:

That he or she is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Department of Waste Resources or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Subscribed and sworn to before me

this ____ day of _____ 20____.

Signature of officer administering oath

**AFFIDAVIT FOR JOINT VENTURE OR COPARTNERSHIP
CONTRACTOR**

STATE OF CALIFORNIA)

SS

COUNTY OF RIVERSIDE)

_____, being first duly sworn, deposes and says:

That he or she is a member of the joint venture or co-partnership firm designated as

which is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Department of Waste Resources or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

That he has been and is duly vested with authority to make and sign instruments for the joint venture or co-partnership by

who constitute the other members of the joint venture or co-partnership.

Subscribed and sworn to before me

this ____ day of _____ 20 ____ .

Signature of officer administering oath

AFFIDAVIT FOR CORPORATE CONTRACTOR

STATE OF CALIFORNIA)

SS

COUNTY OF RIVERSIDE)

_____, being first duly sworn, deposes and says:

That he or she is _____

of _____

a corporation which is the party making the foregoing proposal or bid; that the bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the Riverside County Department of Waste Resources or anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

Subscribed and sworn to before me

this ____ day of _____ 20__

Signature of officer administering oath

BID BOND

Recitals:

1. _____ (Contractor) has submitted its Contractor's Proposal to the County of Riverside, by and for the Department of Waste Resources, for the construction of the public work known as the 2015 Site Improvements Project in accordance with a Notice to Contractors dated _____.
2. _____ a _____ corporation, hereafter called Surety, is the surety on this Bond.

Agreement: We, Contractor as principal and Surety as surety, jointly and severally agree and state as follows:

1. The amount of the obligation of this Bond is 10% of the amount of the Contractor's Proposal and inures to the benefit of County.
2. This Bond is exonerated by (1) County rejecting said Proposal or, in the alternate, (2) if said Proposal is accepted, Contractor executes the Agreement and furnishes the Bonds and certificates of insurance as agreed to in its Proposal, otherwise it remains in full force and effect for the recovery of loss, damage and expense of County resulting from failure of Contractor to act as agreed to in its Proposal.
3. Surety, for value received, stipulates and agrees that its obligations hereunder shall in no way be impaired or affected by any extension of time within which County may accept the Proposal and waives notice of any such extension.
4. This Bond is binding on our heirs, executors, administrators, successors and assigns.

Dated: _____

By: _____

By: _____

Title: _____
(Surety)

Title: _____
(Contractor)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledge by a notary (attach acknowledgments).

AGREEMENT

THIS AGREEMENT is made as of _____ and is between the COUNTY OF RIVERSIDE (County) and THE NAME OF THE LOWEST BIDDER GOES HERE_(Contractor).

IT IS AGREED BY THE PARTIES AS FOLLOWS:

1. The Work. Contractor shall furnish all tools, equipment, apparatus, facilities, labor and material necessary to perform the work for the project, the 2015 Site Improvements Project, in exact conformity with the Contract Documents, subject to such inspection as County deems appropriate.

2. Contract Documents. The Contract Documents for the project are:
 - (a) Notice to Contractors;
 - (b) Instructions To Bidders;
 - (c) Contractor's Proposal;
 - (d) Agreement;
 - (e) Bid Bond;
 - (f) Performance Bond;
 - (g) Payment Bond;
 - (h) General Provisions;
 - (i) Special Provisions;
 - (j) Appendix A – BMP Installation Details from the CASQA Stormwater BMP Handbook;
 - (k) Any other documents included in or incorporated into the Contract Documents or in the County's bid package;
 - (l) Addenda Nos. _____

Each of the above-mentioned documents presently in existence are by this reference incorporated into this Agreement and each of these documents not now in existence are incorporated herein as of the time of their issuance.

3. Contract Price - Payment. **Exhibit A** is attached to and incorporated into this Agreement and states the basis for full payment for this project. Contractor represents that it fully understands the payment method for the work.

RIVERSIDE COUNTY
DEPARTMENT OF WASTE RESOURCES
14310 Frederick Street
Moreno Valley, CA 92553

By: _____
Hans W. Kernkamp
General Manager - Chief Engineer

COUNTY OF RIVERSIDE

By: _____
Chairman, Board of Supervisors

ATTEST:

By: _____
Kecia Harper-Ihem, Clerk of the Board

By: _____
Deputy

(Seal)

Contractor

By: _____

Name: _____

Title: _____
(If corporation, attach corporate seal)

EXHIBIT A

(To Agreement for the Riverside County Department of Waste Resources Project, 2015 Site Improvements Project located at various Riverside County Landfills.)

It is understood that the quantities listed (except for those shown as "Lump Sum, [L.S]") are but estimates only and final payment will be based on actual quantities, whatever they may be, subject to such adjustments and alterations as elsewhere provided for in the Contract Documents.

Item No.	Item of Work	Unit	Quantity	Unit Cost	Sub-Total Cost
1	Earthwork – Bench Grading / Erosion Repair (Edom Hill)	LF	29,768		
2	Earthwork – Slope & Top Deck Erosion Repair (Edom Hill)	SF	126,076		
3a	Earthwork – Berm Install (Edom Hill)	LF	5,207		
3b	Earthwork – Berm Install (Beaumont)	LF	595		
4	Earthwork – Basin Excavation, Haul & Stockpile (Edom Hill)	LS	1		
5	Earthwork – Engineered Fill (Edom Hill)	LS	1		
6	Earthwork – Access Bench Re-Grading / Erosion Backfill (Edom Hill)	LS	1		
7	Concrete Drainage Structures (Beaumont)	SF	708		
8	Shotcrete Drainage Structures (Beaumont)	LF	877		
9	Masonry Splash Walls (Edom Hill)	LF	489		
10	Rip-Rap (Edom Hill)	LS	1		
11	Palm Waste Installation (Edom Hill)	LS	1		
12	Authorized Time & Materials	NA	NA	\$46,000	
Optional Bid Items - Awarded at County Discretion:					
13	Rock Boulder Relocation / Placement (Mead Valley)	LF	1,900		
14a	Green Waste - Spread, Relocate and Track-Walk (Mead Valley)	LS	1		
14b	Palm Waste – Spread, Relocate and Track-Walk (Coachella)	LS	1		
15	Compost Facility Basin Area Improvements: Eng Fill, CMP Clean-out & Shotcrete Drainage Structures (Edom Hill)	LS	1		

Total Cost \$

PERFORMANCE BOND

Recitals:

1. _____ (Contractor) has entered into an Agreement dated _____ with the COUNTY OF RIVERSIDE (County) for construction of the public work known as 2015 Site Improvements Project (Project).
2. _____, a corporation (Surety), is the surety under this Bond.

Agreement: We, Contractor as principal, and Surety as surety, jointly and severally agree, state, and are bound unto County, as obligee, as follows:

1. The amount of the obligation of this Bond is 100% of the estimated contract price for the Project of \$ _____ and inures to the benefit of the County.
2. This Bond is exonerated by Contractor doing all things to be kept and performed by it in strict conformance with the Contract Documents for the Project, otherwise it remains in full force and effect for the recovery of loss, damage and expense of County resulting from failure of Contractor to so act. All of said Contract Documents are incorporated herein.
3. This obligation is binding on our successors and assigns.
4. For value received, Surety stipulates and agrees that no change, time extension, prepayment to Contractor, alteration or addition to the terms and requirements of the Contract Documents or the work to be performed there under shall affect its obligations hereunder and waives notice as to such matters, except the total contract price cannot be increased by more than 25% without approval of Surety. (If the total contract price is inadvertently increased by more than 25% without approval of Surety, this performance bond will remain in effect for that portion of the contract existent prior to the 25% exceedance).

THIS BOND is executed as of _____.

By: _____

By: _____

Title: _____
(Surety)

Title: _____
(Contractor)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledge by a notary (attach acknowledgments).

PAYMENT BOND

(Public Work - Civil Code, Section 3247 et seq.)

The makers of this Bond are _____ as Principal and Original Contractor and _____ a corporation, authorized to issue surety bonds in California, as Surety, and this bond is issued in conjunction with that certain public works contract dated _____, between Principal and the COUNTY OF RIVERSIDE (County), a public entity, for \$ _____, the total amount payable. Said contract is for the public work generally consisting of the 2015 Site Improvements Project. The beneficiaries of this Bond are as is stated in Section 3248 of the Civil Code and Sections 3248, 3249, 3250 and 3252 of said Code. Without notice, Surety consents to extension of time for performance, change in requirements, amount of compensation, or prepayment under said contract.

Dated: _____

By: _____

By: _____

Title: _____
(Surety)

Title: _____
(Contractor)

NOTE: This Bond must be executed by both parties with corporate seal affixed. All signatures must be acknowledge by a notary (attach acknowledgments).

GENERAL PROVISIONS

FOR

CONSTRUCTION OF
2015 SITE IMPROVEMENTS

AT THE

CLOSED EDM HILL, BEAUMONT, MEAD
VALLEY AND COACHELLA
LANDFILLS

Prepared by:

RIVERSIDE COUNTY
DEPARTMENT OF WASTE RESOURCES

14310 Frederick Street
Moreno Valley, CA 92553

Table of Contents

1. DEFINITION OF TERMS.....	1-1
1.1. TERMS	1-1
1.2. SIMILARITY OF WORDS.....	1-2
2. SCOPE OF WORK.....	2-1
2.1. WORK TO BE DONE	2-1
2.2. CONSTRUCTION SCHEDULE.....	2-1
2.3. DRAWINGS AND SPECIFICATIONS ON THE WORK.....	2-1
2.4. ESTIMATE OF QUANTITIES.....	2-1
2.5. PROTESTS.....	2-1
2.6. ALTERATIONS	2-2
2.7. EXTRA WORK	2-2
2.7.1. <i>General</i>	2-2
2.7.2. <i>Procedure for Extra Work</i>	2-2
2.8. PAYMENT FOR EXTRA WORK	2-3
2.9. RIGHTS OF WAY	2-3
2.10. CLEANING UP	2-3
3. CONTROL OF THE WORK.....	3-1
3.1. AUTHORITY OF THE COUNTY	3-1
3.2. DETAIL DRAWINGS	3-1
3.3. CONFORMITY WITH PLANS AND ALL ALLOWABLE DEVIATIONS	3-1
3.4. INTERPRETATION OF PLANS AND SPECIFICATIONS	3-1
3.5. SUPERINTENDENCE	3-1
3.6. LINES AND GRADES.....	3-2
3.7. INSPECTION OF WORK	3-2
3.8. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK	3-2
3.9. EQUIPMENT AND PLANT	3-2
3.10. FINAL INSPECTION	3-3
4. CONTROL OF MATERIAL.....	4-1
4.1. COUNTY FURNISHED MATERIALS	4-1
4.2. SOURCE OF SUPPLY AND QUALITY OF MATERIALS	4-1
4.3. SAMPLES AND TESTS	4-1
4.4. STORAGE OF MATERIALS	4-2
4.5. DEFECTIVE MATERIALS	4-2
4.6. ASSIGNMENT OF CLAIMS.....	4-2
5. LEGAL RELATIONS AND RESPONSIBILITY	5-1
5.1. LAWS TO BE OBSERVED	5-1
5.1.1. <i>Compliance with Applicable Law</i>	5-1
5.1.2. <i>Labor Code</i>	5-1
5.1.3. <i>Equal Employment Opportunity</i>	5-1

5.1.4.	<i>Registration of Contractors</i>	5-3
5.1.5.	<i>Accident Prevention</i>	5-3
5.2.	CONTRACTOR'S RESPONSIBILITY	5-3
5.3.	CONTRACTOR'S RESPONSIBILITY FOR WORK	5-4
5.4.	PROPERTY RIGHTS IN MATERIALS	5-4
5.5.	PERMITS AND LICENSES	5-4
5.6.	ROYALTIES AND PATENTS	5-4
5.7.	SANITARY PROVISIONS	5-4
5.8.	PUBLIC SAFETY	5-4
5.9.	USE OF EXPLOSIVES	5-4
5.10.	PROVISIONS FOR EMERGENCIES	5-5
5.11.	UNFORESEEN DIFFICULTIES	5-5
5.12.	ACCESS TO THE WORK	5-5
5.13.	GUARANTEE OF WORK	5-6
5.14.	SURETY OF GUARANTEE	5-6
5.15.	DAMAGES BY ACT OF GOD	5-6
6.	PROSECUTION AND PROGRESS	6-1
6.1.	PROGRESS OF THE WORK	6-1
6.2.	OVERTIME WORK AND WORK AT NIGHT	6-1
6.3.	SUBCONTRACTING	6-1
6.4.	CHARACTER OF WORKMEN	6-2
6.5.	TEMPORARY SUSPENSION OF THE WORK	6-2
6.6.	TIME FOR COMPLETION AND LIQUIDATED DAMAGES	6-2
6.7.	DELAYS AND EXTENSION OF TIME	6-3
6.8.	ASSIGNMENT	6-3
6.9.	TERMINATION OF CONTRACT	6-3
7.	PAYMENT	7-1
7.1.	SCOPE OF PAYMENTS	7-1
7.1.1.	<i>Measurement and Computation of Quantities</i>	7-1
7.1.2.	<i>Payment at Contract Prices</i>	7-1
7.2.	PAYMENT AND COMPENSATION FOR ALTERED QUANTITIES	7-1
7.3.	FORCE ACCOUNT PAYMENT	7-1
7.3.1.	<i>Work Performed by Contractor</i>	7-1
7.3.1.1.	Labor	7-2
7.3.1.1.1.	<i>Actual Wages</i>	7-2
7.3.1.1.2.	<i>Labor Surcharge</i>	7-2
7.3.1.1.3.	<i>Subsistence and Travel Allowance</i>	7-2
7.3.1.2.	Materials	7-2
7.3.1.3.	Equipment Rental	7-3
7.3.1.3.1.	<i>Equipment on the Work</i>	7-4
7.3.1.3.2.	<i>Equipment not on the Work</i>	7-4
7.3.2.	<i>Work Performed by Special Forces or Other Special Services</i>	7-5
7.3.3.	Records	7-6
7.3.4.	Payment	7-7
7.4.	ACCEPTANCE	7-7
7.5.	PARTIAL PAYMENTS	7-7

7.6.	DELAYED PAYMENTS.....	7-7
7.7.	FINAL PAYMENT	7-8
7.8.	CLAIMS RESOLUTION.....	7-8
7.8.1.	<i>Submission of Claims</i>	7-8
7.8.1.1.	Claims Under \$50,000.00	7-8
7.8.1.2.	Claims over \$50,000.00 but less than or equal to \$375,000.00	7-9
7.8.2.	<i>Meet and Confer</i>	7-9
7.8.3.	<i>Filing of Claims</i>	7-9
7.8.4.	<i>Mediation and Judicial Arbitration</i>	7-9
7.8.5.	<i>Location for Filing of Claims, Jurisdiction</i>	7-9
8.	GENERAL.....	8-1
8.1.	COOPERATION BETWEEN CONTRACTORS.....	8-1
8.2.	HOLD HARMLESS / INDEMNIFICATION	8-1
8.3.	INSURANCE	8-2
8.3.1.	<i>Workers' Compensation:</i>	8-2
8.3.2.	<i>Commercial General Liability:</i>	8-2
8.3.3.	<i>Vehicle Liability:</i>	8-2
8.3.4.	<i>Environmental Impairment Insurance:</i>	8-2
8.3.5.	<i>General Insurance Provisions - All lines:</i>	8-3
8.4.	PUBLIC UTILITIES	8-4
8.5.	PROTECTION OF EXISTING STREET FACILITIES	8-5
8.6.	DIVERSION AND CONTROL OF WATER	8-5
8.7.	DUST ABATEMENT	8-5
8.8.	PROJECT SIGNS	8-5
8.9.	EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK	8-5
9.	WATERING.....	9-1
9.1.	DESCRIPTION	9-1
10.	PUBLIC CONVENIENCE, TRAFFIC CONTROL AND DETOURS	10-1
10.1.	GENERAL	10-1
10.2.	SIGNS.....	10-1
10.3.	MATERIALS STORAGE.....	10-1

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1. DEFINITION OF TERMS

1.1. TERMS

Whenever in these specifications, or in any documents or instruments where these specifications govern, the following terms or pronouns in place of them are used, the intent and meaning shall be interpreted as follows:

- a) **AGENCY:** Whenever used in the Standard Specifications shall refer to County.
- b) **BOARD OF SUPERVISORS:** The Board of Supervisors of the County, also sometimes referred to as the Board.
- c) **DEPARTMENT, COUNTY, OR OWNER:** The County of Riverside, by and for the Department of Waste Resources.
- d) **ENGINEER:** The General Manager - Chief Engineer of the Riverside County Department of Waste Resources, acting either directly or through properly authorized agents, such agents acting within the scope of the particular duties entrusted to them.
- e) **LABORATORY:** The laboratories authorized by the County to test materials and work involved in the contract.
- f) **BIDDER:** Any individual, firm or corporation submitting a proposal for the work contemplated, acting directly or through a duly authorized representative.
- g) **CONTRACTOR:** The person or persons, co-partnership or corporation, private or municipal, who have entered into the Agreement with the County, or his or their legal representatives.
- h) **SUPERINTENDENT:** The executive representative of the Contractor, present on the work at all times during progress, authorized to receive and execute instruction from the County.
- i) **PLANS or PROJECT DRAWINGS:** The official plans, profiles, typical cross sections, general cross sections, working drawings, and supplemental drawings, or exact reproductions thereof, approved by the County, which show the location, character, dimension and details of the work to be done, and which are to be considered a part of the Contract Documents.
- j) **SPECIFICATIONS:** The directions, provisions, and requirements contained in the Contract Documents as to the method and manner of performing the work or to the quantities and qualities of materials to be furnished under the contract.
- k) **CONTRACT:** The written Agreement covering the work.
- l) **CONTRACT PRICE:** Shall mean either the lump sum, unit price, or unit prices named in the Agreement, or the total of all payments under the contract at the lump sum, unit price, or unit prices, as the case may be.
- m) **SURETY OR SURETIES:** The bondsmen or party or parties, approved by the County, who may guarantee the fulfillment of the contract by bond, and whose signatures are attached to said bond.
- n) **RIGHT OF WAY:** The whole right of way which is reserved for and secured for use

in constructing the improvement.

- o) THE WORK: All the work specified in the Contract Documents.

1.2. SIMILARITY OF WORDS

Wherever in the specifications or upon the plans the words directed, required, permitted, ordered, designated, prescribed, or words of like import are used, it will be understood that the direction, requirements, permission, order, designation, or prescription of the County is intended, and similarly the words approved, acceptable, satisfactory, or works of like import, shall mean approved by, or acceptable to, or satisfactory to, the County, unless otherwise expressly stated.

2. SCOPE OF WORK

2.1. WORK TO BE DONE

The Contractor shall provide all labor, power, light, water, materials, equipment, tools, scaffolding, machinery, transportation, insurance, permits, bonds, temporary protection, watchmen, and superintendence necessary to construct and complete all work, and to furnish all materials included in the contract, except those furnished by the County as specifically stated in the Contract Documents.

The Contract Documents are complementary, and the work called for by any one shall be as binding as if called for by all.

2.2. CONSTRUCTION SCHEDULE

The Contractor shall submit to the County at least monthly, or at such times as may be requested by the County, a schedule which shall show the order and dates in which the Contractor proposes to carry on the various parts of the work, including estimated completion dates. The County's receipt of such schedule(s) shall not indicate any concurrence by the County in the items or dates described in the schedule(s).

2.3. DRAWINGS AND SPECIFICATIONS ON THE WORK

The Contractor shall keep one copy of all drawings and specifications on the work, in good order, available to the County and its representatives.

2.4. ESTIMATE OF QUANTITIES

It is understood that the quantities listed (except for those shown as "Final" or "Lump Sum") are but estimates only and final payment will be based on actual quantities for the work whatever they may be, subject to such adjustments and alterations as elsewhere provided for in the Contract Documents. The County is not to be held responsible for the accuracy of the estimate of quantities. The Contractor shall judge for himself, after considering all circumstances and conditions, the costs and quantities of materials involved in the work.

The Contractor shall not at any time assert that there was any misunderstanding in regard to the nature of the work or the kind or amount of materials to be furnished for the work. The Contractor shall not ask, demand, sue for, or seek to recover compensation in excess of the costs or charges for the work as stated in the Agreement.

2.5. PROTESTS

If the Contractor considers any work demanded of it to be outside of the requirements of the contract, the Contractor shall immediately and before the start of such work state this in writing to the County. In such writing, the Contractor shall clearly and in detail state the basis of its protest. Except for such protests as are made of record in the manner herein specified, the records, rulings, instruction, or decisions of the County shall be final and conclusive. Written protest by the Contractor shall not in any way relieve the Contractor from proceeding with the work as directed by the County.

2.6. ALTERATIONS

The Contractor agrees that reasonable alterations and modifications may be made by the County and that this may be done without notice to the sureties on the Contractor's bonds. If such changes result in increased or decreased quantities under the items specified in the Agreement, the Contractor will be paid on the basis of actual quantities as measured by the County; and such changes shall not affect the unit prices bid by the Contractor.

2.7. EXTRA WORK

2.7.1. General

The County reserves and shall have the right to revise the details of the contemplated work, or to add work of a different character or function, and have the Contractor perform such revised or added work as "Extra Work", when such extra work is considered by the County to be appurtenant to the satisfactory completion of the project. "Extra Work" is defined as added work of a different character or function and for which no basis for payment is prescribed; or that work which is indeterminate at the time of advertising and is specifically designated as extra work. The signing of the contract by the Contractor will be deemed to be an agreement on his part to perform extra work, as and when ordered by the County. If required extra work results in delay to the work, the Contractor will be given an appropriate extension of time.

The General Manager – Chief Engineer shall have the authority to approve changes or additions in the work in accordance with Public Contract Code 20142 without Board of Supervisors approval.

2.7.2. Procedure for Extra Work

Extra work may not be done by the Contractor without prior request and proper written approval by the County. Upon decision of the County to have extra work performed, the County will so inform the Contractor, acquainting it with the details of the new work. The Contractor shall thereupon present in writing a price for said work to the County, whose written approval shall be secured before work is started; except that the County may order the Contractor to proceed with extra work in advance of the submission of such prices provided that preliminary estimates show that the cost will not exceed \$1,000.

Prices for extra work shall be prepared by the Contractor on one or both of the following methods, as requested by the County, and submitted to the County for approval:

For a stated unit price or lump sum amount based upon current prevailing fair prices for materials, labor, plant, overhead and profit.

On a cost plus 15 percent basis (force account by the Contractor). The cost of all work done by the Contractor on a cost plus 15 percent basis will be computed in the manner described in Section 7, and the compensation thus provided shall be full payment to the Contractor related to the extra work.

Upon receipt of the Contractor's price, the County will make an analysis thereof and in its discretion adopt one of the following procedures:

Accept the Contractor's price for lump sum or unit price amount in the original or amended form and direct it to proceed with the work; or direct it to perform the work on a cost plus 15 percent basis.

Have the work performed by County's forces or by separate contract.

Direct the Contractor to proceed with the work and accept payment therefore in the amount as adjudicated later in a court of law.

The price agreed to by the Contractor for the extra work shall be full compensation to the Contractor for all labor, materials, equipment or other costs related to the extra work.

2.8. PAYMENT FOR EXTRA WORK

At the end of each month the Contractor shall make and deliver to the County a statement of the cost of the extra work completed during the current month, itemized and in a form satisfactory to the County. Payment for extra work shall be added to the monthly partial payment made in accordance with Section 7.5 of the General Provisions.

2.9. RIGHTS OF WAY

The County shall provide the rights of way as specifically described in the Contract Documents upon which the work under this contract is to be done, except that the Contractor shall provide land required for the erection of temporary construction facilities and storage of his material, together with right of access to same.

2.10. CLEANING UP

The Contractor shall, as directed by the County, remove from the County's right of way and from all public and private property, at its own expense, all temporary structures, rubbish and waste materials resulting from its operations.

3. CONTROL OF THE WORK

3.1. AUTHORITY OF THE COUNTY

The County shall have general supervision of the contract under authority of the Board of Supervisors. The County has the authority to stop the work whenever such stoppage may be necessary to ensure the proper execution of the contract. The County shall decide all questions which may arise as to the quality or acceptability of materials furnished, work performed, and rate or progress of the work; all questions which may arise as to the interpretation of the plans and specifications; all questions as to the acceptable fulfillment of the contract on the part of the Contractor; and all questions as to compensation. The County's determination and decision thereon shall be final and conclusive.

3.2. DETAIL DRAWINGS

The approved plans shall be supplemented by such working drawings as are necessary to control the work adequately. All authorized alterations affecting the requirement and information given on the approved plans shall be in writing. No changes shall be made to any plan or drawing after the same has been approved by the County, except by its written direction.

Approval by the County of the Contractor's working drawings (or other documents) does not relieve the Contractor of responsibility for accuracy of dimensions, details or other requirements of the Contract Documents. It is mutually agreed that the Contractor shall be responsible for agreement and conformity of his working drawings with the approved plans and specifications. Full compensation for furnishing all working drawings shall be considered as included in the prices paid for the various contract items of work, and no additional allowance will be made therefore.

3.3. CONFORMITY WITH PLANS AND ALL ALLOWABLE DEVIATIONS

Except as otherwise specifically stated in the Contract Documents, finished surfaces in all cases shall conform exactly with the elevations, lines, grades, cross-sections, and dimensions shown or described in the Contract Documents. Any deviations must be authorized in advance in writing by the County.

3.4. INTERPRETATION OF PLANS AND SPECIFICATIONS

Should it appear that the work to be done is not sufficiently detailed or explained in the Contract Documents, the Contractor must bring this to the County's attention in writing prior to submittal of the Contractor's Proposal.

In the event of any discrepancy between any drawings and the figures written thereon, the figures shall be taken as correct. The Contractor will not be allowed to take advantage of errors and omissions in the drawings and specifications. When errors or omissions are found, they shall immediately be brought to the attention of the other party in writing.

3.5. SUPERINTENDENCE

The Contractor shall keep on his work, continually during its progress, a competent Superintendent responsible for the construction of the work, as well as any necessary assistants. All such persons shall be acceptable to the County continuously throughout the duration of the

project. The Superintendent shall represent the Contractor in his absence and all directions given to him shall be as binding as if given to the Contractor.

3.6. LINES AND GRADES

The Contractor shall provide opportunities and facilities for setting points and making measurements as requested by the County or otherwise as reasonably required. The Contractor shall not proceed until it has made timely demand upon the County for, and has received from the County, such lines and grades as may be necessary as the work progresses. The work shall be done in strict conformity with such lines and grades.

The Contractor shall carefully preserve benchmarks, reference points and stakes, and 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 loss or disturbance.

3.7. INSPECTION OF WORK

The County and its representatives shall at all times have access to the work and shall be furnished with every reasonable opportunity for ascertaining that the materials and workmanship are in accordance with the requirements of the Contract Documents. All work done and all materials furnished shall be subject to the County's inspection and approval.

The inspection of the work by any County representatives shall not relieve the Contractor of any of its obligations to fulfill the requirements of the Contract Documents. Defective work or unsuitable materials may be rejected, notwithstanding that such work or materials may have been previously overlooked by County representatives, accepted, or estimated for payment.

3.8. REMOVAL OF DEFECTIVE AND UNAUTHORIZED WORK

All work which has been rejected shall be remedied or removed and replaced by the Contractor in an acceptable manner; and no compensation will be allowed for such removal or replacement. Any work done beyond the lines and grades as described by the Contract Documents, or any extra work done without proper written authority, will be considered as unauthorized and will not be paid for. Work so done may be ordered removed at the Contractor's expense. Upon failure on the part of the Contractor to comply, the County shall have authority to cause defective or unauthorized work to be remedied, or removed and replaced, and to deduct the costs for this work from any monies due or to become due the Contractor.

3.9. EQUIPMENT AND PLANT

Equipment not suitable to produce the quality of work required will not be permitted to operate on the project. Plants shall be designed and constructed in accordance with general practice for such equipment and shall be of sufficient material to carry the work to completion within the time limit. The Contractor shall provide adequate and suitable equipment and plant to meet these requirements and, when ordered by the County, shall immediately remove unsuitable equipment from the work and discontinue the operation of unsatisfactory plants. No worn or obsolete equipment shall be used, and in no case shall the maker's rating of the capacity for any equipment be exceeded. All vehicles used to haul materials over existing highways shall be equipped with pneumatic tires.

3.10. FINAL INSPECTION

The County will not make the final inspection until all the work provided for and contemplated by the contract has been fully completed and the final clean up has been performed.

4. CONTROL OF MATERIAL

4.1. COUNTY FURNISHED MATERIALS

The Contractor shall furnish all materials required to complete the work, except those specified in the Contract Documents to be furnished by the County. Any materials furnished by the County will be delivered to the Contractor at the points specified in the Contract Documents. The Contractor will be held responsible for all materials so delivered to him, and deductions will be made from any monies due Contractor to make good any shortages and deficiencies, from any cause whatsoever, which may occur after such delivery, or for any demurrage charges due to delinquency in unloading.

4.2. SOURCE OF SUPPLY AND QUALITY OF MATERIALS

At the option of the County the source of supply of any materials shall be approved by the County before the delivery is started. Only materials conforming to the exact requirements of the Contract Documents and approved by the County shall be used in the work. All materials proposed for use may be inspected or tested by the County at any time during their preparation and use. If it is found that sources of supply which have been approved do not furnish a uniform product, or if the product from any source proves unacceptable at any time, the Contractor shall furnish approved material from other approved sources. No material which, after approval, subsequently becomes unfit for use shall be used in the work.

Wherever the name, or brand, or manufacturer of an item is specified, it is used as a measure of quality and utility or a standard. Except in those instances where the product is designated to match others presently in use, or as otherwise stated in the Contract Documents, specifications calling for a designated material, product, thing or service by specific brand or trade name shall be deemed to be followed by the words "or equal" so that the Contractor may propose in the Contractor's bid any equal material, product, thing or service. If the Contractor desires to use any other brand or manufacturer of equal quality or utility to that specified, he shall list definite particulars of that which it considers equivalent to the specified item in its bid. The County will then determine whether or not the proposed name brand or article is equal in quality and utility to that specified, and the County's determination in that regard shall be final and binding upon the Contractor.

4.3. SAMPLES AND TESTS

All tests of materials furnished by the Contractor shall be made by the County in accordance with commonly recognized standards of national organizations for this type of landfill project, and such special methods and tests as are in use at the County's approved laboratory or otherwise determined by the County to be needed. The County shall determine what testing is needed.

Field tests of materials will be made by the County or its representative when deemed necessary as determined by the County; and these tests shall be made in accordance with standard practices of the County or as otherwise needed.

The Contractor shall furnish samples of all materials as requested by the County without charge. No material shall be used until it has been approved by the County. Samples will be secured and tested whenever necessary as determined by the County to determine the quality of the material.

Promptly after the approval of the contract, the Contractor shall notify the County of the proposed sources of supply of all materials to be furnished by it, using a form which will be supplied by the County upon request.

Whenever reference is made to standard tests or requirements of the County, the American Society for Testing Materials, the American Railway Engineering Association or the American Association of State Highway Officials, the reference shall be construed to mean the standards that are in effect at the date the Agreement is signed with subsequent amendments, changes, or additions as thereafter adopted and published by the organization referred to.

None of the provisions stated in this section shall relieve the Contractor of its obligations as stated elsewhere in the Contract Documents.

4.4. STORAGE OF MATERIALS

Materials shall be so stored as to ensure the preservation of their quality and fitness for the work. When considered necessary by the County, they shall be placed on wooden platforms or other hard, clean surfaces and not on the ground. They shall be placed under cover when so directed by the County. Stored materials shall be so located as to facilitate prompt inspection.

4.5. DEFECTIVE MATERIALS

All materials not conforming to the exact requirements of the Contract Documents shall be considered as defective; and all such materials, whether in place or not, shall be rejected and shall be removed immediately from the site of the work. No rejected materials, the defects of which have been subsequently corrected, shall be used until approval in writing has been given by the County. Upon failure on the part of the Contractor to comply forthwith with any order of the County made under the provisions of this article, the County shall have authority to remove and replace defective material and to deduct the cost of removal and replacement from any monies due or to become due the Contractor.

4.6. ASSIGNMENT OF CLAIMS

In submitting a bid on this public works project, or any subcontractor agreeing to supply goods, services, or materials, and entering a contract pursuant thereto, the Contractor and/or subcontractors do offer and agree to assign to the County all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 (commencing with Section 16700) of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the Contractor, without further acknowledgment by the parties.

5. LEGAL RELATIONS AND RESPONSIBILITY

5.1. LAWS TO BE OBSERVED

5.1.1. Compliance with Applicable Law

Reference to and/or incorporation into the Contract Documents of a particular law, statute, ordinance, rule or regulation is not, nor is it intended to be, a definitive statement of the law applicable to the Contract Documents and the accomplishment of the work. Contractor must keep informed as to all such applicable laws - Federal, State, County, Municipal - as they affect the conduct of the work and comply with such law, including, but not limited to, having requisite licenses, obtaining necessary permits, paying necessary fees and taxes, posting notices and installing, operating and maintaining safety precautions and facilities. It is likewise Contractor's responsibility to see to it that its subcontractors also fully comply with such applicable laws. Contractor shall protect and defend County, its officers, agents, employees and contractors against any claim or liability arising from or based upon any alleged violation of such applicable law.

5.1.2. Labor Code

The Contractor shall comply with all applicable requirements of the California Labor Code including but not limited to Labor Code, Chapter 2, Subchapter 1, Article 10, Required Apprentices on Public Works Contracts. Reference is made to Chapter 1, Part 7, Division 2 of the California Labor Code (commencing with Section 1720). By this reference said Chapter 1 is incorporated herein with like effect as if it were here set forth in full. The parties recognize that said Chapter 1 deals with, among other things, discrimination, penalties and forfeitures, their disposition and enforcement, wages, working hours and securing workers' compensation insurance and directly affect the method of prosecution of the work by Contractor and subject it under certain conditions to penalties and forfeitures. Execution of the Agreement by the parties constitutes their agreement to abide by said Chapter 1. Their stipulation as to all matters which they are required to stipulate to by the provisions of said Chapter 1, constitutes Contractor's certification that he is aware of the provisions of said Chapter 1 and will comply with them and further constitutes Contractor's certification as follows: "I am aware of the provisions of Section 3700 of the California Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that Code, and I will comply with such provisions before commencing the performance of the work of this contract." Contractor and his subcontractors shall comply with the provisions of the Labor Code regarding apprentices. Contractor shall post at each job site during the course of the work a copy of County's "Determination of Prevailing Wage Rate". Copies of this Determination are available from County for this purpose.

5.1.3. Equal Employment Opportunity

The Contractor shall comply with all applicable non-discrimination and equal employment laws. The Contractor shall not discriminate in his recruiting, hiring, promotion, demotion or termination practices on the basis of race, religious creed, color, national origin, ancestry, sex, age or physical handicap in the performance of this contract

and shall comply with the provisions of the California Fair Employment Practice Act (commencing with S1410 of the Labor Code), the Federal Civil Rights Act of 1964 (P.L. 88-352) and all amendments thereto, Executive Order No. 11246 (30 Federal Register 12319), as amended, and all administrative rules and regulations issued pursuant to said Acts and Order. See particularly 41 Code of Federal Regulation (CFR) Chapter 60.

Contractor shall require each of its subcontractors to comply with the preceding paragraph and shall include in each subcontract language similar to the preceding paragraph.

Contractor shall permit access to its records of employment, employment advertisement, application forms and other pertinent data and records (including but not limited to certified payroll information) by County and any state or federal agency having jurisdiction for the purpose of investigation to ascertain compliance with this Section. Notwithstanding, Contractor shall submit certified payroll to the County every 14 calendar days.

County may assign an affirmative action representative to monitor Contractor and his subcontractor(s) conduct required by this section, including the right of entry to the construction site for the purpose of obtaining information from persons performing work on the project providing such inspection does not interfere with the progress of the work.

Elsewhere in the Contract Documents more specific requirements may be contained covering the same subject matter of this Section. If so, such more specific requirements prevail over this section in case of conflict.

Transactions of \$10,000 or under - Contracts and subcontracts not exceeding \$10,000 are exempt from the requirements of this section. No Contractor or subcontractor shall procure supplies and/or services in less than usual quantities to avoid applicability of this section. With respect to contract and subcontracts for indefinite quantities, this section applies unless the amount required in any one year under such contract will reasonably be expected not to exceed \$10,000.

Transactions in Excess of \$10,000, but less than \$50,000 - At County's request, Contractor shall certify that he has in effect an affirmative action plan and agrees to comply with all state and federal laws and regulations regarding Fair Employment Practices. Contractor shall maintain a written copy of his affirmative action plan and furnish County a copy of the Plan upon request. County may require Contractor to complete an Affirmative Action Compliance Report, on a form furnished by County, setting forth definite goals during the term of this contract.

Transactions of \$50,000 or more - If Contractor has 50 or more employees and a contract for \$50,000 or more, he shall develop and submit to County within 30 days after award, a written affirmative action compliance program providing in detail specific steps to guarantee equal employment opportunity. Contractor shall include in his affirmative action program a table of job classifications, which table shall include but need not be limited to job titles, duties and rates of pay.

Contractor shall in each subcontract let to do a portion of the work covered hereunder, where the subcontractor involved has 50 or more employees and the subcontract is for \$50,000 or more, impose in the subcontract the above requirements.

For the purpose of determining the number of employees, the average of the Contractor's or his subcontractor's employees from the 12 month period immediately prior to award, or the total number of employees contractor or its subcontractor will have when performing this contract, whichever is higher, shall be used.

Federally Assisted Construction - If this project is a federally assisted construction project, then the contract provisions contained 41 CFR S60-1.4(b) are incorporated herein and Contractor shall likewise incorporate said provisions in each subcontract entered into by Contractor to perform the work. Federally assisted construction is identified as such in the Notice Inviting Bids.

5.1.4. Registration of Contractors

In order to be considered, a prospective bidder must be licensed in accordance with Division 3, Chapter 9 (commencing with Section 7000) of the Business and Professions Code.

5.1.5. Accident Prevention

Particular attention shall be given to relevant Division of Industrial Safety Construction and Electrical Safety Orders. Said Orders are contained in Title 8 of the California Code of Regulations, Chapter 4, Subchapters 4 and 5. Specific attention shall be taken of the California Occupational Safety and Health Act of 1973 (commencing with Section 6300 of the Labor Code) and the Federal Occupational Safety and Health Act of 1970 (P.L. 91-596) and rules and regulations issued pursuant to said Acts. Specific reference is made to Article 6 of said Construction Safety Orders. Contractor shall submit to County, in advance of excavation a detailed plan showing the design of shoring, bracing, sloping of the sides of trenches, or other provisions to be made for protection of personnel during earthwork operations. In event the Contractor's plan does not conform to the shoring system requirement of Article 6, the contractor's proposed shoring design shall be prepared and signed by a civil or structural engineer registered in the State of California. The Contractor shall also impose these requirements on all subcontractors involved and enforce compliance therewith. The duties here set forth are nondelegable by Contractor.

5.2. CONTRACTOR'S RESPONSIBILITY

Contractor is under the absolute duty in fulfilling his contractual obligations hereunder to proceed, and cause his subcontractors to proceed, in a safe, workmanlike manner, with adequate safeguards for the protection of the public, the workmen and persons from time to time inspecting the work. If at any time Contractor finds any of his subcontractors are allowing work to proceed in an unsafe manner or contrary to the terms of the Contract Documents, Contractor shall immediately cause such action to stop and immediately take all action necessary to protect workmen, inspectors and the general public and cause the work to proceed in a safe manner or in accordance with the terms of the Contract Documents.

5.3. CONTRACTOR'S RESPONSIBILITY FOR WORK

Until the formal final acceptance of the completed work by the County, the Contractor shall have the charge and care of the work and shall bear the risk of injury or damage to any part of the work by the action of the weather or from any other cause, whether or not arising from the execution of the work. The Contractor shall rebuild, repair, restore, and make good all injuries or damages to any portion of the work.

5.4. PROPERTY RIGHTS IN MATERIALS

Nothing in the contract shall be construed as vesting in the Contractor any right of property in the materials used after they have been attached or affixed to the work or the soil. All such materials shall become the property of the County upon being so attached or affixed.

5.5. PERMITS AND LICENSES

The Contractor shall procure all permits and licenses (including but not limited to: National Pollution Discharge Elimination System (NPDES) and South Coast Air Quality Management District (AQMD) permit requirements), pay all charges and fees, and give all notices necessary and incident to prosecution of the work.

5.6. ROYALTIES AND PATENTS

The Contractor shall assume all costs arising from the use of patented materials, equipment, devices, or processes used on or incorporated in the work, and agrees to indemnify and save harmless the County and its duly authorized representatives, from all suits at law, or actions of every nature for, or on account of, the use of any patented materials, equipment, devices, or processes.

5.7. SANITARY PROVISIONS

Necessary conveniences, properly secluded from public observation, shall be provided by the Contractor where needed for the use of laborers on the work. Their location, construction and maintenance shall be subject to the approval of the County. The Contractor shall obey and enforce such sanitary regulations as may be prescribed by the State Department of Health or other authorities having jurisdiction.

5.8. PUBLIC SAFETY

The Contractor at its own expense shall furnish, erect, and maintain such fences, barriers, lights, and signs as are necessary to give adequate warning to the public at all times that the work is under construction; and the Contractor shall erect such warning and directional signs and employ such flagmen as are required and shall maintain same throughout the construction period. Full compensation for the work involved in carrying out the precautionary measures above specified shall be considered as included in the prices paid for the various contract items of work and no additional payment will be made therefore.

5.9. USE OF EXPLOSIVES

When the use of explosives is necessary for the prosecution of the work, the Contractor shall use the utmost care not to endanger life or property. All explosives shall be stored in accordance with the provisions of Division II Part I, Chapter 3, of the Health and Safety Code of the State of California and other applicable laws or regulations.

5.10. PROVISIONS FOR EMERGENCIES

Unusual conditions may arise on the work which will require that immediate and unusual provisions be made to protect the public from danger or loss or damage to life or property, and it is part of the service required of the Contractor to make such provisions and to furnish such protection.

The Contractor shall use such foresight and shall take such steps and precautions as its operations make necessary to protect the public from danger or damage, or loss of life or property.

Whenever work is undertaken pursuant to this Section, Contractor shall promptly file with County a verified report setting forth the nature of the emergency and the action taken by the Contractor by reason of the emergency.

Whenever, in the opinion of the County, an emergency exists against which the Contractor has not taken sufficient precaution for the safety of the public or the protection of utilities or of adjacent structures or property which may be injured or damaged because of the Contractor's work; and, in the opinion of the County, immediate action shall be considered necessary in order to protect public or private, personal or real property interests, or prevent likely loss of human life or damage; then the County may provide suitable protection to said interests by causing such work to be done and material to be furnished as, in the opinion of the County, may seem reasonable and necessary. The cost and expense of all such emergency work shall be borne by the Contractor, and if he shall not pay said cost and expense upon presentation of the bills therefore, duly certified by the County, then said cost and expense will be paid by the County and shall thereafter be deducted from any amounts due or which may become due said Contractor. Failure of the County, however, to take such precautionary measures, shall not relieve the Contractor of its full responsibility for public safety.

5.11. UNFORESEEN DIFFICULTIES

The risk of all loss or damage, except as noted in Section 8.4, arising out of the work, or from any unforeseen obstructions or difficulties which may be encountered during the progress of the work, or from the action of the weather, or from encumbrances in the line of work, shall be the responsibility of the Contractor.

5.12. ACCESS TO THE WORK

Unless provided for in the Special Provisions, access to the work from existing roads shall be provided by the Contractor at its expense and maintained in a manner so as not to create a public nuisance. The County assumes no responsibility for the condition or maintenance of any existing road or structure thereon that may be used by the Contractor for performing the work or for traveling to and from the site of the work. No additional payment will be made to the Contractor for constructing any temporary road used for construction operations or for improving, repairing, or maintaining any existing road or structure thereon that may be used by the Contractor for performance of the work under these specifications. The cost of all work described in this paragraph shall be included in the prices bid in the schedule for other items of construction work.

5.13. GUARANTEE OF WORK

All work shall be guaranteed by Contractor for a period of two (2) years from the recordation of the Notice of Completion against any defects, including but not limited to those resulting from the use of inferior materials, equipment, or workmanship. Upon notice from County, Contractor shall promptly remedy such defects at its expense, including payment to County of its expenses in connection with such defects; otherwise County shall proceed to remedy such defects and Contractor shall reimburse County for its expenses.

This guarantee is in addition to any specific guarantee(s) provided for elsewhere in the Contract Documents or provided by manufacturers or suppliers.

5.14. SURETY OF GUARANTEE

The performance of guarantee and conditions specified in Section 5.13., shall be secured by a surety bond which shall be delivered by the Contractor to the County prior to the date on which final payment is made to the Contractor. Said bond shall be in an approved form and executed by a surety company or companies satisfactory to the County, in the amount of 10 percent of the final contract price. Said bond shall remain in force for the duration of the guarantee period specified in Section 5.13. Instead of providing such a bond as described above, the Contractor may, at its option, provide for the performance bond furnished under the contract to remain in force for said amount until the expiration of said guarantee period; and the amount of said performance bond may be reduced to 10 percent of the final contract price beginning at the time of recordation of the Notice of Completion.

5.15. DAMAGES BY ACT OF GOD

If the construction of the project herein is damaged, which damage is determined to have been proximately caused by an act of God, in excess of 5% of the contract amount, provided that the work damaged is built in accordance with applicable building standards and the plans and specifications, then the County may, without prejudice to any other right or remedy, terminate the contract.

6. PROSECUTION AND PROGRESS

6.1. PROGRESS OF THE WORK

The Contractor shall begin the work within ten (10) calendar days after the date of receipt by Contractor of notice to proceed from the County and shall diligently and continuously prosecute the same to completion within the time limit provided in the Special Provisions.

6.2. OVERTIME WORK AND WORK AT NIGHT

The Contractor shall conduct the work on a five (5) day, forty (40) hour work week with no work on legal holidays (as further described in the Special Provisions). If the Contractor feels it is necessary to work more than the normal 40 hour work week, he will make a written request for permission from the County, outlining the reasons for such request. The decision of granting permission for overtime work shall be in the sole discretion of the County; and the decision of the County shall be final. If granted, a condition will be imposed requiring the Contractor to pay the County the cost incurred at overtime rates for additional inspection and engineering time required in connection with the overtime work.

When any work is performed at night, only such classes of work shall be done as can be properly inspected. Adequate light must be provided for the safety of the workers and for proper inspection.

6.3. SUBCONTRACTING

Reference is made to the Subletting and Subcontracting Fair Practice Act contained in the California Public Contract Code (commencing with Section 4100). By this reference, said Act is incorporated herein with like effect as if it were here set forth in full and the parties shall abide by its terms and substitution shall be only as allowed by that Act. County reserves the right to approve all subcontractors whether or not they are required to be listed in the Contractor's Proposal.

Contractor shall be responsible for the acts and omissions of its subcontractors and shall make certain that at all times its subcontractors comply with the terms of the Contract Documents and applicable law. Where a portion of the work which has been subcontracted by the Contractor is not being prosecuted in a manner satisfactory to the County, the subcontractor shall be removed immediately on the request of the County and shall not again be employed on the work.

The Contractor shall give its personal attention to the fulfillment of the contract and shall keep the work under its control. The Contractor shall perform with its own organization work of a value amounting to not less than 50 percent of the remainder obtained by subtracting from the total original contract value the sum of any item designated herein or in the Special Provisions as Specialty Items. The furnishing and placing of reinforcing steel, when placing is performed by the supplier, will be considered as a Specialty Item for this purpose; however, he shall be designated in the list of subcontractors. The value of the work subcontracted will be based on the contract item bid price, if any subdivision of a contract unit is subcontracted, the entire unit shall be considered as subcontracted.

6.4. CHARACTER OF WORKMEN

If any subcontractor or person employed by the Contractor shall fail or refuse to carry out the directions of the County or shall appear to the County to be incompetent or to act in a disorderly or improper manner, he/she shall be discharged immediately upon the request of the County and such person shall not again be employed on this work.

6.5. TEMPORARY SUSPENSION OF THE WORK

The County shall have the authority to suspend the work wholly or in part, for such period as the County may deem necessary, due to unsuitable weather, or to such other conditions as are considered unfavorable for the suitable prosecution of the work, or for such time as the County may deem necessary due to the failure on the part of the Contractor to properly perform the work. The Contractor shall immediately comply with the order of the County to suspend the work wholly or in part. The work shall be resumed when conditions are favorable or methods are corrected, as ordered or approved by the County.

6.6. TIME FOR COMPLETION AND LIQUIDATED DAMAGES

The Contractor shall complete the work called for under the contract in all parts and requirements within the number of working days specified in the Special Provisions. Liquidated damages shall apply as stated in the Special Provisions.

A working day is hereby defined as any day (except Saturdays, Sundays, legal holidays, and days on which the Contractor is specifically required by the Special Provisions to suspend construction operations) on which the Contractor is not prevented by inclement weather or resulting conditions from proceeding with at least 60 percent of the normal labor and equipment force engaged in the controlling operation or operations for at least five hours.

The County will furnish the Contractor a weekly statement showing the number of working days charged to the contract for the preceding week, the number of working days specified for completion of the contract, and the number of working days remaining to complete the contract. The Contractor will be allowed one week in which to file a written protest setting forth in what respects the weekly statement is incorrect, otherwise the statement shall be deemed to have been accepted by the Contractor as correct.

The following holidays will be considered as legal holidays: New Year's Day; Martin Luther King Jr. Birthday, Lincoln's Birthday; Washington's Birthday (observed); Memorial Day; Independence Day; Labor Day; Columbus Day; Veteran's Day; Thanksgiving Day; day after Thanksgiving; Christmas; and such other days as are declared County holidays by ordinance passed by the Board of Supervisors. Please refer to specific holiday dates listed in the Special Provisions.

Contractor acknowledges that failure to perform in strict accordance with the Contract Documents and within the time limits specified in the Special Provisions will cause County to suffer special damages in addition to cost of completion of the work in accordance with the provisions of the Contract Documents. Such special damage could include, but is not limited to, lease and rental cost, additional salaries and overhead, interest during construction, attorney expense, additional engineering, inspection expense, cost of maintaining or constructing alternate

facilities, and injury to the property of the County or others. Such special damage could also include penalties assessed against the County by other governmental agencies for failure to have the project completed in a timely manner or as required by law. The County may withhold from any money due or that may become due the Contractor under the contract such amount as the County may elect to offset the damages incurred. Any withholding or failure to withhold shall not in any way limit recovery for damages actually incurred.

It is further agreed that in case the work called for under the contract is not finished and completed in all parts and requirements within the time specified, the County (in its sole discretion) shall have the right to extend the time for completion or not. If the County decides to extend the time limit for the completion of the contract, the County shall further have the right to charge to the Contractor and to deduct from the Contractor's payment all or any part of the actual cost of engineering, inspection, superintendence, and other related expenses caused by the Contractor's failure to complete the project as required. Liquidated damages shall apply as stated in the Special Provisions.

6.7. DELAYS AND EXTENSION OF TIME

If delays are caused by unforeseen causes beyond the control of either the Contractor or the County, such as war, strikes, fire, floods, or other action of the elements, such delays will entitle the Contractor to an equivalent extension of time for the completion of the contract but not damages or additional payments over the contract price. Furthermore, if the Contractor suffers any delay caused by the failure of the County to furnish the necessary right of way or materials agreed to be furnished by it, or by failure to supply necessary plans or instructions concerning the work to be done after written request therefore has been made, the Contractor shall be entitled to an extension of time equivalent to the time lost for any of the above-mentioned reasons but shall not be entitled to any damages for such delay.

6.8. ASSIGNMENT

The contract may be assigned only upon prior written consent of the County. Such written consent to sublet, assign or otherwise dispose of any portion of the contract, shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract.

6.9. TERMINATION OF CONTRACT

If the Contractor fails to begin delivery of material and equipment or to commence work within the time specified herein, or to maintain the rates of delivery of materials, or to execute the work in the proper manner, written notice by the County may be served upon the Contractor demanding compliance with the contract. If the Contractor refuses or neglects to comply with such notice within five (5) working days after receipt of the notice, then the County may take possession of the work, together with all material and equipment thereon, and may complete the work itself in the manner the County determines to be appropriate. The cost of the completion of

the work shall be charged against the Contractor and its surety and may be deducted from any money due to the Contractor; and if the sums due under the contract are insufficient, the Contractor and/or its surety shall pay to the County within five (5) working days after the completion of the work all of such cost in excess of the contract price.

7. PAYMENT

7.1. SCOPE OF PAYMENTS

The compensation described in the Agreement shall be complete and full payment to the Contractor for furnishing all materials, labor, tools, equipment and related items necessary to complete the work; and for all obligations imposed upon the Contractor pursuant to the Contract Documents. 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.

7.1.1. Measurement and Computation of Quantities

Unless otherwise stated, all items of the work to be paid for at a contract price per unit of measurement will be measured by the County 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 will be determined by the County.

The weights of metalwork, and other metal parts to be paid for by weight will be determined by the County 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.

7.1.2. 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 Contract Documents.

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

7.2. PAYMENT AND COMPENSATION FOR ALTERED QUANTITIES

When alterations in plans or quantities of work are ordered and performed, the Contractor agrees to accept payment in full at the contract unit price for the actual quantities of work done; and no additional payment will be made for anticipated profits.

7.3. FORCE ACCOUNT PAYMENT

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

7.3.1. 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 7.3.2. Only materials incorporated in the work will be paid for.

To the total computed as provided in Section 7.3.1.1, 7.3.1.2 and 7.3.1.3 will be added the following percentages:

Labor -- 24 percent
Materials -- 15 percent
Equipment Rental -- 15 percent

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 County for such work and no additional payment therefore will be made by the County.

7.3.1.1. Labor

The Contractor will be paid the cost of labor for the workmen (including foremen when authorized by the County), 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:

7.3.1.1.1. Actual Wages

The actual wages paid shall include any employer payments to or on behalf of the workmen for health and welfare, pension, vacation, and similar purposes.

7.3.1.1.2. Labor Surcharge

To the actual wages as defined in Section 7.3.1.1.1., will be added a labor surcharge set forth in the Special Provisions Section 1.24, 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 7.3.1.1.1 and subsistence and travel allowance as specified in Section 7.3.1.1.3.

7.3.1.1.3. Subsistence and Travel Allowance

Subsistence and travel allowance paid to such workmen as required by collective bargaining agreements.

7.3.1.2. 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:

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

- (b) 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 County. No markup except for actual costs incurred in the handling of such materials will be permitted.
- (c) If the materials are obtained from a supply or source owned wholly or in part by the purchaser, payment therefore 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.
- (d) If the cost of such materials is, in the opinion of the County, 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 7.3.1.2(a).
- (e) 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 7.3.1.2(d).

The County 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.

7.3.1.3. Equipment Rental

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 County to use equipment not listed in the Special Provisions, a suitable rental rate for such equipment will be established by the County. The Contractor may furnish any cost data which might assist the County 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 of rented equipment will be paid for as provided under Section 7.3.1.1

All equipment shall, in the opinion of the County, 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 therefore.

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.

7.3.1.3.1. 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.

7.3.1.3.2. 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 7.3.1.3 and for the cost of transporting the equipment to the location of the work and its return to its original locations, all in accordance with the following provisions:

- (i) The original location of the equipment to be hauled to the location of the work shall be agreed to by the County in advance.
- (ii) The County will pay the costs of loading and unloading such equipment.
- (iii) The cost of transporting equipment on low bed trailers shall not exceed the hourly rates charged by established haulers.
- (iv) The cost of transporting equipment shall not exceed the applicable minimum established rates of the Public Utilities Commission.
- (v) 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 County 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:

Hours In	Hours to be Paid
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	7.75
8	8
Over 8	Hours in operation

When hourly rates are listed, less than 30 minutes of operation shall be considered to be ½ hour of operation.

When daily rates are listed, payment for ½ 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.

- (i) Should the Contractor desire the return of the equipment to a location other than its original location, the County 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.
- (ii) 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.

7.3.2. Work Performed by Special Forces or Other Special Services

When the County and the Contractor, by advance 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 County for any cash or trade discount offered or available, whether or not such discount may have been taken, will be added 15 percent in lieu of the percentages provided in Section 7.3.1.

7.3.3. Records

The Contractor shall maintain his records in such 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 County (on a form provided by the County) 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 costs of labor and the charges for equipment rental, whether furnished by the Contractor, subcontractor, or other forces, except for charges described in Section 7.3.2. 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.

Materials 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 County 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 or the work, less any discounts provided in Section 7.3.1.2 (a).

Daily report sheets shall be signed by the Contractor or its authorized agent.

The County will compare its 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 County. 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 County, 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 County 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.

7.3.4. Payment

Payment as provided above in Sections 7.3.1 and 7.3.2 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 therefore.

7.4. ACCEPTANCE

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

7.5. PARTIAL PAYMENTS

On or about the last day of each month, the County 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 County shall retain 10 percent (10%) of such estimated value of the work or partial payment for the fulfillment of the contract by the Contractor. The County may reduce the retention from 10% to 5% if, the project is more than 50% completed, no stop notices have been received, the project is proceeding as scheduled, and the County has accepted the work.

After deducting all previous payments and all sums to be kept or retained under the provisions of the contract or applicable law, the County 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 County, the work is not proceeding properly. No payment shall be required to be made by the County unless and until all required submittals have been delivered to the County, including but not limited to the following: certified payroll information at a frequency specified in the Section 5.1.3, Construction schedule updates as listed in Section 2.2, and National Pollution Discharge and Elimination System permit requirements and frequencies as stated in the Special Provisions.

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 County Board of Supervisors and the Contractor which contains terms and conditions in compliance with all laws applicable to monies withheld under the contract.

7.6. DELAYED PAYMENTS

All the monies due the Contractor under the contract will be paid by the Treasurer of the County of Riverside, 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 the County's obligations.

7.7. FINAL PAYMENT

The County, after completion of the work, and submittal of any final documents or reports required by the Special Provisions, shall make a final estimate in writing to the County Board of Supervisors of the amount of work done and the value of such work; and pursuant to order of the Board of Supervisors the County shall pay the sum found to be due after deducting therefrom all previous payments and all amounts to be kept and retained under the provisions of the contract or applicable law. All prior partial estimates and payments shall be subject to correction in the final estimate and payment. The withheld retention funds shall not be due and payable to the Contractor until the expiration of thirty-five (35) days after the date of approval by the Board of Supervisors and recordation of the notice of completion.

The Contractor agrees that no certificate given or payments made under the contract except the final payment and approval by the Board of Supervisors shall be conclusive evidence of the performance of the contract. No payment shall be construed to be an acceptance of any defective work or improper materials.

The Contractor's agreement to the final payment shall release the County, including its officers, employees, agents and contractors, from any and all claims from the Contractor for further or additional compensation related to the work.

7.8. CLAIMS RESOLUTION

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 County shall be resolved following the statutory procedure unless the County has elected to resolve the dispute pursuant to Public Contract Code 10240 et seq.

7.8.1. Submission of Claims

All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed 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 County.

7.8.1.1. Claims Under \$50,000.00

The County shall respond in writing to the claim within 45 days of receipt of the claim, or, the County 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 County may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the County and the claimant. The County'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.

7.8.1.2. Claims over \$50,000.00 but less than or equal to \$375,000.00

The County 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 County may have against the claimant. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the County and the claimant. The County'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.

7.8.2. Meet and Confer

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

7.8.3. Filing of Claims

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.

7.8.4. Mediation and Judicial Arbitration

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.

7.8.5. 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.

8. GENERAL

8.1. COOPERATION BETWEEN CONTRACTORS

The Contractor shall fully cooperate and coordinate its work with all utility and public agency representatives engaged in construction, relocation, altering or otherwise rearranging any facilities interfering with the progress of the work, and with any other contractors working at or near the project site. Full compensation for any delay or inconvenience to the Contractor's operation due to such operations shall be considered included in the prices for the other items of work and no additional allowance will be made therefore.

8.2. HOLD HARMLESS / INDEMNIFICATION

Contractor shall indemnify and hold harmless the County of Riverside, its Agencies, Districts, Special Districts and Departments, their respective directors, officers, Board of Supervisors, elected and appointed officials, employees, agents and representatives from any liability claim, action, or damages whatsoever, based or asserted upon any services of Contractor, its officers, employees, subcontractors, agents or representatives arising out of or in any way relating to this Agreement, 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, agents, employees, subcontractors, agents or representatives relating to this Agreement. Contractor shall defend, at its sole expense and pay all costs and fees including, but not limited to attorney fees cost of investigation, defense and settlements or awards, the County of Riverside, its Agencies, Districts, Special Districts and Departments, their respective directors, officers, Board of Supervisors, elected and appointed officials, employees, agents and representatives in any claim or action to which this indemnification and hold harmless obligation applies.

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 County; provided, however, that any such adjustment, settlement or compromise in no manner whatsoever limits or circumscribes Contractor's indemnification to County as set forth herein.

Contractor's obligation hereunder shall be satisfied when Contractor has provided to County the appropriate form of dismissal relieving County 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 County 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 County to the fullest extent allowed by law.

8.3. INSURANCE

Without limiting or diminishing the Contractor's obligation to indemnify or hold the County harmless, Contractor shall procure and maintain or cause to be maintained, at its sole cost and expense, the following insurance coverage's during the term of this Agreement.

8.3.1. 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 County of Riverside, and, if applicable, to provide a Borrowed Servant/Alternate Employer Endorsement.

8.3.2. 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 County of Riverside, its Agencies, Districts, Special Districts, and Departments, 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 \$1,000,000 per occurrence combined single limit and \$2,000,000 annual aggregate. 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.

8.3.3. 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 County of Riverside, its Agencies, Districts, Special Districts, and Departments, their respective directors, officers, Board of Supervisors, employees, elected or appointed officials, agents or representatives as Additional Insureds.

8.3.4. Environmental Impairment Insurance:

Contractor shall maintain Environmental Impairment Insurance providing coverage for the Contractor's performance of work included within this Agreement, with a limit of liability of not less than \$1,000,000 per occurrence and \$1,000,000 annual aggregate.

8.3.5. General Insurance Provisions - All lines:

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 County Risk Manager. If the County'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.

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 County Risk Manager before the commencement of operations under this Agreement. Upon notification of deductibles or self insured retention's unacceptable to the County, and at the election of the County's Risk Manager, Contractor's carriers shall either; 1) reduce or eliminate such deductibles or self-insured retention's as respects this Agreement with the County, or 2) procure a bond which guarantees payment of losses and related investigations, claims administration, and defense costs and expenses.

Contractor shall cause Contractor's insurance carrier(s) to furnish the County of Riverside with either 1) a properly executed original Certificate(s) of Insurance and certified original copies of Endorsements effecting coverage as required herein, and 2) if requested to do so orally or in writing by the County 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 thirty (30) days written notice shall be given to the County of Riverside 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 County of Riverside 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 coverage's set forth herein and the insurance required herein is in full force and effect. ***Contractor shall not commence operations until the County has been furnished original Certificate (s) of Insurance and certified original copies of endorsements and if requested, certified original 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.***

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 County's insurance and/or deductibles and/or self-insured retention's or self-insured programs shall not be construed as contributory.

The County'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

which will add to additional exposures (such as the use of aircraft, watercraft, cranes, etc.); or, the term of this Agreement including any extensions thereof exceeds five (5) years the County reserves the right to adjust the types of insurance required under this Agreement and the monetary limits of liability for the insurance coverage's currently required herein, if; in the County Risk Manager's reasonable judgment, the amount or type of insurance carried by the Contractor has become inadequate.

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

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

Contractor agrees to notify County of any claim by a third party or any incident or event that may give rise to a claim arising from the performance of this Agreement.

8.4. PUBLIC UTILITIES

The locations of all pipelines, power lines, communication lines and other utility components known to County to exist within the limits of the work, are indicated on the drawings and may be the subject of a specific section in the Special Provisions. Size, location and characteristics of such utilities are based upon information made available to County, generally 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, meter, junction boxes or similar items in or about the limits of the work.

Unless otherwise directed by the Contract Documents, all existing utilities, whether 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 or elsewhere in the Contract Documents, Contractor must immediately notify, in writing, the County and the utility company (public or private) involved, stating with exactness the condition found.

If 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 County.

All work needed 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 to be done at Contractor's expense.

Contractor's cost of locating and 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 or elsewhere in the Contract Documents, and for equipment on the project necessarily idled during such work shall be paid Contractor as Extra Work.

County 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, Contractor shall be compensated for such work as Extra Work.

8.5. PROTECTION OF EXISTING STREET FACILITIES

The Contractor shall be responsible for the protection of existing signs, fences, concrete curbs, gutters and other facilities or structures. The Contractor shall be responsible to repair or replace any such items which are damaged.

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.

8.6. DIVERSION AND CONTROL OF WATER

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

8.7. DUST ABATEMENT

During the performance of all work, the Contractor shall take the necessary precautions to avoid any loss or damage resulting from its operations that raise or produce dust. The Contractor will be required to have a positive and continuous method of dust control which is satisfactory to the County. The methods to be used for controlling dust in the construction area and along haul roads shall be approved by the County prior to starting any of the work. All costs incidental to dust control shall be included in the unit prices paid for other items of work.

8.8. PROJECT SIGNS

The Contractor shall erect a maximum of two project signs at the locations designated by the County. The signs will be furnished by the County. The signs shall be erected as soon as possible and within 15 days after date of Notice to Proceed. The signs are 4 feet by 8 feet in size, with two 4" x 4" x 12' posts. The sign posts shall be set 5.0 feet in good solid ground and the backfill carefully tamped into place.

8.9. EXAMINATION OF PLANS, SPECIFICATIONS, CONTRACT, AND SITE OF WORK

The Contractor shall examine fully and carefully the site of the work, the plans, the specifications, and any other Contract Documents prior to submitting its bid. The submission of a bid shall be conclusive evidence that the Contractor has investigated the site and is satisfied as to the conditions and requirements of the work to be performed.

Where the County has made investigations of subsurface conditions in areas where work is to be performed, or in other areas, such investigations are made only for the purpose of study and design. Where such investigations have been made, bidders may, upon request, inspect the records of the County as to such investigations. The records of such investigations are not a part of the contract and are solely for the convenience of the bidders. It is expressly understood and agreed that the County 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 County in its use thereof and there is no warranty or guarantee, either express 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. No information derived from inspection of such records will in any way relieve the Contractor from its obligations under the Contract Documents.

9. WATERING

9.1. DESCRIPTION

This work shall include providing a water supply for all water required for the work. The application of the water shall be subject to the approval of the County at all times and shall be applied in the necessary amounts and at the necessary locations subject to the approval of the County.

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 dust control 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.

10. PUBLIC CONVENIENCE, TRAFFIC CONTROL AND DETOURS

10.1. GENERAL

The Contractor shall so conduct its operations as to offer the least possible obstruction and inconvenience to the public and it shall have under construction no greater length or amount of work than it 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 or near 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 and annoyance as possible to abutting and nearby property owners.

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

10.2. SIGNS

It shall be the responsibility of the Contractor to provide and maintain all traffic control, lights, barricades and signs, both on and off the site of work, subject to approval of the County; and all such devices shall be of a type approved by the County.

If, in any case, the County finds it necessary to replace, add to or erect said barricades, signs, or lights when the Contractor fails to do so, the Contractor shall be billed for all costs thereof.

10.3. 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 advance in writing by the County.

SPECIAL PROVISIONS

FOR

CONSTRUCTION OF

2015 SITE IMPROVEMENTS

AT THE

CLOSED EDOM HILL, BEAUMONT,

MEAD VALLEY AND COACHELLA

LANDFILLS

Prepared by:

RIVERSIDE COUNTY
DEPARTMENT OF WASTE RESOURCES

14310 Frederick Street
Moreno Valley, CA 92553

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TABLE OF CONTENTS

SECTION 1) GENERAL (ALL SITES)	4
1.1. INTRODUCTION.....	4
1.2. DEFINITION OF TERMS.....	4
1.3. GENERAL SCOPE OF WORK.....	6
1.4. REFERENCED SPECIFICATIONS AND DOCUMENTS.....	7
1.5. PRECEDENCE OF CONTRACT DOCUMENTS.....	7
1.6. NOTICE TO PROCEED.....	8
1.6.1. Construction Schedule.....	8
1.6.2. Public/Site Safety Plan.....	8
1.6.3. Pre-Construction Meeting.....	10
1.7. TIME OF COMPLETION AND LIQUIDATED DAMAGES.....	10
1.8. SUSPENSION AND RESUMPTION OF OPERATIONS.....	11
1.9. CONTRACTOR'S QUALIFICATIONS.....	12
1.10. CONTRACTOR'S RESPONSIBILITIES.....	12
1.11. PERMITS.....	13
1.12. ENVIRONMENTAL REQUIREMENTS.....	13
1.12.1. General.....	13
1.13. DIVERSION AND CONTROL OF WATER.....	14
1.14. DETAIL DRAWINGS AND SUBMITTALS.....	15
1.15. SURVEY CONTROL OF WORK.....	15
1.16. PROTECTION OF EXISTING UTILITIES.....	16
1.17. PROTECTION OF ADJACENT TRANSFER STATION/COMPOST FACILITY OPERATIONS (EDOM HILL AND COACHELLA).....	16
1.18. STORAGE OF MATERIALS.....	17
1.19. EQUIPMENT STAGING AREA.....	17
1.20. EQUIPMENT RENTAL.....	18
1.21. LABOR SURCHARGE.....	18
1.22. UNITS OF MEASUREMENT.....	18
1.23. MEASUREMENT AND PAYMENT.....	18
SECTION 2) PREPARE AND IMPLEMENT NPDES SWPPP (ALL SITES)	19
2.1. GENERAL.....	19
2.2. EXECUTION.....	19
2.3. MEASUREMENT AND PAYMENT.....	20
SECTION 3) MOBILIZATION AND DEMOBILIZATION (ALL SITES)	21
3.1. GENERAL.....	21
3.2. MATERIALS.....	21
3.3. EXECUTION.....	21
3.4. MEASUREMENT AND PAYMENT.....	22
SECTION 4) DEVELOP WATER (ALL SITES)	23
4.1. GENERAL.....	23
4.2. MATERIALS.....	23
4.3. EXECUTION.....	24
4.4. MEASUREMENT AND PAYMENT.....	25
SECTION 5) EARTHWORK (EDOM HILL & BEAUMONT)	26
5.1. GENERAL.....	26
5.2. MATERIALS.....	26
5.3. EXECUTION.....	27
5.3.1. Bench Grading/Erosion Repair (Edom Hill).....	28

5.3.2.	<i>Slope & Top Deck Erosion Repair (Edom Hill)</i>	29
5.3.3.	<i>Berm Installation (Edom Hill & Beaumont)</i>	30
5.3.4.	<i>Basin Excavation, Haul and Stockpile (Edom Hill)</i>	30
5.3.5.	<i>Engineered Fill (Edom Hill)</i>	30
5.3.6.	<i>Access Bench Re-grade/Erosion Backfill (Edom Hill)</i>	31
5.3.7.	<i>CMP Clean-out (Edom Hill)</i>	32
5.4.	MEASUREMENT AND PAYMENT	32
SECTION 6) HARDSCAPE STRUCTURES (EDOM HILL & BEAUMONT)		35
6.1.	GENERAL	35
6.2.	MATERIALS	35
6.3.	EXECUTION	36
6.4.	MEASUREMENT AND PAYMENT	38
SECTION 7) ROCK BOULDER RELOCATION/PLACEMENT (MEAD VALLEY)		41
7.1.	GENERAL	41
7.2.	MATERIALS	41
7.3.	EXECUTION	41
7.4.	MEASUREMENT AND PAYMENT	42
SECTION 8) GREEN WASTE/PALM WASTE APPLICATIONS (EDOM HILL, MEAD VALLEY AND COACHELLA)		43
8.1.	GENERAL	43
8.2.	MATERIALS	43
8.3.	EXECUTION	43
8.3.1.	<i>Palm Waste Installation (Edom Hill)</i>	43
8.3.2.	<i>Green Waste/Palm Waste – Spread & Track-Walk (Mead Valley & Coachella)</i>	44
8.4.	MEASUREMENT AND PAYMENT	45
SECTION 9) AUTHORIZED TIME & MATERIALS WORK (ALL SITES)		47
9.1.	GENERAL	47

SECTION 1) GENERAL (All Sites)

1.1. Introduction

These Special Provisions have been prepared for site improvements construction at the closed Edom Hill, Beaumont, Mead Valley and Coachella Landfills in Riverside County, California. Work to be done under this contract shall consist of furnishing equipment, superintendence, labor, skills, materials, and all other items necessary for the construction and installation of new drainage control features and perimeter rock barriers; and maintenance improvements to existing drainage control features. The work to be performed and furnished shall conform to the Contract Documents.

The major features of the work to be performed shall include but are not limited to: prepare and implement the National Pollution Discharge Elimination System (NPDES) Storm Water Pollution Prevention Plan (SWPPP), earthwork (bench grading/erosion repair, slope erosion repair, basin excavation/haul/stockpile, berm installation, engineered fill and access bench re-grade/erosion backfill), hardscape drainage structure construction (concrete drains, shotcrete drains, masonry splash walls and rip-rap), palm waste placement, in-place palm waste and green waste spreading/track walking, and rock boulder relocation/placement.

The Contractor shall be aware that adjacent to the closed Edom Hill and Coachella Landfill sites are active Transfer Station and Compost Facilities operated by Burrtec Industries. Contractor work relating to the project shall not impede or interrupt these facility operations. Full cooperation of the Contractor and its forces are required to assure safe working conditions. Therefore, it is necessary to emphasize the County will have full authority to remove any of the Contractor's employees or subcontractors who do not immediately abide by landfill/transfer station/compost facility site rules or directions from the County.

1.2. Definition of Terms

Construction Manager

The Construction Manager is the individual assigned by the County Project Manager to manage and oversee the administration of the construction project. The Construction Manager, an authorized employee of the County, is the on-site representative reporting to the Project Manager during the construction phase of the project. The Construction Manager is assisted by the County Inspector(s) to direct and monitor the project. All coordination, reporting, and issues related to non-compliance will be directed to the Project Manager through the Construction Manager. In addition, the Construction Manager will participate with the Project Manager and County Inspector(s) in all decisions related to design and construction issues which arise during the course of construction.

Contractor's Surveyor

The Contractor's Surveyor is responsible to perform horizontal and vertical control of the actual construction, based on benchmarks established by County's Surveyor.

Cubic Yard

Unless otherwise specified in these specifications, where the term cubic yard appears it shall mean bank (bulk) volume in the case of excavation; and compacted volume yielding the specified relative compaction, moisture content, and hydraulic conductivity, if required, in the case of engineered fill.

General Contractor

The General Contractor is the firm responsible for all construction aspects of the project. The General Contractor may use subcontractors for specialized portions of the project, such as grading and earthworks, electrical, mechanical, and other parts of the project.

Manufacturer

A manufacturer is the firm or firms responsible for the production of geosynthetics or the maker, fabricator, or producer of a product and/or material.

Moisture Content

This term is defined as the percentage of water contained in a soil in relation to its dry weight, using ASTM D2216 or ASTM D4643.

Optimum Moisture Content (OMC)

This term is defined as the moisture content that corresponds to the maximum dry density, as determined by the specified laboratory Moisture Density Relationship Test, ASTM D1557.

Project Manager

The Project Manager is the designated representative of the County responsible for the project.

Relative Compaction

This term is defined as the ratio of field-compacted dry density to the maximum dry density as determined by the Moisture Density Relationship Test, ASTM D1557.

Sieve Sizes

These are defined as U.S. Standard sieve sizes.

Slope

Slope is described in terms of horizontal distance, perpendicular to contour lines, to vertical distance (H:V) where V is generally fixed as unity. It is also expressed as a percent (%) equal to the vertical distance divided by the horizontal distance, and multiplied by 100.

Specifications

The Specifications are the contract specifications prepared for this project. These include the General Provisions, the Special Provisions and any other Contract Documents.

Subgrade

This term refers to native, engineered fill, or constructed stable base material, on which all construction elements of this project shall be placed.

Thickness

The distance measured vertically, as indicated by a plumb line, between two opposing surfaces.

Ton

In the case rock boulders specified for use in the Contract Documents it shall mean 2,000 pounds avoir du pois.

1.3. General Scope of Work

The major features of work to be performed by the contractor under this contract include furnishing all labor, materials, vehicles, tools, equipment, power, and incidentals necessary for the construction of the 2015 Closed Sites Improvements Project. The items of work to be performed shall conform to all of the Contract Documents, including but not limited to the General Provisions, Project Drawings, Referenced Specifications and Documents, and these Special Provisions. The major features of the work to be performed shall include but are not limited to:

Bid Item #	Bid Item	Landfill Site
1	Earthwork – bench grading / erosion repair	Edom Hill
2	Earthwork – slope & top deck erosion repair	
3a	Earthwork – berm install	
3b	Earthwork – berm install	Beaumont
4	Earthwork – basin excavation / haul / stockpile	Edom Hill
5	Earthwork – engineered fill	
6	Earthwork – access bench re-grade/erosion backfill	
7	Concrete Drainage Structures	Beaumont
8	Shotcrete Drainage Structures	
9	Masonry Splash Walls	Edom Hill
10	Rip-Rap	
11	Palm Waste Installation	
12	Authorized Time & Materials	Applicable for All Sites
Optional Bid Items – Awarded at County Discretion:		
13	Rock Boulder Relocation/Placement	Mead Valley
14a	Green Waste - Spread, Relocate and Track-Walk	
14b	Palm Waste – Spread, Relocate and Track-Walk	Coachella
15	Compost Facility Basin Area Improvements	Edom Hill

1.4. Referenced Specifications and Documents

The following specifications and documents shall apply as specifically referenced in the Contract Documents:

Standard Specifications

The term Standard Specifications is a direct reference to the publication entitled "Standard Specifications for Public Works Construction" (2012 edition, and all subsequent amendments, supplements, and additions) written and promulgated by the Joint Cooperative Committee of the Southern California Chapter American Public Works Association and Southern California Departments Associated General Contractors of California. This publication is also known as the "Greenbook."

State Standard Specifications

The "State Standard Specifications" are the Standard Specifications of the State of California, Department of Transportation, dated 2012.

ASTM Specifications

The latest revised specifications or tentative specifications of the American Society for Testing and Materials.

Standard Drawings

Unless otherwise noted on the Project Drawings, the Standard Drawings shall be those of the Riverside County Flood Control and Water Conservation District, the Riverside County Transportation Department and Standard Plans of the State Department of Transportation (Caltrans).

Plans or Project Drawings

The Plans or Drawings are the Contract Project Drawings specifically prepared for this project.

1.5. Precedence of Contract Documents

In case of conflict between the Contract Documents, the following order of governing documents shall be followed (with the first listed document controlling):

- A. Permits from other agencies as may be required by law
- B. Special Provisions
- C. Project Drawings
- D. General Provisions
- E. Standard Drawings
- F. Standard Specifications
- G. State Standard Specifications

1.6. Notice To Proceed

Within ten (10) business days of the award of contract by the Riverside County Board of Supervisors, or sooner, the Contractor shall submit all of the following items:

- A. Performance Bond and Payment Bond (Instructions to Bidders)
- B. Required Certificates of Insurance (General Provisions Section 8.3.)
- C. Construction Schedule (Special Provisions Section 1.6.1 and General Provisions Section 2.2)
- D. Contractor Project Specific Public/Site Safety Plan (Special Provisions Section 1.6.2.)
- E. Project Specific SWPPP (Special Provisions Section SECTION 2)

The County will not issue the Notice to Proceed before the Contractor submits the performance bond, payment bond, certificates of insurance, construction schedule, public/site safety plan, and project specific SWPPP supplement, and attends the mandatory pre-construction meeting.

After receipt of the construction schedule, public/site safety plan, and project specific SWPPP supplement, the County will review them and provide appropriate comments. The Contractor will be required to address all comments from the County and resubmit within five (5) business days.

1.6.1. Construction Schedule

The Contractor shall submit construction schedules to the County in accordance with Section 6-1 of the Standard Specifications. Before commencement of construction, the Contractor shall also provide a map for each landfill site showing the proposed phasing of construction activities. This map shall delineate the timing and phasing to be utilized in earthwork, (bench grading and erosion repair, slope erosion repair, berm installation, basin excavation/haul/stockpile, engineered fill, access bench grading/erosion backfill, CMP clean-out), shotcrete and concrete drainage structures, masonry splash walls, rip-rap, palm waste installation, rock boulder relocation/placement, green waste and palm waste spreading, and all other miscellaneous items as required by the work.

The Contractor shall be responsible for all impacts due to its failure to submit acceptable updates in a timely manner, including but not limited to withholding progress payments until updated construction schedules are submitted in accordance with General Provisions Section 7.5.

The County's acceptance of a construction schedule from the Contractor does not in any way limit the Contractor's obligation to complete the work in accordance with all the requirements of the Contract Documents.

1.6.2. Public/Site Safety Plan

The Contractor shall submit a Public/Site Safety Plan to the County, which shall be subject to County review and comment. This Public/Site Safety Plan shall address the each landfill site. Review of the Public/Site Safety Plan does not in any way release the Contractor of liability in the event of an accident or injury, nor does it place any liability on the County or any County employee. The Public/Site Safety Plan must, at a minimum, meet all the requirements of Federal and State regulations regarding all construction activities. The Contractor shall be solely responsible for adherence to the Public/Site Safety Plan at all times.

It is the responsibility of the Contractor to confirm compliance with all relevant health and safety regulations. The Contractor shall take proper safety and health precautions to protect the workers, the public and County employees. Contractors shall comply with Provisions of Occupational Safety and Health Administration Regulations for Construction, CFR, 1926/1910 and CFR 1910.120, the California Department of Industrial Relations, Division of Industrial Safety (Safety Orders), with the additional Safety Provisions in the Contractor's Public/Site Safety Plan, and all other applicable Federal, State, County and local laws, ordinances, codes, the requirements set forth herein, and any regulations that may be specified in other parts of this Contract. If any of these requirements are in conflict, the more stringent requirement shall apply. The Contractor's failure to be thoroughly familiarized with the aforementioned safety and health provisions shall not relieve the Contractor of responsibility for full compliance with the obligations and requirements set forth herein. The Contractor shall be responsible for providing all items necessary for health and safety, including dust control, personal protective equipment, decontamination equipment if required, and collection and disposal of rinse waters, in accordance with applicable Federal and State regulations. The County shall reserve the right to direct removal of any of the Contractor's employees or subcontractors who are not adhering to or meeting the requirements of the law, the Public/Site Safety Plan, or applicable regulations.

The Public/Site Safety Plan shall include procedures that address traffic control for approaching, crossing, or traveling along public access roads near the Edom Hill and Coachella Transfer Stations and Compost Facilities according to the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) 2009 Edition as amended by the MUTCD supplement which prescribes uniform standards and specifications for all official traffic control devices in California.

The MUTCD can be viewed in the Federal Highway Administration website at <http://mutcd.fhwa.dot.gov/pdfs/2009r1r2/mutcd2009r1r2edition.pdf>. The Public/Site Safety Plan shall include procedures for addressing traffic control for work near the Edom Hill and Coachella Transfer Stations and Compost Facilities. The Public/Site Safety Plan will state that all expansion construction traffic shall not exceed 15 miles per hour when traveling on landfill property access roads used by the public.

The Public/Site Safety Plan shall also address procedure and protocol for clean-up in the event of a spill as defined in Section 1.12 of these Special Provisions.

The Public/Site Safety Plan shall also address procedure and protocol for employee heat illness protection. When the temperature exceeds 85 degrees Fahrenheit in the heat index chart, at minimum, the Public/Site Safety Plan shall guarantee the employee with the following: access to fresh, cool drinking water throughout the day; access to shade for 5 minutes at a time to rest and cool down; training on how to work safely in the heat, including how to call for emergency services if someone is overcome by heat. Particular attention shall be given to relevant Division of Industrial Safety of the State of California. Said Orders are contained in Title 8 of the California Code of Regulations, Chapter 4, Subchapter 7, and Group 2. Specific reference is made to Article 10 of said Construction Safety Orders, Section 3395 Heat Illness Prevention.

The Contractor is advised that decomposing refuse produces landfill gas which is approximately 50 percent methane (natural gas) by volume. Landfill gas is colorless, can be odorless, may contain hydrogen sulfide, toxic or hazardous material, is combustible, and may contain no oxygen. Landfill gas can also migrate through several thousand feet of soil adjacent to landfills. The Contractor is, therefore, advised of the need for precautions against fire, explosion and asphyxiation when working in or near excavations on the project site.

The Contractor shall hold mandatory weekly safety meetings on the site. The Contractor shall notify the County of the time and place of all meetings and allow the County to participate. Meetings shall reiterate all safety measures to be taken, discuss any violations committed, and preventive measures to avoid subsequent violations. The Contractor shall provide the County with a copy of the minutes and attendance of the safety meetings.

1.6.3. Pre-Construction Meeting

Within ten (10) business days of the award of contract by the Riverside County Board of Supervisors, the County will hold a mandatory pre-construction meeting to be attended by the Riverside County Department of Waste Resources, the Contractor's superintendent, the Contractor's surveyors, major subcontractors, regulatory agency representatives, QA/QC Consultant, and other individuals involved in the execution of the work.

During the Pre-Construction Meeting, the Contractor shall be issued up to four (4) complete copies of the Contract Documents (which includes four full-sized sets of Project Drawings and four half-sized sets of Project Drawings). Digital information of the Project Drawings will be made available upon written request from the Contractor. The cost of any additional copies requested shall be deducted from payment to the Contractor.

1.7. Time of Completion and Liquidated Damages

The Contractor shall diligently and continuously prosecute the entire project to final completion before the expiration of **60 WORKING DAYS** from the date of the Contractor's receipt of the Notice to Proceed. The working day shall be as set forth in Section 6.6 of the General Provisions. The length of each working day shall be from 7:00

AM to 4:00 PM, including one hour for lunch break, unless otherwise approved in writing by the County.

The following days have been designated by the County as holidays in 2015:

January 1	New Year's Day
Third Monday in January	Martin Luther King, Jr.
February 12	Lincoln's Birthday
Third Monday in February	Washington's Birthday
Last Monday in May	Memorial Day
July 4	Independence Day
First Monday in September	Labor Day
Second Monday in October	Columbus Day
November 11	Veteran's Day
Fourth Thursday in November	Thanksgiving Day
Fourth Friday in November	day after Thanksgiving
December 25	Christmas Day

For a holiday that falls on a Saturday, both the Saturday and the preceding Friday shall be considered legal holidays. For a holiday that falls on a Sunday, both the Sunday and following Monday shall be considered legal holidays.

The Contractor shall not be permitted to work on days designated by the County as holidays unless the Contractor submits a written request to work and the request is approved in writing by the County. All Contractor requests to work on designated holidays shall be submitted at least seven (7) calendar days prior to the requested date(s).

In case all the work called for and all the conditions and requirements of the project are not completed within the number of working days specified above, liquidated damages of Four Thousand Dollars (\$4,000) for each additional working day required to properly complete the project in excess of the allowed number of working days shall be paid by the Contractor to the County.

1.8. Suspension and Resumption of Operations

The Contractor shall suspend construction operations when, in the County's opinion, the conditions for such operations are unsatisfactory due to rain, wind or any other condition the County deems unsatisfactory. The Contractor shall not be compensated monetarily for any delays caused by the suspension of operations. Working days shall be charged as appropriate, as stated in Section 6.6 of the General Provisions and Section 1.7 of these Special Provisions.

Whenever operations have been suspended, the effect of rain, wind or other adverse conditions shall be assessed by the County before approval to resume construction is given. Equipment will not be allowed to travel over any portion of the work surface until the construction area has dried sufficiently to prevent excessive rutting and to allow the equipment to be operated safely and satisfactorily. If rutting occurs, the Contractor shall

re-grade, scarify, and re-compact the materials to whatever depth is required to repair the damage in accordance with the appropriate specifications described herein at the Contractor's expense.

1.9. Contractor's Qualifications

The Contractor shall have, or be able to obtain, all the personnel, equipment, and materials necessary to perform the work specified in the scope of work, and be able to keep the needed equipment at the job site for the duration of the work. The bidder may meet these requirements by using subcontractors, or forming a partnership, joint venture, or other legal arrangement. If the qualifications are met by the formation of a partnership, joint venture or other legal arrangement; then each separate legal entity shall be required to sign the contract and accept joint and several liabilities. The Contractor, or the Contractor's personnel shall hold appropriate certificates, licenses, and permits necessary to perform the work described in the scope of work, including excavation of and moving solid waste between points within the landfill property.

The Contractor shall present all licenses held, the certificate numbers, and in whose name the license is issued in his bid response. The Contractor shall demonstrate prior experience in performing and completing earthwork construction projects in his bid response. Prior work performed by the Contractor shall include mass excavation, placement of fill, hardscape structure installation, rock/boulder relocation/placement, masonry work, and palm waste placement & spreading. In the Contractor Proposal, the Contractor shall present specific projects, dates, locations, clients, project costs, a project summary description, and the Contractor's role in each project. The Contractor shall present a reference list of clients that includes a contact person and phone number. The Contractor shall also possess a Class A Contractor's License.

1.10. Contractor's Responsibilities

The Contractor shall identify to the County, in writing, the name of the representative who shall have complete authority to act for this project. The Contractor shall also furnish to the County a telephone number where the Contractor or his representative may be contacted 24 hours a day. The Contractor shall examine the Contract Documents, and shall be aware of conditions at the site that may affect execution of the work. These conditions include, but are not limited to, the following:

- a) Applicable health and safety regulations
- b) Transportation and access conditions
- c) Availability of utilities
- d) Surface and subsurface conditions
- e) Location, availability, and condition of construction materials
- f) Climate
- g) On-site soil characteristics of soil to be used in construction, including but not limited to size and type variation, location of excavation and stockpile areas, etc.
- h) General construction conditions at the site

The Contractor should note that soil reports and test results for each landfill site are available for review at the Riverside County Department of Waste Resources office. Review of these documents does not relieve the Contractor of the responsibility of evaluating their accuracy and pertinence.

The Contractor shall assume full responsibility for any theft or vandalism occurring to the Contractor's equipment, tools, materials, supplies, and construction (prior to final acceptance of the entire project by the County), and shall take appropriate measures necessary to eliminate their occurrences at each landfill site.

The Contractor is responsible for setting line and grade for the excavation work and any other related construction activities. An electronic copy of the grading plan is available to the Contractor upon request in a Microstation format.

Until County final acceptance of the entire project, the Contractor shall retain full responsibility for the work.

1.11. Permits

Applicable permits shall be procured and adhered to at the Contractor's sole expense. Contractor shall obtain a South Coast Air Quality Management District (SCAQMD) Rule 403 Fugitive Dust Permit if Contractor earth moving operation exceeds a daily earth moving or throughput volume of 5,000 cubic yards three times during the project, or if Contractor work for this project results in more than 50 acres of disturbed surface area.

1.12. Environmental Requirements

1.12.1. General

The Contractor and its sub-contractors shall at all times keep each site neat, tidy, and free of waste materials or rubbish resulting from work. Toxic materials, including oil, fuel oil, gasoline, coolant, fluid filters, and other contaminants, shall be transported off site and disposed of at an approved facility. The Contractor shall adhere to the Riverside County Hazardous Materials Business Emergency Plans (BEPs) for the Edom Hill, Beaumont, Mead Valley, and Coachella Landfills. Containers temporarily holding these toxic materials shall be covered, properly labeled and have no leaks, and shall be removed from the site as quickly as is reasonably possible. Upon award of Contract, the Department shall provide Contractor with a digital copy of the BEP for the Edom Hill, Beaumont, Mead Valley, and Coachella Landfills and up to four (4) hard copies upon request.

Any accidental spills or spills that are produced during routine equipment maintenance shall be cleaned up by removing all the contaminants and the contaminated soil, disposing of it at an approved facility, and replacing the removed contaminated soil volume with clean soil material. If an event of a spill occurs, the Contractor and/or its sub-contractors shall follow the procedures outlined in the Site Safety Plan.

The Contractor shall comply with and supplement, if necessary, the Riverside County Hazardous Materials Business Emergency Plans for the Edom Hill, Beaumont Mead Valley and Coachella Landfills. The Contractor shall submit a separate Hazardous Materials Business Emergency Plan for each site to address Contractor activities if work/use includes storage, or potential storage of hazardous materials exceeding the following quantities: 55 gallons of liquids, 500 pounds of solids, or 200 cubic feet of compressed gases. In addition, the Contractor shall comply with the Riverside County Spill Prevention, Control, and Countermeasure (SPCC) Plans for the Edom Hill, Beaumont, Mead Valley, and Coachella Landfills, including but not limited to the submittal of a Business Emergency Plan and performance of required inspections, if the Contractor's work requires the onsite storage of petroleum products (as defined in the SPCC Plan) or if the Contractor stores petroleum waste products onsite. Upon award of Contract, the Department shall provide Contractor with a digital copy of the SPCC Plan for the Edom Hill, Beaumont, Mead Valley, and Coachella Landfills and up to four (4) hard copies upon request.

1.13. Diversion and Control of Water

The Contractor shall at all times protect the work from damage by such waters and shall take all due measures to prevent delays in progress of the work caused by such waters. In order to accomplish this, the Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution through the use of water pollution control measures consisting of construction of facilities which may be required to provide retention, control, and abatement of water pollution. The Contractor shall construct, and maintain all temporary diversion and protective works to divert run-off around the work areas and material storage areas, and to protect persons and property downstream of the work. The County may require the Contractor to implement additional protection measures. Excavation and stockpile areas shall be graded and properly maintained to provide adequate drainage at all times. The Contractor shall provide berms or other measures as necessary and/or required to prevent run-off from flowing onto completed areas and to avert erosion. The Contractor shall also conduct and schedule all operations so as to minimize or avoid muddying and silting of said channels, drains, and water bodies.

Upon completion of each workday, the Contractor shall take all necessary preventive measures to avoid or minimize damage resulting in erosion or impounding caused by storm water runoff. Erosion control measures shall consist of constructing sandbag berms, desilting basins, drains, and other such facilities required to provide prevention, control, and abatement of water pollution.

All nuisance water shall be disposed of at the Contractor's sole expense in a manner that will not damage public or private property, create a nuisance or health menace and complies with all applicable regulations. The Contractor shall furnish, install, and operate pumps, hoses, pipes or other equipment of a sufficient capacity to keep all construction excavations free from water until the excavation is backfilled. Water, if odorless and uncontaminated, may be discharged in a manner accepted by the County.

When required by the County, the Contractor shall implement MP-52 as a means of desilting the water before discharging it as described in the California Stormwater Quality Association (CASQA) BMP handbook.

Work shall be suspended, as stated in Section 1.8, "Suspension and Resumption of Operations", of these Special Provisions, when the site is wet, muddy, or in any other condition that interferes with proper operation and construction procedures.

After notification of award and prior to start of any work, the Contractor shall prepare and submit to the County project-specific Storm Water Pollution Prevention Plan (SWPPP) for each landfill site outlining procedures to reduce pollutants (directly or indirectly related to the Contractor's activities) in storm water runoff as detailed in Section 2 of these Special Provisions. The Contractor shall fulfill the provisions for construction monitoring requirements.

1.14. Detail Drawings and Submittals

Unless specified otherwise in these Special Provisions, four (4) copies of all submittals of documentation shall be submitted by the Contractor to the County for review and acceptance, at least two (2) weeks prior to installation of any work pertaining to them.

The review and acceptance of submittals, provided by the Contractor will be only for general conformance with design concept, and shall not be construed as:

- a) Permitting any deviation from the contract requirements
- b) Relieving the Contractor of the responsibility for any error in detail dimensions or otherwise that may exist in such submittals
- c) Constituting a blanket acceptance of dimensions, quantities or details of the material or equipment shown
- d) Accepting deviations from additional details or instructions previously furnished by the County.

Such check or review shall not relieve the Contractor of the full responsibility of meeting all of the requirements of the Contract Documents.

1.15. Survey Control of Work

The County maintains survey control points at each landfill site, and the Contractor shall utilize these throughout the construction period for the Contractor's work. The Contractor's surveyors are responsible for ensuring that all construction conforms to the requirements of the Contract Documents.

The Contractor shall provide County representatives with continuous access to the work to allow County representatives to verify that all construction conforms to the requirements of the Contract Documents. The Contractor shall provide notice to the County **at least two (2) working days** prior to the time the respective areas will be ready for verification surveys.

Construction items requiring verification include but are not limited to:

- a) Earthwork – Bench Grading – Erosion repair (Bid Item #1).
- b) Earthwork – Slope Erosion Repair (Bid item #2).
- c) Earthwork Basin Excavation, Haul & Stockpile (Bid Item #4).
- d) Earthwork – Engineered Fill (Bids Item #5).
- e) Earthwork – Access Bench Re-Grading/Erosion Backfill (Bid Item #6).
- f) Concrete Drainage Structures (Bid Item #7).
- g) Shotcrete Drainage Structures (Bid Item #8).
- h) Palm Waste Installation (Bid Item #11).
- i) Mead Valley Green Waste (Bid Item #14a).
- j) Coachella Palm Waste (Bid Item #14b).
- k) Compost Facility Basin Area Improvements (Bid Item #15).
- l) Other miscellaneous surveys as deemed necessary by the County.

1.16. Protection of Existing Utilities

A number of buried and surface utilities and structures shown on the Project Drawings exist at these landfills. These may include but are not limited to: water lines, ground water monitoring wells, landfill gas probes, landfill gas wells (vertical and lateral), landfill gas system header line, power lines and poles, survey monuments, drainage culverts and above-ground drainage facilities, and office buildings.

The Contractor is hereby notified of the possible existence of underground utilities not indicated in the Contract Documents and to the possibility that underground and above-ground utilities may be at a location different from that which is indicated in the Contract Documents. The Contractor shall be responsible for verifying underground utilities' locations including contact of Underground Service Alert (USA) at 1-800-422-4133, 48 hours prior to beginning work.

Contractor shall be responsible for protection of identified utilities (as shown on the Project Drawings or as identified through utility search) and shall take all necessary precautions by constructing barriers, bridges, and crossings for construction equipment and vehicles to prevent damage to the utilities or as required by the County. Any damage or loss to identified underground utilities as well as above-ground utilities caused by the Contractor's operations shall be promptly repaired at the Contractor's expense and to the satisfaction of the County.

1.17. Protection of Adjacent Transfer Station/Compost Facility Operations (Edom Hill and Coachella)

The Edom Hill and Coachella Transfer Station & Compost Facilities are active facilities; thus, all construction work relating to this project shall not impede or interrupt daily landfill business and operations. The Contractor shall provide a temporary fence (or other structure acceptable to the County) as necessary along the project limits or as otherwise directed by the County, to prevent debris, rocks and equipment from interfering

with access roads and operations adjacent to the Contractor's work. In addition, the Contractor must obtain in advance the County's written acceptance for the locations and construction of temporary haul roads. The Contractor shall also inform the County on a daily basis which haul routes will be utilized adjacent to Transfer Station/Compost Facility operations, so that accidents may be avoided.

Payment for complying with this section shall be considered as included in the various items of work, and no additional compensation shall be allowed.

1.18. Storage of Materials

County and Contractor shall agree to an established area for the storage of Contractor's materials at each site. All imported materials shall be stored in the designated area, unless the Contractor obtains the County's written acceptance for an additional area. All imported materials to be used in construction shall be unloaded, stored, and handled in accordance with manufacturer and supplier recommendations, to prevent damage to the material. When delivery of a material occurs, the Contractor shall promptly observe shipments to assure that the material complies with requirements, that quantities are correct, and that the material is undamaged. The Contractor shall take full responsibility for any delay caused by a supplier or manufacturer. The storage area shall be accessible to the County to observe, verify, and document the presence and condition of materials being stored.

Care shall be taken to protect manufactured materials against damage from misuse, mishandling, or accident. The Contractor shall store materials and maintain construction operations within limits indicated by applicable laws, ordinances, and permits, and as outlined by the County. Care shall be exercised to avoid blocking roads, interfering with County operations, or presenting a hazard to site personnel and equipment, or to the public.

1.19. Equipment Staging Area

County and Contractor shall agree to an established area for the storage of the Contractor's equipment at each site. The storage area shall be accessible to the County to verify the presence and condition of equipment being stored. The stored equipment shall be placed as directed by the County. The Contractor shall confine equipment and maintain construction operations within limits indicated by applicable laws, ordinances, and permits, and as outlined by the County. The Contractor shall make certain that the storage of equipment in any area does not interfere with or otherwise disrupt operations at the site. Care shall be exercised to avoid blocking roads, interfering with site operations, or presenting a hazard to County personnel and equipment, or to the public.

The maximum allowable time that a piece of equipment shall remain on site, in a condition that makes it incapable of performing its designed function, shall be four (4) working days. Any equipment needing further maintenance shall be moved off site for repairs, at the full expense of the Contractor. Equipment no longer needed for the job shall also be removed within four (4) working days of its last use.

Payment for complying with this section shall be considered as included in the various items of work, and no additional compensation shall be allowed.

1.20. Equipment Rental

Attention is directed to Section 7.3.1.3. of the General Provisions. The equipment rental rates to be applied shall be the rates that are in effect at the time of the award of the Contract, as published by the California Department of Transportation. A copy of said equipment rental rates is on file at the County office.

1.21. Labor Surcharge

Attention is directed to Section 7.3.1.1.2. of the General Provisions. The labor surcharge percentage to be applied to the regular hourly wages paid as defined in Section 7.3.1.1. of the General Provisions shall be thirteen percent (13%). The labor surcharge percentage to be applied to the overtime hourly wages paid as defined in Section 7.3.1.1. of the General Provisions shall be twelve percent (12%).

1.22. Units of Measurement

In lieu of Part 1, Section 9-1.4, "Units of Measurement", in the Standard Specifications, measurements shall be in accordance with U.S. Standard Measures. A pound is an avoirdupois. A ton is 2,000 pounds avoirdupois. The unit of liquid measure is the U.S. Gallon.

1.23. Measurement and Payment

There shall be no additional payment to the Contractor for complying with all requirements and work listed in this section. Compensation for these requirements and work shall be considered as included in the various non-optional contract bid items of work.

END OF SECTION 1

SECTION 2) PREPARE AND IMPLEMENT NPDES SWPPP (*All Sites*)

2.1. General

This section covers the preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP) by the Contractor as required by the State of California and this contract for construction activities at each site. The SWPPP shall list and identify job site "good housekeeping" practices to be followed to minimize the potential pollution of storm water runoff and receiving waters. The SWPPP shall also identify the site-specific Best Management Practices (BMPs) planned for use on at each project site, and stipulate schedules for ongoing monitoring and maintenance of those BMPs.

It is anticipated that water, such as rainfall or surface runoff, will be encountered within each landfill property during the period of construction under this contract. The Contractor, by submitting a bid, will be held to have investigated the risks arising from such waters and to have made the bid in accordance with such conditions. The Contractor shall be responsible for all costs associated with or resulting from any water at or coming into each landfill site.

The Contractor shall at all times protect the work from damage by such waters and shall take all due measures to prevent delays in progress of the work caused by such waters. In order to accomplish this, the Contractor shall exercise every reasonable precaution to protect channels, storm drains, and bodies of water from pollution through the use of water pollution control measures consisting of construction of facilities that may be required to provide retention, control, and abatement of water pollution. The Contractor shall also conduct and schedule all operations so as to minimize or avoid muddying and silting of said channels, drains, and water bodies.

All nuisance water shall be disposed of at the Contractor's sole expense in a manner that will not create a nuisance or health menace and complies with all applicable regulations. The Contractor shall furnish, install, and operate pumps, hoses, pipes or other equipment of a sufficient capacity to keep all construction excavations free from water until the excavation is backfilled. Water, if odorless and uncontaminated, may be discharged in a manner approved by the County. When required by the County, a means of de-silting the water it is discharged shall be provided.

2.2. Execution

Contractor shall be responsible for adherence to Industrial General Permit 2014-0057-DWQ. This permit was adopted by the State Water Resources Control Board on April 1, 2014, and shall replace Industrial General Permit 97-03-DWQ for this project.

The County complies with the State NPDES through regular inspections and monitoring and implementation of best management practices. After notification of award and prior to start of any work, the Contractor shall prepare and submit to the County a project-specific Storm Water Pollution Prevention Plan (SWPPP) for each site that outlines

procedures to reduce pollutants (directly or indirectly related to the Contractor's activities) in storm water runoff. At a minimum, the Contractor will be required to provide street sweeping on paved portions of any haul routes as often as reasonably required by the County. All street sweeping, vacuuming, and the stabilized construction access shall follow the guidelines described in California Stormwater BMP handbook, which can be found in the SWPPPs, attached as Appendix A.

2.3. Measurement and Payment

There shall be no additional payment to the Contractor for complying with all requirements and work listed in this section. Compensation for these requirements and work shall be considered as included in the various non-optional contract bid items of work.

END OF SECTION 2

SECTION 3) MOBILIZATION AND DEMOBILIZATION (*All Sites*)

3.1. General

This contract item shall consist of expenditures for all preparatory work and operations, including but not limited to: bond and insurance costs; those costs necessary for the movement of personnel, equipment, supplies, and incidentals to the project sites; 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 sites as well as the related demobilization costs at the completion of the project. Demobilization shall include but not be limited to cleaning installations and the removal of temporary structures as required by the County. Throughout all phases of construction, including suspension of work and until final acceptance of the project, the Contractor shall keep each work site clean and free of refuse generated as a result of the Contractor's operations. Any such refuse from Beaumont or Mead Valley project sites shall be disposed of in County-designated sanitary landfills (Badlands or Lamb Canyon). Refuse generated from Edom Hill or Coachella project sites shall be disposed of at the Edom Hill Transfer Station or Coachella Transfer Station.

Landfill site names and locations for this 2015 Sites Improvement Project:

- 1) Edom Hill – 70-100 Edom Hill Road, Cathedral City
- 2) Beaumont – 4th St. west of Nicolas Rd. between 4th St. and State Hwy 60, Beaumont
- 3) Mead Valley – 22376 Forrest Road, Perris
- 4) Coachella - 87-011 44th St., Coachella, Ca

3.2. Materials

- A. The Contractor shall provide fire extinguishers and first-aid kits at each of the project sites to provide adequate protection to all personnel anticipated to be at each landfill site.
- B. The Contractor shall provide and maintain at least one (1) portable toilet at each of the four project sites. All sanitary facilities shall include twice-per-week servicing, and each unit shall include secondary containment.
- C. Aforementioned materials shall be made available for use by employees associated with the construction project, including (but not limited to) the Contractor, the County, regulatory agency staff, and any other agencies involved with the construction project.

3.3. Execution

- A. Upon receipt of the Notice to Proceed, the Contractor shall furnish, mobilize, and install such temporary works, materials, equipment, supplies, and personnel as necessary for the successful completion of the work. The Contractor shall also operate and maintain temporary works, and equipment throughout the duration of

construction. All temporary works, such as sanitation facilities and concrete washouts, shall fully comply with applicable rules and regulations of governing authorities.

- B. The Contractor shall remove and properly dispose of all refuse from the construction site. The County shall have the right to determine what is refuse, and to determine the manner of disposal. Any hydrocarbon-impacted soils found at the site as a result of the construction operation, such as equipment maintenance, shall be removed and properly disposed of at the Contractor's expense.
- C. The Contractor shall obtain all necessary permits and permission to utilize public roads for mobilization, demobilization, and access to the site. Access to the project sites are available through existing public roads during the hours stated in Section 1.7 of these Special Provisions.
- D. Contractor shall notify the County at least 48 hours prior to mobilizing personnel and equipment to each site so that the County representative may meet the Contractor onsite to provide gate keys as necessary to the closed landfill sites (Edom Hill, Beaumont, Mead Valley and Coachella), confirm work area limits and Do Not Enter zones, etc.

3.4. Measurement and Payment

There shall be no additional payment to the Contractor for complying with all requirements and work listed in this section. Compensation for these requirements and work shall be considered as included in the various non-optional contract bid items of work.

END OF SECTION 3

SECTION 4) DEVELOP WATER (*All Sites*)

4.1. General

The work covered by this section shall consist of furnishing all materials, equipment, labor and supervision to collect, load, transport, and apply water from an offsite water source as necessary for compaction of materials, testing, dust control, and other project construction use. The work shall include installing and maintaining a water meter and water tower (or water J-stand) at the offsite source (as required); installing and maintaining a stabilized construction entrance/exit at the offsite source (as required); documenting and reporting the amount of water used, performing street cleaning along the designed water haul route, and maintaining the offsite source properties according to the Contract Documents.

4.2. Materials

- A. Clean water shall be used in construction for moisture conditioning, dust control, and in all other uses. The Contractor may develop sources of water supply or obtain water from private sources. Water shall be clean and free from objectionable amounts of acids, alkalis, salts or organic materials. The Contractor may be required to furnish the County with a water analysis performed by a laboratory acceptable to the County. The Contractor shall pay all costs of sampling, testing, and reporting the results. The Contractor may consider the use of non-potable water, such as lower quality groundwater and reclaimed water for dust control purposes.
- B. Edom Hill
- i. The Contractor shall arrange to obtain water from the County's water hydrant located on the property to the west of the project site, as shown in the Project Drawings. The County cannot guarantee the availability or amount of water that may be available from this source. If the Contractor chooses to use this resource, it does so at its own risk and it will be the Contractor's responsibility to maintain and repair the County's supply hydrant as necessary for the project duration.
 - ii. The nearest fire hydrant is located near the intersection of Varner Road and Date Palm Drive. If the Contractor wishes to draw water from this hydrant, the Contractor must first contact the appropriate governing agency to obtain written permission and pay the required costs. Any other source of water shall be approved by the County.
- C. Beaumont
- i. The Contractor may arrange to obtain water from the County's water tower used for Lamb Canyon Landfill operations which is located on the north side of First Street approximately 550 feet west of Beaumont Avenue in the City of Beaumont. The County cannot guarantee the availability or amount of

water that may be available from this source. If the Contractor chooses to use this resource, it does so at its own risk and it will be the Contractor's responsibility to maintain and repair the County's supply line and well as necessary for the duration of the project. Contractor shall coordinate lock access to this water source with the County project representative.

D. Coachella

- i. The Contractor shall arrange to obtain water from the onsite Burrtec Waste Industries' (Burrtec) water tower located on the property to the south of the project site as shown in the Project Drawings. The County cannot guarantee the availability or amount of water that may be available from this source. If the Contractor chooses to use this resource, it does so at its own risk and it will be the Contractor's responsibility to maintain and repair the Burrtec supply line and well as necessary for the duration of the project.
- ii. Contractor contact with Burrtec shall be made through the County Project Manager or his designee.

E. Mead Valley

- i. Contractor may develop sources of water supply or obtain water from private sources. This Mead Valley area is within the Eastern Municipal Water District (EMWD) service area. Water shall be clean and free from objectionable amounts of acids, alkalines, salts or organic materials. The Contractor may be required to furnish the County with a water analysis performed by a laboratory acceptable to the County. The Contractor shall pay all costs of sampling, testing, and reporting the test results. The Contractor may consider use of non-potable water, such as lower quality groundwater and reclaimed water for dust control purposes.

4.3. Execution

- A. Contractor shall document and report meter readings of water usage at each project site on a weekly basis to the County. The Contractor shall also document the number of water truck loads used each working day, and shall report the daily load count to the County at the end of each working day.
- B. Contractor shall mitigate track-out from install and maintain a Stabilized Construction Entrance/Exit per BMP Fact Sheet Treatment Control-1 (TC-1) at the offsite water source and the landfill entrance gate designated for Contractor use by the County in accordance with details in Appendix A. This will include, but may not be limited to, the installation and maintenance of crushed aggregate rock and corrugated steel panels. The Contractor shall modify the Stabilized Construction Entrance/Exit (TC-1) at the direction of the County, and shall add additional aggregate rock when directed by the County.
- C. Contractor shall utilize established access routes within the landfill sites.

- D. Contractor shall implement necessary traffic control devices and/or personnel to ensure public traffic does not access the landfill site through designated entrance gates for project personnel and equipment in accordance with the Site Safety Plan in Special Provisions Section 1.6.2. Contractor shall be responsible for ensuring this gate is locked during non-working hours.
- E. Contractor shall control the generation of dust related to the Contractor's work and use of water sources to the satisfaction of the County, including, without limitation, all work areas, offsite water sources, and associated access routes.
- F. Contractor shall perform street sweeping utilizing a broom-type street sweeper along paved portions of the designed offsite water haul route if requested by the County. Performance and effectiveness of the street sweeper(s) shall be to the satisfaction of the County and in accordance with Special Provisions Sections 2.2 and, and BMP Fact Sheet detail SC-7 in Appendix A.
- G. Contractor shall immediately remove any build-up of mud, dirt or debris along paved public or landfill routes to the satisfaction of the County. Contractor shall utilize broom-type street sweepers and/or laborers for this work.
- H. Contractor shall conduct all activities at the offsite water source only during designated contract working hours.
- I. Once the project has been substantially completed, Contractor shall remove any placed corrugated steel panels and shall re-grade the portion of offsite water source(s) utilized by the Contractor during the construction project to its original condition and as directed by the County.

4.4. Measurement and Payment

- A. Payment for complying with this section shall be considered as included in the various items of work, and no additional compensation shall be allowed.

END OF SECTION 4

SECTION 5) EARTHWORK (Edom Hill & Beaumont)

5.1. General

The work in this section shall include furnishing all labor, supervision, tools, equipment, and materials for Bench Grading/Erosion Repair; Slope & Top Deck Erosion Repair; Berm Installation; Basin Excavation, Haul & Stockpile; Engineered Fill; Access Bench Re-Grading/Erosion backfill; and CMP Cleanout. This work shall include, but is not limited to: clearing, grubbing, excavation and compacted fill, crushed concrete and broken concrete sections haul, subgrade preparation, grading and compaction of aggregate material, earthen material and earthen material comingled with green waste/palm waste materials as shown on the Project Drawings and as directed by the County.

Materials, Execution and Payment for Engineered Fill (Section 5), CMP Clean-out (Section 5) and Shotcrete Drainage Structures (Section 6) within the Edom Hill Compost Facility Basin Area limits shown on Project Drawing Sheet 5 - Detail A shall be considered items of work within the Compost Facility Basin Area, and paid under Bid Item #15 as described in these Special Provisions and Contract Documents.

5.2. Materials

Bench Grading/Erosion Repair (Bid Item #1 – Edom Hill)

Within Trash Fill Limits - In-place material layers include in varying amounts from top to bottom: (1) palm waste, (2) comingled palm waste material and earthen soil, and (3) earthen material. Earthen material shall be obtained from the Final Cover Material Stockpile shown on the Project Drawings.

Outside Trash Fill Limits - In-place material along benches/access roads consist of earthen material, and varying amounts of aggregate and Green Waste / Palm Waste materials.

Slope & Top Deck Erosion Repair (Bid Item #2 – Edom Hill)

Earthen material shall be obtained from Final Cover Material Stockpile shown on the Project Drawings. This earthen material shall not contain brush, roots, sod, or other deleterious or unsuitable materials; and particle size shall not exceed three (3) inches.

Berm Installation (Bid Item #3a – Edom Hill & Bid Item #3b - Beaumont)

Earthen materials shall be obtained from the Onsite Earthen Material Borrow Area shown on the Project Drawings. These earthen materials shall not contain brush, roots, sod, or other deleterious or unsuitable materials; and particle size shall not exceed three (3) inches.

Basin Excavation, Haul and Stockpile (Bid Item #4 – Edom Hill)

In-place material composition within Basin #4 includes a surface layer of green waste materials comingled with earthen soil which covers the earthen basin bottom and slopes.

Engineered Fill – (Bid Item #5 – Edom Hill)

Earthen materials for the North Slope Confluence Area shall be obtained from the Final Cover Material Stockpile shown on the Project Drawings. Earthen materials for the Water Line Backfill shall be obtained from adjacent soils per Special Provisions Section 5.3 and the Project Drawings. These earthen materials shall not contain brush, roots, sod, or other deleterious or unsuitable materials; and particle size shall not exceed three (3) inches.

Engineered Fill within Compost Facility Basin Area – (Bid Item #15 – Edom Hill)

Earthen materials for the Compost Facility Basin Buttress shall be obtained from adjacent soils per Special Provisions Section 5.3 and the Project Drawings. These earthen materials shall not contain brush, roots, sod, or other deleterious or unsuitable materials; and particle size shall not exceed three (3) inches.

Access Bench Re-grade/Erosion Backfill – (Bid Item #6 – Edom Hill)

Earthen materials used for fill shall be from adjacent cut area, and shall not contain brush, roots, sod, or other deleterious or unsuitable materials. Particle size shall not exceed three (3) inches within the top three (3) feet of fill.

CMP Clean-out (Bid Item #15 – Edom Hill)

The existing in-place 18-inch CMP crossing under Edom Hill Road located north of, and adjacent to, the Compost Facility Basin Area as shown on the Project Drawings. This CMP crossing is currently filled with sediment.

Onsite Earthen Material Borrow Area (Edom Hill) is located east of the landfill unit as shown on the Project Drawings. See Special Provisions Section 5.3 for project applications.

Final Cover Material Stockpile (Edom Hill) is located along the south portion of the Onsite Earthen Material Borrow Area as shown on the Project Drawings. This stockpile contains approximately 40,000 to 60,000 cubic yards of usable material. See Special Provisions Section 5.3 for project applications.

Concrete Grindings Stockpile (Edom Hill) is located west of the landfill unit as shown on the Project Drawings. See Special Provisions Section 5.3 for project applications.

Onsite Earthen Material Borrow Area (Beaumont) is located along the north portion of the landfill property as shown on the Project Drawings. Project applications include berm construction and backfill along new hardscape structure installation.

5.3. Execution

Contractor shall notify the County at least 48 hours prior to mobilizing for each applicable earthwork item for each site in order for the County project representative and Contractor to confirm work area limits and access roads, and for discussion of proposed methodology and equipment for this work.

Contractor shall protect in place adjacent hardscape drainage structures, and environmental appurtenances including but limited to gas wells, gas collection pipe, vaults, etc.

5.3.1. Bench Grading/Erosion Repair (Edom Hill)

a) *Within Trash Fill Limits:*

- i. Contractor shall relocate earthen sediment deposits along benches to the Basin Excavation Stockpile within limits shown on the Project Drawings and as directed by the County project representative. Contractor shall use such method and equipment to minimize displacing palm waste material into open erosion cuts along benches. Contractor shall remove any Palm Waste/Green Waste Materials from erosion cuts prior to subsequent fill operation. Contractor shall spread sediment placed in the Basin Excavation Stockpile to create a grade-to-drain condition acceptable to the County.
- ii. Once the sediment deposit material quantity has been relocated to the Basin Excavation Stockpile, Contractor shall fill erosion cuts along each bench with earthen material taken from the Final Cover Material Stockpile. Contractor shall use such method and equipment to minimize blending earthen soil with palm waste material.
- iii. Earthen materials used for Bench Grading/Erosion Repair shall be moisture conditioned and compacted to obtain a near uniform condition using track or rubber-tire equipment. Contractor effort and resultant product shall be uniform and to the satisfaction of the County project representative.
- iv. Completed earthen surfaces shall be finished by track walking with dozer-type equipment or approved equal by the County project representative and left in a uniformly graded condition. Longitudinal fall along the flowline of completed benches shall in no case be less than 3.0%.
- v. Contractor shall perform this grading work in such manner as to reestablish minimum 3% transverse fall to the toe of the bench for bench widths exceeding twenty feet; and minimum 5% transverse fall to the toe of the bench for bench widths less than twenty feet.
- vi. Contractor shall cover exposed earthen bench surface areas with adjacent comingled earthen/palm waste material and palm waste material within these bench areas. This resultant cover layer shall be spread to create a uniform thickness layer to the satisfaction of the County project representative.
- vii. Contractor shall moisture-condition and track-walk the comingled earthen soil/palm waste and palm waste material layer using tracked equipment deemed acceptable to the County. Contractor shall obtain County

acceptance of Bench Grading/Erosion repair prior to proceeding with Palm Waste Installation (Bid Item #11) on any bench or portion of a bench within the project improvement limits.

b) *Outside Trash Fill Limits*

- i. Contractor shall repair parkway erosion cuts at locations shown on the Project Drawings. Material from the Onsite Earthen Material Borrow Area shall be used to repair erosion cuts where noted as Construction Note 1a on the Project Drawings. Concrete Grindings Stockpile material shall be used to repair erosion cuts where noted as Construction Note 1b on the Project Drawings.
- ii. Contractor shall prepare subgrade and install an improved access road section to Water Monitoring Well EH-6 where noted as Construction Note 1c. Subgrade preparation shall include moisture condition, grade and compact existing earthen material with the designated area limits to eliminate any erosion rills and generate a firm, stable and unyielding subgrade surface. Contractor shall install a six-inch thick section of Concrete Grindings Stockpile material over this prepared subgrade. This new section shall be graded and compacted to the satisfaction of the County. Area limits and corresponding linear foot pay quantity for this improved road section are shown on the Project Drawings.
- iii. Contractor shall remove sediment from locations shown on the Project Drawings; haul sediment to the Basin Excavation Stockpile located south of the landfill unit; and spread to create a grade-to-drain condition acceptable to the County.

5.3.2. Slope & Top Deck Erosion Repair (Edom Hill)

- a) Contractor shall relocate earthen soil from the Final Cover Material Stockpile for this erosion cut backfill work. Contractor shall remove any Palm Waste/Green Waste Materials from erosion cuts prior to this cut/fill operation.
- b) Erosion rills (maximum six-inch depth) shall be moisture conditioned and track-walked. Erosion cuts with maximum twelve-inch depth shall be graded and track-walked. Erosion cuts greater than 12-inch depth shall require earthen soil from the Final Cover Material Stockpile, and this fill shall be moisture conditioned and compacted in place in such manner to facilitate a firm, stable and unyielding earthen backfill.
- c) Finished surfaces of repaired areas shall be flush with adjacent hardscape structures and adjacent earthen slope surfaces. Contractor shall maintain/re-establish finished top deck surfaces at a minimum 3% slope to down drain locations. Once top deck and slope areas are completed to the satisfaction of the

County, Contractor may proceed with Palm Waste Placement Installation (Bid Item #11).

5.3.3. Berm Installation (Edom Hill & Beaumont)

- a) Earthen Berms shall be constructed at locations and to dimensions shown on the Project Drawings and as directed by the County.
- b) Contractor shall relocate earthen soil from the Onsite Earthen Material Borrow Area for berm installation work.
- c) Subgrade shall be firm, stable and unyielding, and contain no loose material as determined by the County. The subgrade shall adhere to the elevations and cross sections shown on the Project Drawings or as directed by the County.
- d) The Earthen Berm shall be compacted to a minimum of 90% relative compaction.
- e) Contractor shall provide moisture conditioning to earthen materials used for berm construction, and shall maintain adequate moisture throughout berm construction as deemed acceptable to the County.

5.3.4. Basin Excavation, Haul and Stockpile (Edom Hill)

- a) Contractor shall relocate excavated materials from Basin Four located north of the landfill unit to the Basin Excavation Stockpile located south of the landfill unit as shown on the Project Drawings.
- b) Contractor shall excavate basin materials, which include a surface layer of green waste material comingled with earthen soil covering the basin bottom and slopes, and the native bank earthen materials.
- c) Contractor shall haul materials using existing access roads/benches between Basin Four and the Basin Excavation Stockpile Area. Contractor shall stockpile the surface layer of green waste material comingled with earthen soil separately from excavated earthen materials. These excavated materials shall be placed in the designated stockpile limits, and finished in a grade to drain condition acceptable to the County.
- d) Contractor shall regrade perimeter of Basin 4 in accordance with the Basin Four Excavation and Grading Plan included in the Project Drawings. Material from the Onsite Earthen Material Borrow Area shall be used for engineered fill material as required to eliminate erosion rills/cuts and achieve line and grade design.

5.3.5. Engineered Fill (Edom Hill)

- a) North Slope Confluence Area - Contractor shall relocate earthen soil from the Final Cover Material Stockpile, and construct this engineered fill to the lines and grades shown on the Project Drawings.

- b) Compost Facility Basin Buttress - Contractor shall utilize adjacent earthen soils as shown on the Project Drawings, and construct this engineered fill to the lines and grades shown on the Project Drawings. Contractor shall implement and maintain traffic control devices and flagmen as required by the Contractor Site Safety Plan per Special Provisions Section 1.6.2.
- c) Water Line Backfill – Contractor shall utilize adjacent earthen soils for each of the three (3) offsite waterline backfill locations within the area shown on the Project Drawings. Existing lengths of the exposed pipe sections which cross native drainage swales range between three (3) and fifteen (15) feet. County estimates the installation of twelve (12) to twenty-four (24) inches of backfill cover thickness over the pipe with some additional fill placed along adjacent upstream and downstream areas will reestablish positive drainage at these locations. Contractor shall utilize a JCB-3C type tractor or approved equal, and shall protect-in-place this 6-inch PVC pipe. All locations shall be left in a grade-to-drain condition as directed by the onsite County representative. Special Provisions Sections 5.3.5 d) thru h) shall not apply to Water Line Backfill work; Contractor shall take care to ensure equipment does not damage this PVC water line.
- d) The upper six (6) inches of in-situ material shall be ripped, moisture-conditioned, and re-compacted as deemed by the County.
- e) The compacted surface shall be scarified to provide a good bond between the foundation material and the subsequent fill material. Subgrade shall be firm, stable and unyielding, and contain no loose material as determined by the County.
- f) Compacted engineered fill shall be placed and compacted in layers as specified herein. The Contractor shall spread soil evenly by mechanical equipment over the prepared subgrade. The Contractor shall place engineered fill material in thickness of loose lifts no greater than eight inches (8”) and compacted lifts no greater than six inches (6”). Each lift shall be spread evenly and compacted to obtain a near uniform condition in each layer. In areas of lift thickness greater than specified herein, the Contractor, prior to construction of additional lifts, must complete re-grading and compacting of the surface to the maximum specified lift thickness. The top of each previously compacted layer shall be scarified so that there is no lamination between layers.
- g) In lieu of onsite compaction testing, the equipment and effort to compact the engineered fill material shall be equivalent to a minimum of 90% relative compaction by estimation of the onsite County representative.
- h) All finished surfaces of this engineered fill area shall be track walked with dozer-type equipment or approved equal, and left in a uniformly graded condition.

5.3.6. Access Bench Re-grade/Erosion Backfill (Edom Hill)

- a) Work area is located alongside the south hardscape drainage channel upstream from the Western Basin as shown on Project Drawings. Excavated earthen material quantity taken from the Access Bench Re-grade limits shall be placed within the erosion area limits adjacent to the hardscape channel.
- b) Earthen material used as fill alongside the hardscape channel shall be moisture conditioned and compacted in place in such manner to facilitate a firm, stable and unyielding earthen backfill. Contractor shall make every reasonable effort, as agreed upon by the Contractor and County prior to the start of this work, to ensure placement methodology does not damage the hardscape channel.
- c) Finished surfaces of repaired areas shall be flush with adjacent hardscape structures and adjacent earthen slope surfaces, and graded to drain as shown on the Project Drawings and as directed by the onsite County representative.

5.3.7. CMP Clean-out (Edom Hill)

- a) Contractor shall implement and maintain traffic control devices and flagmen as required by the Contractor Site Safety Plan per Special Provisions Section 1.6.2.
- b) Contractor shall remove all sediment/debris from the existing 18-inch CMP which crosses under the landfill entrance road north of, and downstream of, the Compost Facility Sedimentation Basin. Sediment from this CMP shall be relocated to the Basin Excavation Stockpile limits and left in a grade to drain condition acceptable to the County. Removed debris that is not earthen material shall be considered refuse, and disposed of properly at the onsite Transfer Station facility.
- c) Contractor shall reconfigure the original shape to this damaged/bent pipe inlet and outlet. Work shall provide free-flowing inlet and outlet that does not inhibit drainage.
- d) Contractor shall grade to drain the parkway inlet and outlet areas to this CMP crossing as shown on the Project Drawings or as directed by the onsite County representative. Sediment from these parkways shall be relocated to the Basin Excavation Stockpile limits and left in a grade to drain condition acceptable to the County. Removed debris that is not earthen material shall be considered refuse, and disposed of properly at the onsite Transfer Station facility.

5.4. Measurement and Payment

- A. Payment for Bid Item No. 1 "Bench Grading/Erosion Repair" shall be based on the final in-place linear feet of Bench Grading/Erosion Repair constructed within the limits specified in the Project Drawings and as directed by the County. The final length of Bench Grading/Erosion Repair shall be verified by the County based on conventional ground measurement, and shall be measured to the nearest linear foot along the toe of slope. Payment shall be made, after acceptance, at the contract unit price per linear foot as stated in the Contractor's Proposal, Bid Item

No. 1. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of Bench Grading/Erosion Repair including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary to install Bench Grading/Erosion Repair in accordance with the Contract Documents. No additional compensation shall be given for Bench Grading/Erosion Repair completed outside the specified limits and dimensions unless otherwise ordered in writing by the County.

- B. Payment for Bid Item No. 2 "Slope & Top Deck Erosion Repair" shall be based on the final in-place square feet of Slope Erosion Repair constructed within the limits specified in the Project Drawings and as directed by the County. The final area of Slope & Top Deck Erosion Repair shall be verified by the County based on conventional ground measurement, and shall be measured to the nearest square foot. Payment shall be made, after acceptance, at the contract unit price per square foot as stated in the Contractor's Proposal, Bid Item No. 2. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of Slope & top Deck Erosion Repair including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary to install Slope & Top Deck Erosion Repair in accordance with the Contract Documents. No additional compensation shall be given for Slope & top Deck Erosion Repair completed outside the specified limits and dimensions unless otherwise ordered in writing by the County.
- C. Payment for Bid Item No. 3a "Berm Installation" shall be based on the final in-place linear feet of Earthen Berm constructed within the limits specified in the Project Drawings and as directed by the County at the Edom Hill Landfill. Payment for Bid Item No. 3b "Berm Installation" shall be based on the final in-place linear feet of Earthen Berm constructed within the limits specified in the Project Drawings and as directed by the County at the Beaumont Landfill. The final length of Earthen Berm shall be verified by the County based on conventional ground measurement, and shall be measured to the nearest linear foot. Payment shall be made, after acceptance, at the contract unit price per linear foot as stated in the Contractor's Proposal, Bid Item No. 3a and 3b, respectively. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of Earthen Berm including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary to install Earthen Berm in accordance with the Contract Documents. No additional compensation shall be given for Earthen Berms placed outside the specified limits and dimensions unless otherwise ordered in writing by the County.

- D. The measurement of the final quantity for Bid Item No. 4 "Basin Excavation, Haul, Stockpile" shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 4. Payment shall constitute full compensation to the Contractor for all work related to Basin Excavation, Haul, Stockpile including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Basin Excavation, Haul, Stockpile outside the specified limits and dimensions unless otherwise ordered in writing by the County.
- E. The measurement of the final quantity for Bid Item No. 5 "Engineered Fill" shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 5. Payment shall constitute full compensation to the Contractor for all work related to Engineered Fill including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Engineered Fill outside the specified limits and dimensions unless otherwise ordered in writing by the County.
- F. The measurement of the final quantity for Bid Item No. 6 "Access Bench Re-Grade/Erosion Backfill" shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 6. Payment shall constitute full compensation to the Contractor for all work related to Access Bench Re-Grade/Erosion Backfill including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Access Bench Re-Grade/Erosion Backfill outside the specified limits and dimensions unless otherwise ordered in writing by the County.
- G. The measurement of the final quantity for Engineered Fill within the Edom Hill Compost Facility Basin Area and CMP Clean-out as shown in Project Drawing Sheet 5 - Detail A shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 15. Work under Bid Item #15 includes Earthwork - Engineered Fill for reconstructing the basin buttress, Earthwork - CMP Clean-out, and new Shotcrete Drainage Structures within the limits shown in Project Drawing Sheet 5 - Detail A. Payment shall constitute full compensation to the Contractor for all work related to Compost Facility Basin Area Improvements including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Compost Facility Basin Area Improvements outside the specified limits and dimensions unless otherwise ordered in writing by the County.

END OF SECTION 5

SECTION 6) HARDSCAPE STRUCTURES (Edom Hill & Beaumont)

6.1. General

The work covered by this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for the construction of Concrete and Shotcrete Structures, Masonry Splash Walls, and Rip-Rap. The work shall include but not be limited to grading, excavation, hauling, subgrade preparation, and construction of the structures, walls and rip-rap to the elevations, lines and grades and at the locations shown on the Project Drawings and as directed by the County. This work shall also include any cut or backfill necessary to achieve finished elevations adjacent to structures and walls once construction/installation is complete.

Materials, Execution and Payment for Engineered Fill (Section 5), CMP Clean-out (Section 5) and Shotcrete Drainage Structures (Section 6) within the Edom Hill Compost Facility Basin Area limits shown on Project Drawing Sheet 5 - Detail A shall be considered items of work within the Compost Facility Basin Area, and paid under Bid Item #15 as described in these Special Provisions and Contract Documents.

6.2. Materials

- A. The Contractor shall adhere to Stormwater Best Management Practice (BMP) WM-8 – Concrete Waste Management as published by the California Stormwater Quality Association. This will include but not limited to the installation and removal of onsite temporary concrete washout facilities. Contractor shall provide application of this BMP at the direction of, and location(s) directed by, the County.
- B. Portland Cement Concrete (PCC) for drainage inlets shall be Class 520-A-2500 in conformance with Section 201-1 of the Standard Specifications.
- C. Reinforcing steel (rebar) for drainage inlets shall be grade 60 and shall conform to subsection 201-2.2.1 of the Standard Specifications. The rebar size is shown on the Project Drawings.
- D. PCC material for V-ditch channels shall be Class 650-D-3250P (Shotcrete) in conformance with Section 201-1 of the Standard Specifications and shall be air-placed in conformance with sub-section 303-2.1.3 Method B (Shotcrete) of the Standard Specifications.
- E. Fiber Reinforcement for Class 650-D-3250P (Shotcrete) shall conform to sub-section 201-2.3 Type III of the Standard Specifications.
- F. Welded Wire Reinforcement (WWR) for the V-ditch channels shall conform to sub-section 201-2.2.3 of the Standard Specifications. The gage of the wire and dimensions of the mesh are specified in the Project Drawings.

- G. Type II white-pigmented curing compound for PCC structures shall conform to sub-section 201-4.1.1 of the Standard Specifications.
- H. Masonry Splash Wall –
- a. Concrete block masonry units (CMU) for wall structure shall be six-inch by eight-inch by eighteen-inch (6" x 8" x 18") CMU and shall conform to sub-section 202-2.2 of the Standard Specifications.
 - b. Reinforced concrete for wall footing shall be Class 560-C-3250 in conformance Section 201-1 of the Standard Specifications.
 - c. Reinforcing steel (rebar) for wall footing shall be grade 60 and shall conform to sub-section 201-2.2.1 of the Standard Specifications. The rebar size is shown on the Project Drawings.
 - d. Mortar, grout, and water used in construction of CMU shall conform to sub-section 202-2.1 and Section 202-3 of the Standard Specifications. Mortar shall attain a minimum compressive strength of 1,800 psi and grout shall attain a minimum compressive strength of 2,000 psi in 28 days when tested in accordance with ASTM C109.
- I. Rip-Rap –
- a. Contractor shall utilize the existing demotion pile of unreinforced concrete v-ditch located adjacent to the transfer station sedimentation basin as shown on the Project Drawings.

6.3. Execution

- A. PCC structures shall be placed at locations shown on the Project Drawings and as directed by the onsite County representative.
- B. The subgrade for PCC structures shall be prepared either by excavating or filling, and shall conform to lines and grades of existing drainage structures, and be located as shown on the Project Drawings. Where the structures are in native cut, the upper six (6) inches of subgrade shall be compacted to a minimum of 90% of the maximum density as determined per ASTM D1557. This shall be achieved by scarifying the exposed surface to a depth of six (6) inches and re-compacting this earthen section as required by the Specifications. For areas requiring engineered fill, the finished subgrade shall be firm and suitable for placement of PCC structures, and shall be compacted to a minimum of ninety-percent (90%) of the maximum density as determined per ASTM D1557. Clearing, grubbing and excavation for the PCC structures shall comply with the provisions of Section 300-7 of the Standard Specifications.

- C. Contractor shall saw-cut existing concrete/shotcrete structures as necessary or as directed by the County to provide a competent edged surface for tie-in to new hardscape structures.
- D. Mortar blocks with wire ties, or other means acceptable to the County shall be used to secure welded wire mesh reinforcement firmly in place.
- E. Contractor shall notify County site personnel at least one day prior to delivery of PCC materials to the Edom Hill and Beaumont Landfills for each day of delivery. Delivery trucks shall access work areas by use access routes approved in advance by the County.
- F. Concrete mixing shall comply with Section 201-1.4 of the Standard Specifications.
- G. Concrete shall be installed and finished to provide positive drainage towards downstream drainage structures.
- H. Concrete for shotcrete "V" ditch and trapezoidal channels shall be air-placed concrete in accordance with sub-section 303-2.1.3 Method B (Shotcrete), part 2 of 303-2.2 for Method B, 303-2.4, 303-2.6, 303-2.7, 303-2.8, 303-2.9 and 303-1.10 of the Standard Specifications. Concrete shall be installed and finished to provide positive drainage towards downstream drainage structures.
- I. Weakened plane joints for PCC structures shall be installed perpendicular to the water flow direction at ten (10) foot intervals along the water flow direction as directed by the County. Depth of joint shall be one (1) inch.
- J. Type II white-pigmented curing compound shall be applied to all concrete and shotcrete structures in accordance with the requirements of sub-sections 201-4.1.2 and 303-1.10.
- K. Open joints shall be constructed using a suitable material that is subsequently removed. PCC corners shall not be chipped or broken when removing material. Reinforcement shall not be extended through an open joint. Joint filler shall be placed in position before PCC is placed. Joints shall be filled with mastic to prevent the passage of concrete. PCC edges at joints shall be finished using an edger.
- L. As deemed necessary by the County, sets of three (3) test cylinders of PCC being placed will be cast and tested by the County. One (1) of the test cylinders shall be tested at 7 days for 70 percent of project-specified design strength. The remaining two cylinders shall be tested at 14 days and 28 days (for full design strength) respectively. PCC compressive strength testing shall be per ASTM C39 and ASTM C31. The cylinders shall be paid for by the County.

- M. Contractor shall collect and retain possession of each and every PCC load ticket at the time of material delivery to the project site. Contractor shall present a complete set of daily load tickets to the County on the day PCC material(s) is placed.
- N. Masonry Splash Walls shall be constructed in accordance with Section 303-4 of the Standard Specifications; and shall be placed at locations adjacent to existing hardscape structures as shown on the Project Drawings and as directed by the onsite County representative.
- O. Subgrade surfaces for Masonry Splash Wall footings shall be prepared either by excavating or filling, and shall conform to lines and grades of existing adjacent drainage structures. Where the structures are in native cut, the upper six (6) inches of subgrade shall be compacted to a minimum of 90% of the maximum density as determined per ASTM D1557. This shall be achieved by scarifying the exposed surface to a depth of six (6) inches and re-compacting this earthen section as required by the Specifications. For areas requiring engineered fill, the finished subgrade shall be firm and suitable for placement of PCC structures, and shall be compacted to a minimum of ninety-percent (90%) of the maximum density as determined per ASTM D1557.
- P. Masonry Splash Wall footings shall be placed adjacent to the outside vertical edge of existing hardscape structures for the purpose of preventing water infiltration/erosion between the splash wall and the drainage structure along the entire length of the splash wall. The entire outside edge of the hardscape structure shall be clean, and free of soil or loose particles when the masonry wall footing is installed.
- Q. Contractor shall provide grade-to-drain condition adjacent to newly-installed hardscape drainage structures as directed/accepted by the onsite County representative. Contractor shall provide grade-to-drain condition adjacent to newly-installed Masonry Splash Walls as shown on the Project Drawings.
- R. Rip-Rap - Contractor shall break existing concrete v-ditch sections into 4-foot to 6-foot sections acceptable to the County, and place these sections as rip-rap at the existing down drain outlet located on the Project Drawings in such position and configuration acceptable to the onsite County representative.

6.4. Measurement and Payment

- A. Payment for Bid Item No. 7 "Concrete Drainage Structures" shall be based on the final in-place square footage of ground covered with Concrete Drainage Structures within the limits specified in the Project Drawings and as directed by the County. The area of the final surface shall be verified by the County based on conventional ground surveying. Quantity shall be calculated based on the "true" area and to the nearest square foot utilizing digital terrain modeling method. Payment shall be made, after acceptance, at the contract unit price per square foot

as stated in the Contractor's Proposal, Bid Item No. 7. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of Concrete Drainage Structures including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary to install Concrete Drainage Structures in accordance with the Contract Documents. No additional compensation shall be given for Concrete Drainage Structures placed outside the specified limits and dimensions, or for PCC keyways, unless otherwise ordered in writing by the County.

- B. Payment for Bid Item No. 8 "Shotcrete Drainage Structures" shall be determined by the County based on field measurements of the axial length (linear feet) of Shotcrete Drainage Structures as shown on the Project Drawings and as directed by the County. Payment shall be made, after acceptance, at the contract unit price per linear foot as stated in the Contractor's Proposal, Bid Item No. 8. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of Shotcrete Drainage Structures including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary to install Shotcrete Drainage Structures in accordance with the Contract Documents. No additional compensation shall be given for Shotcrete Drainage Structures placed outside the specified limits and dimensions, or for PCC keyways, unless otherwise ordered in writing by the County.
- C. The measurement of the final quantity for Bid Item No. 9 "Masonry Splash Wall" shall include reinforced concrete footing, and shall be determined by the County based on the field measurements of the axial length (linear feet) along the centerline of the completed masonry splash wall. Payment for the masonry splash wall shall be based upon the unit price per linear foot as stated in the Contractor's Proposal, Bid Item No. 9. Payment for the masonry splash wall shall include subgrade preparation and construction of reinforced concrete footing and masonry wall including reinforcing steel and grout material as specified in the Contract Documents and indicated in the Project Drawings. Payments shall include full compensation for furnishing all labor, materials, tools, equipment, and incidentals, and for doing all the work involved in constructing the masonry splash wall completed in place.
- E. The measurement of the final quantity for Bid Item No. 10 "Rip-Rap" shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 10. Payment shall constitute full compensation to the Contractor for all work related to Rip-Rap including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Rip-Rap outside the specified limits and dimensions unless otherwise ordered in writing by the County.

- G. The measurement of the final quantity for Shotcrete Drainage Structures within the Edom Hill Compost Facility Basin Area as shown in Project Drawing Sheet 5 - Detail A shall be made, after acceptance, at the contract lump sum price as stated in the Contractor's Proposal, Bid Item No. 15. Work under Bid Item #15 includes Earthwork - Engineered Fill for reconstructing the basin buttress, Earthwork - CMP Clean-out, and new Shotcrete Drainage Structures within the limits shown in Project Drawing Sheet 5 - Detail A. Payment shall constitute full compensation to the Contractor for all work related to Compost Facility Basin Area Improvements including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Compost Facility Basin Area Improvements outside the specified limits and dimensions unless otherwise ordered in writing by the County.

END OF SECTION 6

SECTION 7) ROCK BOULDER RELOCATION/PLACEMENT (*Mead Valley*)

7.1. General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for relocating rock boulders from the designated onsite procurement area to selected locations along the property boundary, and resetting existing rock boulders along selected locations along the property boundary as shown on the Project Drawings and as directed by the County.

7.2. Materials

- A. Acceptable rock size from the onsite procurement area shall have approximate mean spherical diameter of forty-eight (48) inches; or typical rectangular shape with 75-inch average length and 26-inch average height; and weight in excess of 2.5 ton (5,000 pounds).
- B. Rocks from the onsite procurement area shall be of such shape as to form stable rock barrier along property line as determined by the onsite County project representative.

7.3. Execution

- A. Contractor shall notify County ten (10) calendar days prior to Contractor start date for Rock Boulder Relocation/Placement. County shall schedule and perform a biological clearance survey for the Rock Removal Secondary Area Limits during this interim period. If approved by the County, Contractor may utilize this area for Rock Boulder selection. Contractor would then have thirty (30) calendar days to complete rock removal within this secondary area under this survey.
- B. Contractor shall perform rock boulder resetting, and relocation/placement work within the areas designated on the Project Drawings, including but not limited to the rock procurement area, selected property boundary locations, and the access road(s) designed by the County for Contractor use.
- C. Rock boulder removal work from the onsite procurement area shall be performed so as to avoid impacts to drainages, wetlands, and waterways as solely determined by the County.
- D. County representatives shall monitor work areas, including procurement locations and associated access routes, for environmentally sensitive plant/animal species per the Multiple Species Habitat Conservation Plan (MSHCP) for this site. Site conditions could require suspension of work in a given area for additional evaluation.
- E. Contractor shall place rock boulders adjacent to and inside the landfill property

line or chain-link fencing so that placed rock boulders remain entirely within the landfill property.

- F. Rock boulders shall be placed so that longitudinal axis is normal to the ground surface, and arranged so that each rock has a stable, multi-point (or continuous) contact with the ground surface. Rock boulders shall be placed in contact with adjacent boulders in such manner for blocking two wheeled vehicular access to the landfill site as determined by the onsite County representative. Placing of rock boulders by dumping shall not be permitted.
- G. Contractor shall provide dust control throughout the duration of this work which shall adhere to South Coast Air Quality Management District Rule 403 Fugitive Dust regulations throughout this rock relocation operation.
- H. Contractor shall notify the County at least 48 hours prior to mobilizing for Onsite Rock Relocation work so that the County representative may meet the Contractor onsite to point out Do Not Enter zones, confirm work area limits, access roads, etc.

7.4. Measurement and Payment

- A. Payment for Bid Item No. 13 "Onsite Rock Boulder Relocation/Placement" shall be made, after acceptance, at the contract linear foot price for placement lengths shown on the Project drawings as stated in the Contractor's Proposal, Bid Item No. 13. Payment shall constitute full compensation to the Contractor for all work related to Onsite Rock Boulder Relocation/Placement/Resetting including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. Payment shall also constitute full compensation for furnishing all labor, supervision, materials, tools, and equipment necessary for Onsite Rock Boulder Relocation / Placement / Resetting in accordance with the Contract Documents. No additional compensation shall be given for Onsite Rock Boulder Relocation/Placement/Resetting placed outside the specified limits and dimensions unless otherwise ordered in writing by the County. No additional compensation shall be given for relocation of procurement work resulting from MSHCP considerations.

END OF SECTION 7

SECTION 8) GREEN WASTE/PALM WASTE APPLICATIONS (Edom Hill, Mead Valley and Coachella)

8.1. General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for: (1) coordinating delivery; and placing, spreading and track-walking Processed Palm Waste material within designated areas at the Edom Hill landfill; and (2) spreading, relocating and track-walking of in-place Processed Green Waste and Palm Waste materials within designated areas at the Mead Valley and Coachella landfill sites located in Riverside County as shown on the Project Drawings and as directed by the County.

8.2. Materials

- A. Palm Waste Installation (Bid Item #11 – Edom Hill)
Processed Palm Waste shall be delivered from the Burrtec compost facilities at the Edom Hill and Coachella landfill sites under agreement between Burrtec Industries and the County. This Processed Palm Waste is defined as palm waste material which has been ground so that the maximum dimension in any direction is six (6) inches or less; and shall be composed of palm waste material only, and free of refuse and contaminants as determined by the County.
- B. Green Waste/Palm Waste - Spread, Relocate and Track-Walk (Bid Item 14a – Mead Valley and Bid Item 14b - Coachella)
In-place Green Waste and Processed Palm Waste at the Mead Valley and Coachella landfill units are defined as green waste materials and palm waste materials, respectively, which have been ground so that the maximum dimension in any direction is six (6) inches or less. In-place material at the Mead Valley Landfill subject to this project work includes Processed Green Waste on designated slope areas shown on the Project Drawings. In-place and stockpiled Palm Waste material at the Coachella Landfill subject to this project work is located in the southwest corner area of the landfill unit as shown on the Project Drawings.

8.3. Execution

8.3.1. Palm Waste Installation (Edom Hill)

- A. Contractor shall perform Palm Waste Installation within the bench and slope areas shown on the Project Drawings.
- B. The Contractor shall coordinate delivery of Palm Waste loads with the Burrtec Waste Industries (Burrtec) representative designated by the County; Contractor shall work directly with that Burrtec representative. To maximize the efficient operation and progress of Contractor work, Contractor shall determine a required Palm Waste quantity for each work area, and the location where each load is

delivered by Burrtec. Contractor shall coordinate delivery schedules with Burrtec in such manner to expedite progress of the work.

- C. County shall verify Palm Waste load deliveries are acceptable prior to handling by the Contractor.
- D. The Contractor shall provide the equipment and manpower to evenly place, spread and track-walk Processed Palm Waste in a safe and efficient manner.
- E. Processed Palm Waste material shall not be placed or spread on hardscape (concrete or asphalt) structures. Any material placed within these areas shall be removed by the Contractor.
- F. Contractor shall provide a three (3) to six (6) inch layer of Processed Palm Waste material over designated areas shown on the Project Drawings and as directed by the onsite County representative.
- G. Processed Palm Waste material shall be spread by use of a manure spreader or similar type of equipment as approved in advance by the County. In no case shall the depth of spread Palm Waste material be less than three (3) inches or greater than six (6) inches in final placed form.
- H. Contractor shall apply adequate compaction to the spread Palm Waste as determined by the County, and shall apply adequate water for dust control purposes. Track-walking shall be performed by a CAT D-6 type dozer or larger as approved by the County.
- I. Contractor heavy equipment and vehicles shall travel no closer than ten (10) feet to any environmental structure. Palm Waste material shall be hand-placed within ten (10) feet of environmental structures including but not limited to, above-ground pipe system, wells, bollards, etc. Any material placed on these structures shall be removed by the Contractor. Green Waste material shall be placed no closer than five (5) feet from vault boxes.

Provider may stockpile a combined maximum of one hundred (100) tons of Palm Waste material at any time during spreading operations.

8.3.2. Green Waste/Palm Waste – Spread & Track-Walk (Mead Valley & Coachella)

- A. Contractor shall spread, relocate and track-walk Green Waste material within designated slope areas at the Mead Valley Landfill within the limits shown on the Project Drawings.
- B. Contractor shall spread, relocate and track-walk Palm Waste material within designated bench and slope areas at the Coachella Landfill within the limits shown on the Project Drawings.
- C. Contractor heavy equipment and vehicles shall travel no closer than ten (10) feet to any environmental structure. Palm Waste material shall be hand-placed within

ten (10) feet of environmental structures including but not limited to, above-ground pipe system, wells, bollards, etc. Any material placed on these structures shall be removed by the Contractor. Green Waste material shall be placed no closer than five (5) feet from vault boxes.

- D. Contractor shall apply adequate compaction to the spread Green Waste and Palm Waste as determined by the County, and shall apply adequate water for dust control purposes. Track-walking shall be performed by a CAT D-6 type dozer or larger as approved by the County.
- E. Mead Valley – The existing Green Waste layer along slopes shall be spread to provide a uniform thickness material mat. Contractor shall rework this Green Waste layer to eliminate visible piles, minimize undulations, and provide access for tractor/bobcat-type vegetative mowing equipment. Any excess material generated from this work shall be relocated and spread along the designated Top Deck placement area limits shown on the Project Drawings. This top deck area currently contains no green waste-type layer. In no case shall the depth of spread Green Waste material on this top deck area be less than three (3) inches or greater than six (6) inches in final placed form.
- F. Coachella - The Palm Waste stockpiles shall be relocated and spread to provide a uniform thickness material mat on benches and slopes within the area limits shown on the Project Drawings. Contractor shall provide a three (3) to six (6) inch layer of Processed Palm Waste material over designated areas shown on the Project Drawings and as directed by the onsite County representative.

8.4. Measurement and Payment

- A. The measurement of the final quantity for Bid Item No. 11 “Edom Hill - Palm Waste Installation” shall be made, after acceptance, at the contract lump sum price as stated in the Contractor’s Proposal, Bid Item No. 11. Payment shall constitute full compensation to the Contractor for all work related to “Edom Hill - Palm Waste Installation” including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for “Edom Hill - Palm Waste Installation” outside the specified limits and dimensions unless otherwise ordered in writing by the County.
- B. The measurement of the final quantity for Bid Item No. 14a “Mead Valley - Green Waste – Spread, Relocate, and Track-Walk” and No. 14b “Coachella - Palm Waste – Spread, Relocate and Track-Walk” shall be made, after acceptance, at the contract lump sum price as stated in the Contractor’s Proposal, Bid Item No. 14a and Bid Item No. 14b. Payment shall constitute full compensation to the Contractor for all work related to spreading, relocating and track-walking Green Waste and Palm Waste including but not limited to all labor, material, tools, equipment, and incidentals, and any other material or other work required by the Contract Documents. No additional compensation shall be given for Bid Item No.

14a "Mead Valley - Green Waste – Spread, Relocate, and Track-Walk" and No. 14b "Coachella - Palm Waste – Spread, Relocate and Track-Walk" outside the specified limits and dimensions unless otherwise ordered in writing by the County.

END OF SECTION 8

SECTION 9) AUTHORIZED TIME & MATERIALS WORK (All Sites)

9.1. General

The County shall have the right to add work of a different character or function, and have the Contractor perform such added work when such work is considered by the County to be appurtenant to the satisfactory completion of the project. "Authorized Time and Materials" shall be made when prior authorization and approval has been provided to the Contractor by the County for work of a different character or function and for which no basis for payment is prescribed in the Contract Documents.

The Contractor shall provide a rate schedule for all labor and equipment that may reasonably be anticipated for use during the project. Labor rates shall be consistent with those required by the prevailing wage rate requirements of the Contract and shall reflect all benefits and employer costs. Once the labor and equipment rates have been approved by the Project Manager, they will become the basis for compensation for any Time and Material work requested by the County. The Contractor is advised, however, that there will be no compensation from the Time and Material Allocation unless the work has been authorized in writing by the Project Manager. Additionally, use of the Time and Material Allocation will be at the sole discretion of the County. All or any portion of the allocation amount may be deleted from the Contract.

The signing of the contract by the Contractor will be deemed to be an agreement on his part to perform the added work, as and when ordered by the County. If the required added work results in delay to the project, the Contractor will be given an appropriate extension of time.

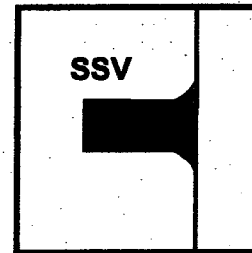
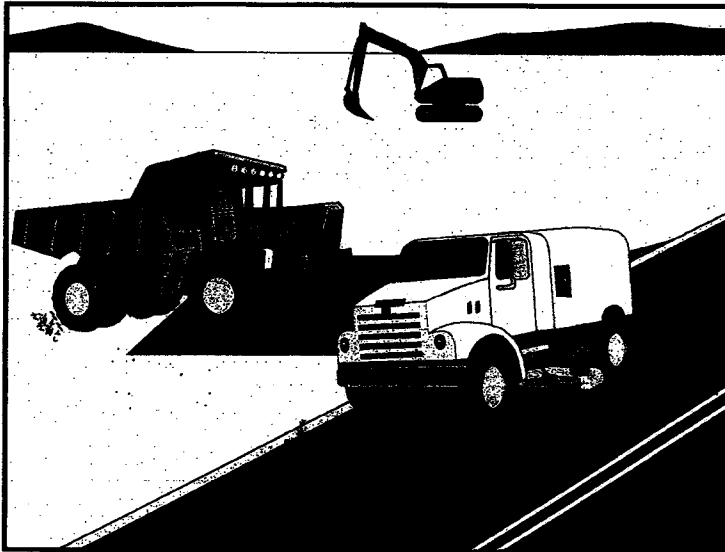
The cost of all work performed by the Contractor on an "Authorized Time and Material" basis will be computed in the manner described in Section 7.3. of the General Provisions in the Contract Documents, and the compensation thus provided shall be full payment to the Contractor related to the authorized time and material work.

END OF SECTION 9

Appendix A
BMP Installation Details
from the
CASQA/Cal-Trans Stormwater BMP Handbook

Street Sweeping and Vacuuming

SC-7



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose Practices to remove tracked sediment to prevent the sediment from entering a storm drain or watercourse.

Appropriate Applications These practices are implemented anywhere sediment is tracked from the project site onto public or private paved roads, typically at points of ingress/egress.

Limitations Sweeping and vacuuming may not be effective when soil is wet or muddy.

Standards and Specifications

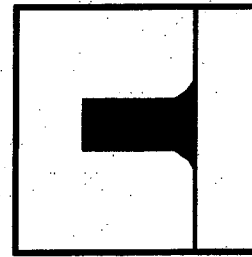
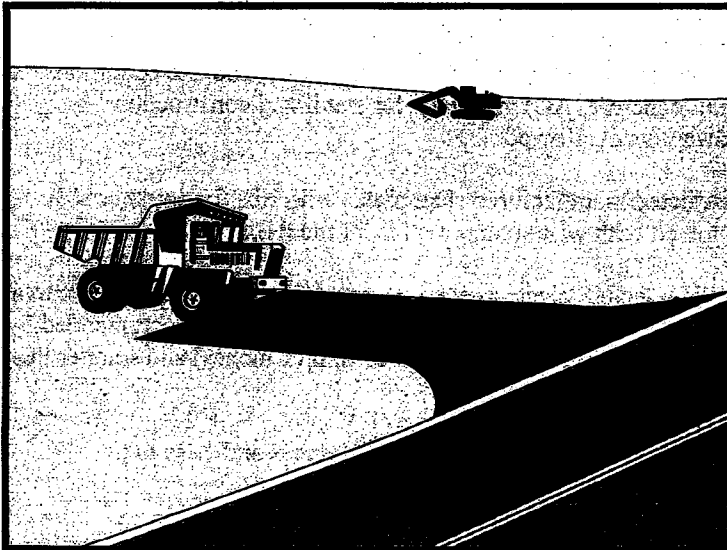
- Kick brooms or sweeper attachments shall not be used.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking shall be swept and/or vacuumed daily.
- If not mixed with debris or trash, consider incorporating the removed sediment back into the project.

Maintenance and Inspection

- Inspect ingress/egress access points daily and sweep tracked sediment as needed, or as required by the Resident Engineer (RE).
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite in conformance with the provisions in Standard Specifications Section 7-1.13.



Stabilized Construction Entrance/Exit **TC-1**



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose A stabilized construction access is defined by a point of entrance/exit to a construction site that is stabilized to reduce the tracking of mud and dirt onto public roads by construction vehicles.

Appropriate Applications

- Use at construction sites:
 - Where dirt or mud can be tracked onto public roads.
 - Adjacent to water bodies.
 - Where poor soils are encountered.
 - Where dust is a problem during dry weather conditions.
- This BMP may be implemented on a project-by-project basis in addition to other BMPs when determined necessary and feasible by the Resident Engineer (RE).

Limitations

- Site conditions will dictate design and need.

Standards and Specifications

- Limit the points of entrance/exit to the construction site.
- Limit speed of vehicles to control dust.
- Properly grade each construction entrance/exit to prevent runoff from leaving the construction site.
- Route runoff from stabilized entrances/exits through a sediment-trapping device before discharge.
- Design stabilized entrance/exit to support the heaviest vehicles and equipment that will use it.



Stabilized Construction Entrance/Exit **TC-1**

- Select construction access stabilization (aggregate, asphaltic concrete, concrete) based on longevity, required performance, and site conditions. The use of asphalt concrete (AC) grindings for stabilized construction access/roadway is not allowed.
- Use of constructed/manufactured steel plates with ribs for entrance/exit access is allowed with written approval from the RE.
- If aggregate is selected, place crushed aggregate over geotextile fabric to at least 300 mm (12 in) depth, or place aggregate to a depth recommended by the RE. Crushed aggregate greater than 75 mm (3 inches) and smaller than 150 mm (6 inches) shall be used.
- Designate combination or single purpose entrances and exits to the construction site.
- Implement BMP SC-7, "Street Sweeping and Vacuuming" as needed and as required.
- Require all employees, subcontractors, and suppliers to utilize the stabilized construction access.
- All exit locations intended to be used continuously and for a period of time shall have stabilized construction entrance/exit BMPs (TC-1 "Stabilized Construction Entrance/Exit" or TC-3 "Entrance/Outlet Tire Wash").

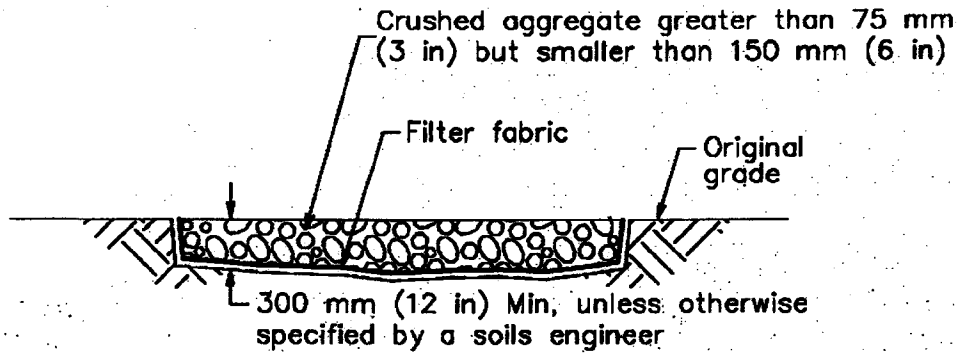
Maintenance and Inspection

- Inspect routinely for damage and assess effectiveness of the BMP. Remove aggregate, separate and dispose of sediment if construction entrance/exit is clogged with sediment or as directed by the RE.
- Keep all temporary roadway ditches clear.
- Inspect for damage and repair as needed.

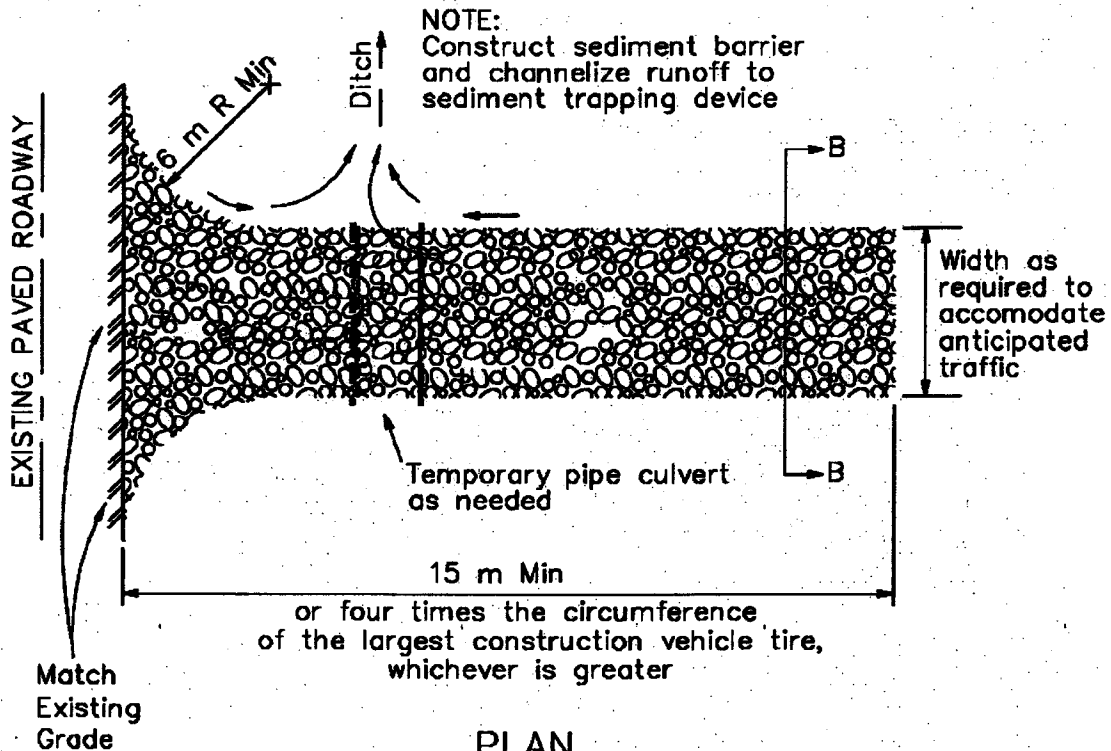


Stabilized Construction Entrance/Exit

TC-1



SECTION B-B
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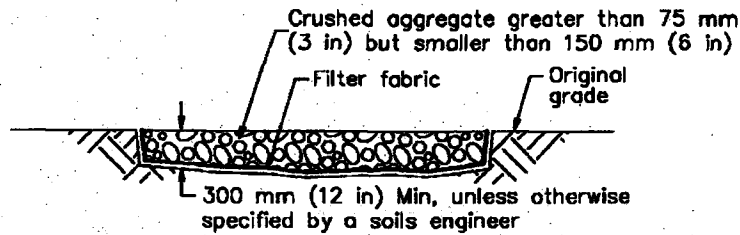
PLAN
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Stabilized Construction Entrance/Exit (Type 1)



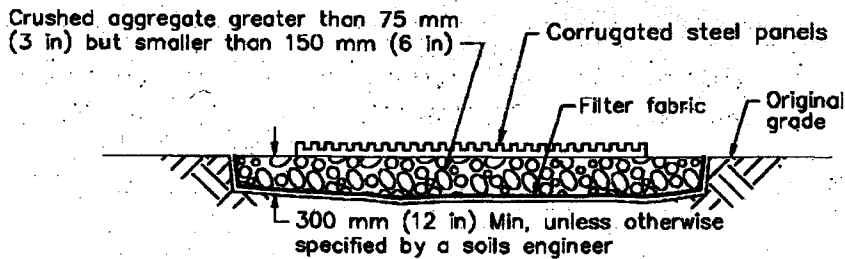
Stabilized Construction Entrance/Exit

TC-1



SECTION B-B

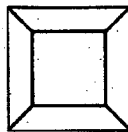
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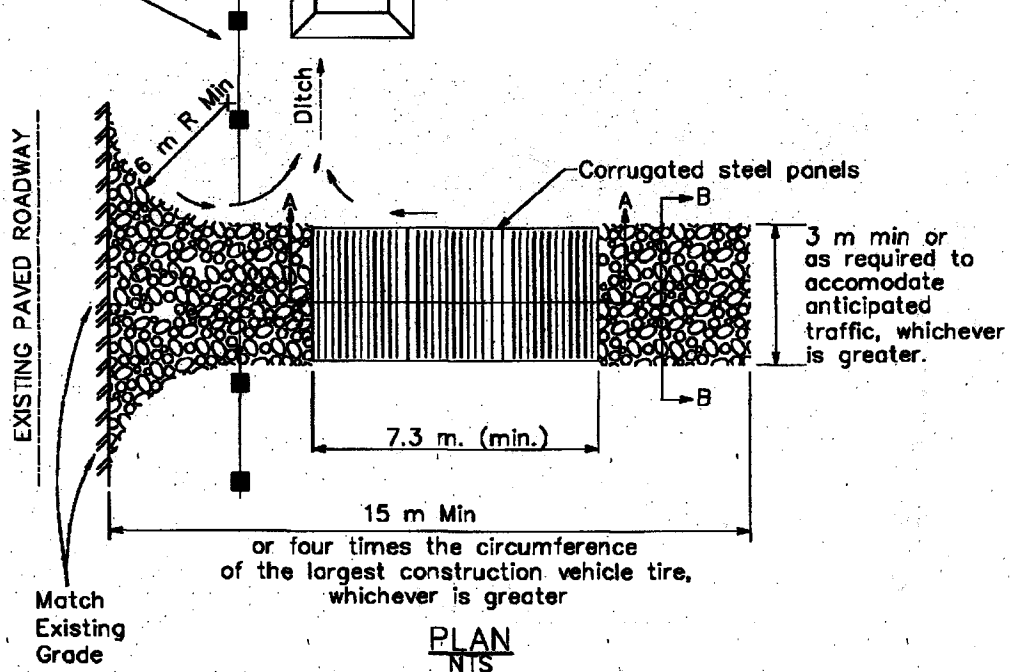
SECTION A-A

NOT TO SCALE

NOTE:
Construct sediment barrier and channelize runoff to sediment trapping device



Sediment trapping device



Stabilized Construction Entrance/Exit (Type 2)



Description

Drain inserts are manufactured filters or fabric placed in a drop inlet to remove sediment and debris. There are a multitude of inserts of various shapes and configurations, typically falling into one of three different groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are one box; that is, the setting area and filtration through media occur in the same box. Some products consist of one or more trays or mesh grates. The trays may hold different types of media. Filtration media vary by manufacturer. Types include polypropylene, porous polymer, treated cellulose, and activated carbon.

California Experience

The number of installations is unknown but likely exceeds a thousand. Some users have reported that these systems require considerable maintenance to prevent plugging and bypass.

Advantages

- Does not require additional space as inserts as the drain inlets are already a component of the standard drainage systems.
- Easy access for inspection and maintenance.
- As there is no standing water, there is little concern for mosquito breeding.
- A relatively inexpensive retrofit option.

Limitations

Performance is likely significantly less than treatment systems that are located at the end of the drainage system such as ponds and vaults. Usually not suitable for large areas or areas with trash or leaves than can plug the insert.

Design and Sizing Guidelines

Refer to manufacturer's guidelines. Drain inserts come in many configurations but can be placed into three general groups: socks, boxes, and trays. The sock consists of a fabric, usually constructed of polypropylene. The fabric may be attached to a frame or the grate of the inlet holds the sock. Socks are meant for vertical (drop) inlets. Boxes are constructed of plastic or wire mesh. Typically a polypropylene "bag" is placed in the wire mesh box. The bag takes the form of the box. Most box products are

Design Considerations

- Use with other BMPs
- Fit and Seal Capacity within Inlet

Targeted Constituents

- ✓ Sediment
- ✓ Nutrients
- ✓ Trash
- ✓ Metals
- ✓ Bacteria
- ✓ Oil and Grease
- ✓ Organics

Removal Effectiveness

See New Development and Redevelopment Handbook-Section 5.



one box; that is, the setting area and filtration through media occurs in the same box. One manufacturer has a double-box. Stormwater enters the first box where setting occurs. The stormwater flows into the second box where the filter media is located. Some products consist of one or more trays or mesh grates. The trays can hold different types of media. Filtration media vary with the manufacturer: types include polypropylene, porous polymer, treated cellulose, and activated carbon.

Construction/Inspection Considerations

Be certain that installation is done in a manner that makes certain that the stormwater enters the unit and does not leak around the perimeter. Leakage between the frame of the insert and the frame of the drain inlet can easily occur with vertical (drop) inlets.

Performance

Few products have performance data collected under field conditions.

Siting Criteria

It is recommended that inserts be used only for retrofit situations or as pretreatment where other treatment BMPs presented in this section area used.

Additional Design Guidelines

Follow guidelines provided by individual manufacturers.

Maintenance

Likely require frequent maintenance, on the order of several times per year.

Cost

- The initial cost of individual inserts ranges from less than \$100 to about \$2,000. The cost of using multiple units in curb inlet drains varies with the size of the inlet.
- The low cost of inserts may tend to favor the use of these systems over other, more effective treatment BMPs. However, the low cost of each unit may be offset by the number of units that are required, more frequent maintenance, and the shorter structural life (and therefore replacement).

References and Sources of Additional Information

Hrachovec, R., and G. Minton, 2001, Field testing of a sock-type catch basin insert, Planet CPR, Seattle, Washington

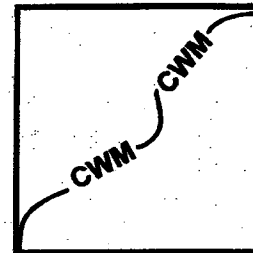
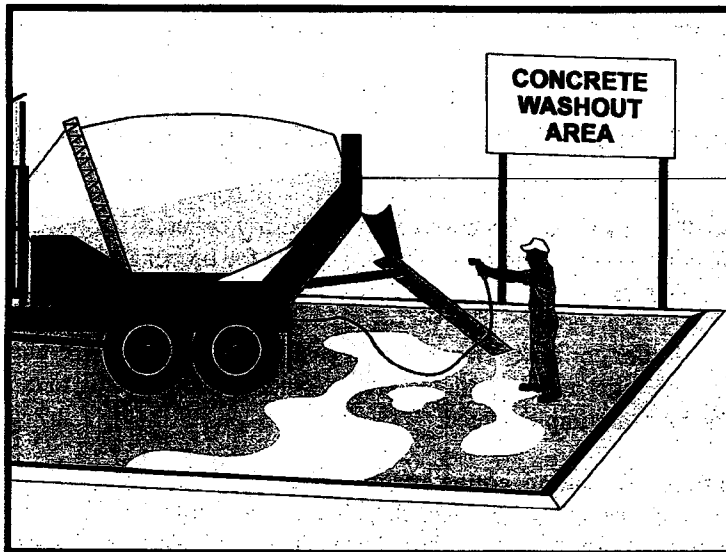
Interagency Catch Basin Insert Committee, Evaluation of Commercially-Available Catch Basin Inserts for the Treatment of Stormwater Runoff from Developed Sites, 1995

Larry Walker Associates, June 1998, NDMP Inlet/In-Line Control Measure Study Report

Manufacturers literature

Santa Monica (City), Santa Monica Bay Municipal Stormwater/Urban Runoff Project - Evaluation of Potential Catch basin Retrofits, Woodward Clyde, September 24, 1998

Woodward Clyde, June 11, 1996, Parking Lot Monitoring Report, Santa Clara Valley Nonpoint Source Pollution Control Program.



Standard Symbol

BMP Objectives

- Soil Stabilization
- Sediment Control
- Tracking Control
- Wind Erosion Control
- Non-Storm Water Management
- Materials and Waste Management

Definition and Purpose These are procedures and practices that are designed to minimize or eliminate the discharge of concrete waste materials to the storm drain systems or watercourses.

- Appropriate Applications**
- Concrete waste management procedures and practices are implemented on construction projects where concrete is used as a construction material or where concrete dust and debris result from demolition activities.
 - Where slurries containing portland cement concrete (PCC) or asphalt concrete (AC) are generated, such as from sawcutting, coring, grinding, grooving, and hydro-concrete demolition.
 - Where concrete trucks and other concrete-coated equipment are washed on site, when approved by the Resident Engineer (RE). See also NS-8, "Vehicle and Equipment Cleaning."
 - Where mortar-mixing stations exist.

Limitations ■ None identified.

Standards and Specifications

Education

- Educate employees, subcontractors, and suppliers on the concrete waste management techniques described herein.
- The Contractor's Water Pollution Control Manager (WPCM) shall oversee and enforce concrete waste management procedures.

Concrete Demolition Wastes

- Stockpile concrete demolition wastes in accordance with BMP WM-3, "Stockpile Management."
- Disposal of hardened PCC and AC waste shall be in conformance with

Standard Specifications Section 7-1.13 or 15-3.02.

Concrete Slurry Waste Management and Disposal

- PCC and AC waste shall not be allowed to enter storm drainage systems or watercourses.
- A sign shall be installed adjacent to each temporary concrete washout facility to inform concrete equipment operators to utilize the proper facilities as shown on Page 7.
- A foreman and/or construction supervisor shall monitor onsite concrete working tasks, such as saw cutting, coring, grinding and grooving to ensure proper methods are implemented.
- Residue from saw cutting, coring and grinding operations shall be picked up by means of a vacuum device. Residue shall not be allowed to flow across the pavement and shall not be left on the surface of the pavement. See also BMP NS-3, "Paving and Grinding Operations."
- Vacuumed slurry residue shall be disposed in accordance with BMP WM-5, "Solid Waste Management" and Standard Specifications Section 7-1.13. Slurry residue shall be temporarily stored in a facility as described in "Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures" below), or within an impermeable containment vessel or bin approved by the Engineer.
- Collect and dispose of all residues from grooving and grinding operations in accordance with Standard Specifications Section 7-1.13, 42-1.02 and 42-2.02.

Onsite Temporary Concrete Washout Facility, Concrete Transit Truck Washout Procedures

- Temporary concrete washout facilities shall be located a minimum of 15 m (50 ft) from storm drain inlets, open drainage facilities, and watercourses, unless determined infeasible by the RE. Each facility shall be located away from construction traffic or access areas to prevent disturbance or tracking.
- A sign shall be installed adjacent to each washout facility to inform concrete equipment operators to utilize the proper facilities. The sign shall be installed as shown on the plans and in conformance with the provisions in Standard Specifications Section 56-2, Roadside Signs.
- Temporary concrete washout facilities shall be constructed above grade or below grade at the option of the Contractor. Temporary concrete washout facilities shall be constructed and maintained in sufficient quantity and size to contain all liquid and concrete waste generated by washout operations.
- Temporary washout facilities shall have a temporary pit or bermed areas of sufficient volume to completely contain all liquid and waste concrete



materials generated during washout procedures.

- Perform washout of concrete mixers, delivery trucks, and other delivery systems in designated areas only.
- Wash concrete only from mixer chutes into approved concrete washout facility. Washout may be collected in an impermeable bag or other impermeable containment devices for disposal.
- Pump excess concrete in concrete pump bin back into concrete mixer truck.
- Concrete washout from concrete pumper bins can be washed into concrete pumper trucks and discharged into designated washout area or properly disposed offsite.
- Once concrete wastes are washed into the designated area and allowed to harden, the concrete shall be broken up, removed, and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.

Temporary Concrete Washout Facility Type "Above Grade"

- Temporary concrete washout facility Type "Above Grade" shall be constructed as shown on Page 6 or 7, with a recommended minimum length and minimum width of 3 m (10 ft), but with sufficient quantity and volume to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense, upon approval from the RE.
- Straw bales, wood stakes, and sandbag materials shall conform to the provisions in BMP SC-9, "Straw Bale Barrier."
- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.
- Portable delineators shall conform to the provisions in Standard Specifications Section 12-3.04, "Portable Delineators." The delineator bases shall be cemented to the pavement in the same manner as provided for cementing pavement markers to pavement in Standard Specifications Section 85-1.06, "Placement." Portable delineators shall be applied only to a clean, dry surface.

Temporary Concrete Washout Facility (Type Below Grade)

- Temporary concrete washout facility Type "Below Grade" shall be constructed as shown on page 6, with a recommended minimum length and minimum width of 3m (10 ft). The quantity and volume shall be sufficient to contain all liquid and concrete waste generated by washout operations. The length and width of a facility may be increased, at the Contractor's expense,



upon approval of the RE. Lath and flagging shall be commercial type.

- Plastic lining material shall be a minimum of 10-mil polyethylene sheeting and shall be free of holes, tears or other defects that compromise the impermeability of the material. Liner seams shall be installed in accordance with manufacturers' recommendations.
- The soil base shall be prepared free of rocks or other debris that may cause tears or holes in the plastic lining material.

Removal of Temporary Concrete Washout Facilities

- When temporary concrete washout facilities are no longer required for the work, as determined by the RE, the hardened concrete shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02. Disposal of PCC dried residues, slurries or liquid waste shall be disposed of outside the highway right-of-way in conformance with provisions of Standard Specifications Section 7-1-13. Materials used to construct temporary concrete washout facilities shall become the property of the Contractor, shall be removed from the site of the work, and shall be disposed of outside the highway right-of-way in conformance with the provisions of the Standard Specifications, Section 7-1.13.
- Holes, depressions or other ground disturbance caused by the removal of the temporary concrete washout facilities shall be backfilled and repaired in conformance with the provisions in Standard Specifications Section 15-1.02, "Preservation of Property."

Maintenance and Inspection

- The Contractor's Water Pollution Control Manager (WPCM) shall monitor on site concrete waste storage and disposal procedures at least weekly or as directed by the RE.
- The WPCM shall monitor concrete working tasks, such as saw cutting, coring, grinding and grooving daily to ensure proper methods are employed or as directed by the RE.
- Temporary concrete washout facilities shall be maintained to provide adequate holding capacity with a minimum freeboard of 100 mm (4 inches) for above grade facilities and 300 mm (12 inches) for below grade facilities. Maintaining temporary concrete washout facilities shall include removing and disposing of hardened concrete and returning the facilities to a functional condition. Hardened concrete materials shall be removed and disposed of in conformance with the provisions in Standard Specifications Section 7-1.13 or 15-3.02.
- Existing facilities must be cleaned, or new facilities must be constructed and ready for use once the washout is 75% full.
- Temporary concrete washout facilities shall be inspected for damage (i.e.



Concrete Waste Management

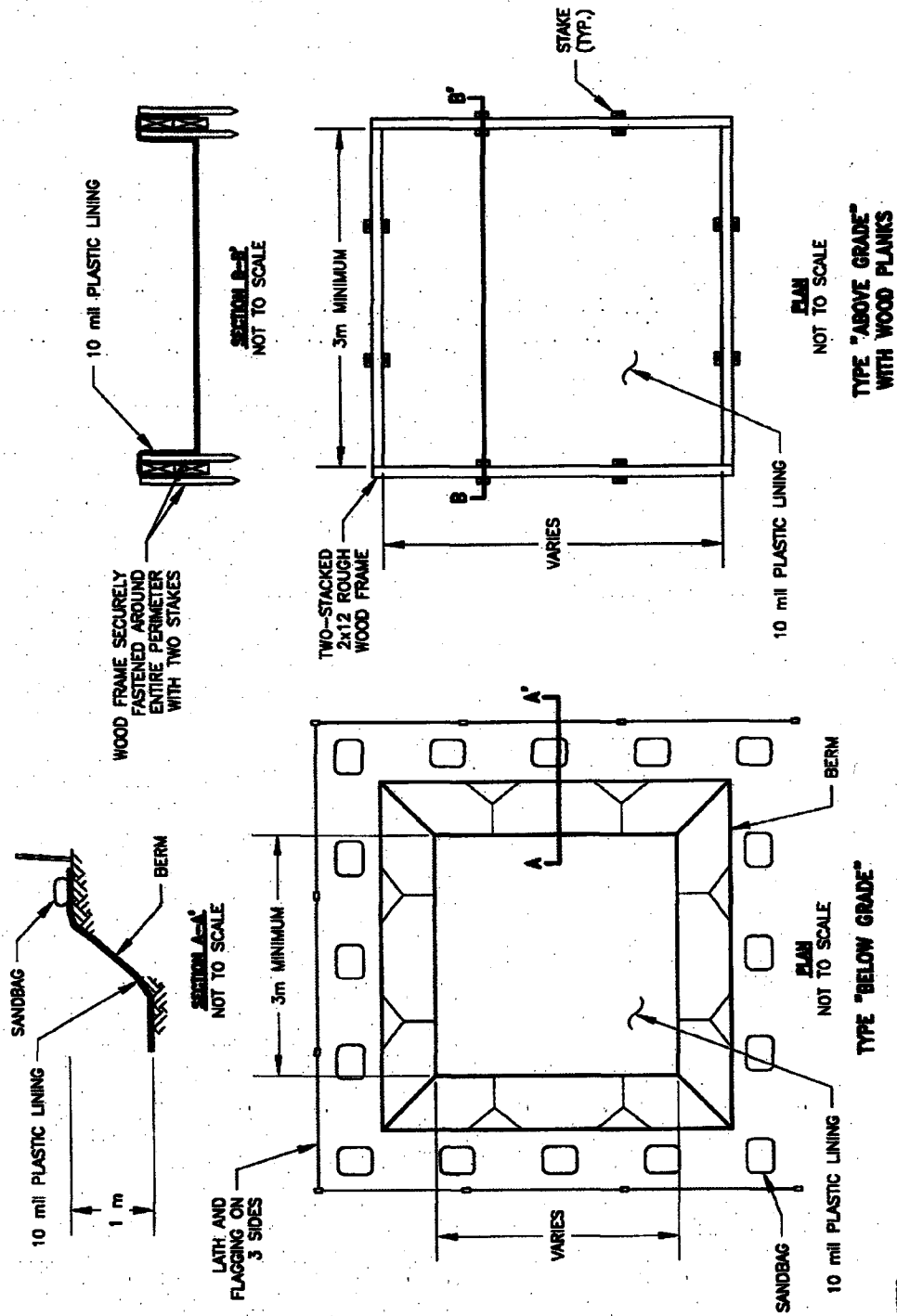
WM-8

tears in polyethylene liner, missing sandbags, etc.). Damaged facilities shall be repaired.



Concrete Waste Management

WM-8



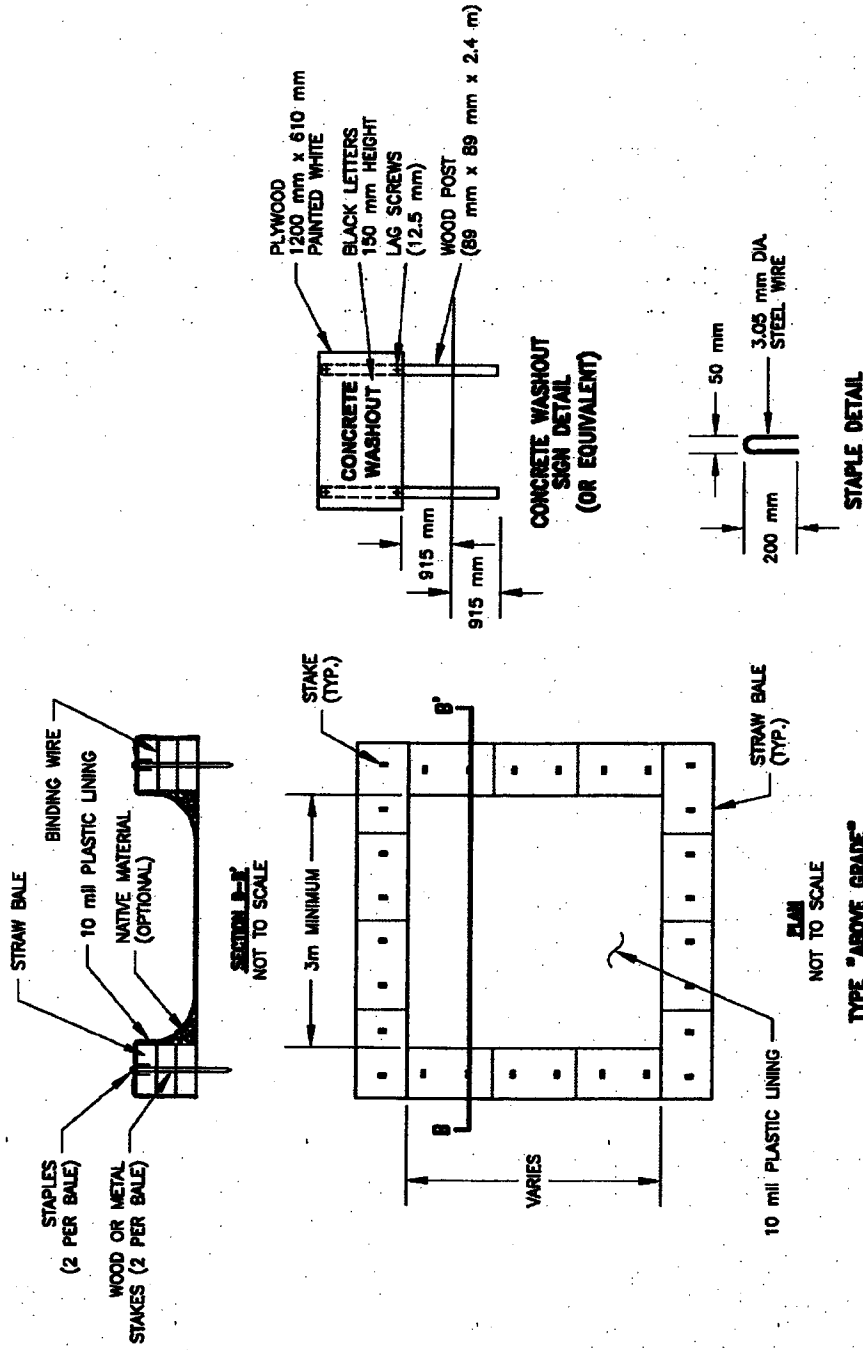
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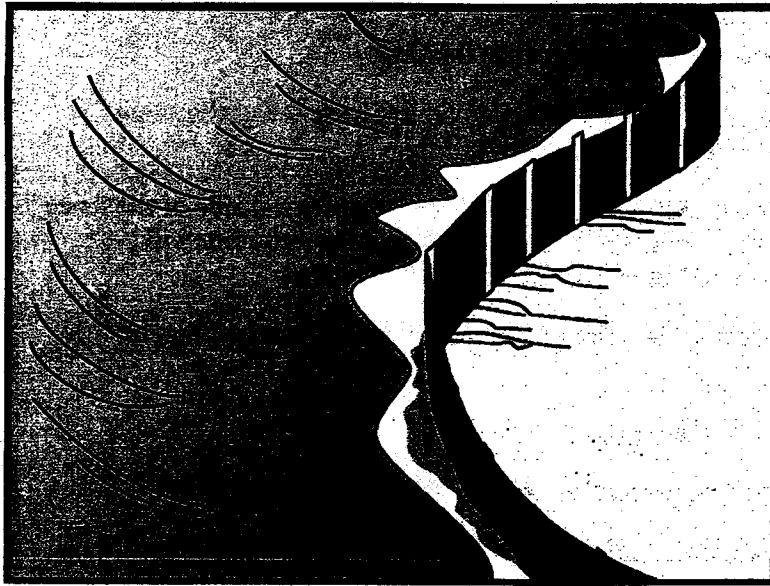
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN (SEE PAGE 6) SHALL BE INSTALLED WITHIN 10 m OF THE TEMPORARY CONCRETE WASHOUT FACILITY.



Concrete Waste Management

WM-8





Description and Purpose

A silt fence is made of a filter fabric that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains sediment-laden water, promoting sedimentation behind the fence.

Suitable Applications

Silt fences are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They should also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion. Silt fences are generally ineffective in locations where the flow is concentrated and are only applicable for sheet or overland flows. Silt fences are most effective when used in combination with erosion controls. Suitable applications include:

- Along the perimeter of a project.
- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels.
- Around temporary spoil areas and stockpiles.
- Below other small cleared areas.

Limitations

- Do not use in streams, channels, drain inlets, or anywhere flow is concentrated.

Objectives

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	<input type="checkbox"/>
TR	Tracking Control	<input type="checkbox"/>
WE	Wind Erosion Control	<input type="checkbox"/>
NS	Non-Stormwater Management Control	<input type="checkbox"/>
WM	Waste Management and Materials Pollution Control	<input type="checkbox"/>

Legend:

- Primary Objective
- Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	<input type="checkbox"/>
Trash	<input type="checkbox"/>
Metals	<input type="checkbox"/>
Bacteria	<input type="checkbox"/>
Oil and Grease	<input type="checkbox"/>
Organics	<input type="checkbox"/>

Potential Alternatives

- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier
- SE-9 Straw Bale Barrier



- Do not use in locations where ponded water may cause flooding.
- Do not place fence on a slope, or across any contour line. If not installed at the same elevation throughout, silt fences will create erosion.
- Filter fences will create a temporary sedimentation pond on the upstream side of the fence and may cause temporary flooding. Fences not constructed on a level contour will be overtopped by concentrated flow resulting in failure of the filter fence.
- Improperly installed fences are subject to failure from undercutting, overlapping, or collapsing.
 - Not effective unless trenched and keyed in.
 - Not intended for use as mid-slope protection on slopes greater than 4:1 (H:V).
 - Do not allow water depth to exceed 1.5 ft at any point.

Implementation

General

A silt fence is a temporary sediment barrier consisting of filter fabric stretched across and attached to supporting posts, entrenched, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap sediment by intercepting and detaining small amounts of sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

Silt fences are preferable to straw bale barriers in many cases. Laboratory work at the Virginia Highway and Transportation Research Council has shown that silt fences can trap a much higher percentage of suspended sediments than can straw bales. While the failure rate of silt fences is lower than that of straw bale barriers, there are many instances where silt fences have been improperly installed. The following layout and installation guidance can improve performance and should be followed:

- Use principally in areas where sheet flow occurs.
- Don't use in streams, channels, or anywhere flow is concentrated. Don't use silt fences to divert flow.
- Don't use below slopes subject to creep, slumping, or landslides.
- Select filter fabric that retains 85% of soil by weight, based on sieve analysis, but that is not finer than an equivalent opening size of 70.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- The maximum length of slope draining to any point along the silt fence should be 200 ft or less.
- The maximum slope perpendicular to the fence line should be 1:1.

- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft² of ponding area should be provided for every acre draining to the fence.
- Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.
- Silt fences should remain in place until the disturbed area is permanently stabilized.

Design and Layout

Selection of a filter fabric is based on soil conditions at the construction site (which affect the equivalent opening size (EOS) fabric specification) and characteristics of the support fence (which affect the choice of tensile strength). The designer should specify a filter fabric that retains the soil found on the construction site yet that it has openings large enough to permit drainage and prevent clogging. The following criteria is recommended for selection of the equivalent opening size:

1. If 50 percent or less of the soil, by weight, will pass the U.S. Standard Sieve No. 200, select the EOS to retain 85 % of the soil. The EOS should not be finer than EOS 70.
2. For all other soil types, the EOS should be no larger than the openings in the U.S. Standard Sieve No. 70 except where direct discharge to a stream, lake, or wetland will occur, then the EOS should be no larger than Standard Sieve No. 100.

To reduce the chance of clogging, it is preferable to specify a fabric with openings as large as allowed by the criteria. No fabric should be specified with an EOS smaller than U.S. Standard Sieve No. 100. If 85% or more of a soil, by weight, passes through the openings in a No. 200 sieve, filter fabric should not be used. Most of the particles in such a soil would not be retained if the EOS was too large and they would clog the fabric quickly if the EOS were small enough to capture the soil.

The fence should be supported by a plastic or wire mesh if the fabric selected does not have sufficient strength and bursting strength characteristics for the planned application (as recommended by the fabric manufacturer). Filter fabric material should contain ultraviolet inhibitors and stabilizers to provide a minimum of six months of expected usable construction life at a temperature range of 0 °F to 120 °F.

- Layout in accordance with attached figures.
- For slopes steeper than 2:1 (H:V) and that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to install additional protection immediately adjacent to the bottom of the slope, prior to installing silt fence. Additional protection may be a chain link fence or a cable fence.
- For slopes adjacent to sensitive receiving waters or Environmentally Sensitive Areas (ESAs), silt fence should be used in conjunction with erosion control BMPs.

Materials

- Silt fence fabric should be woven polypropylene with a minimum width of 36 in. and a minimum tensile strength of 100 lb force. The fabric should conform to the requirements in ASTM designation D4632 and should have an integral reinforcement layer. The reinforcement layer should be a polypropylene, or equivalent, net provided by the manufacturer. The permittivity of the fabric should be between 0.1 sec^{-1} and 0.15 sec^{-1} in conformance with the requirements in ASTM designation D4491.
- Wood stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.
- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9 gauge or heavier wire. Galvanizing of the fastening wire will not be required.
- There are new products that may use prefabricated plastic holders for the silt fence and use bar reinforcement instead of wood stakes. If bar reinforcement is used in lieu of wood stakes, use number four or greater bar. Provide end protection for any exposed bar reinforcement.

Installation Guidelines

Silt fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- A trench should be excavated approximately 6 in. wide and 6 in. deep along the line the proposed silt fence.
- Bottom of the silt fence should be keyed-in a minimum of 12 in.
- Posts should be spaced a maximum of 6 ft apart and driven securely into the ground a minimum of 18 in. or 12 in. below the bottom of the trench.
- When standard strength filter fabric is used, a plastic or wire mesh support fence should be fastened securely to the upslope side of posts using heavy-duty wire staples at least 1 in. long. The mesh should extend into the trench. When extra-strength filter fabric and closer post spacing are used, the mesh support fence may be eliminated. Filter fabric should be purchased in a long roll, then cut to the length of the barrier. When joints are necessary, filter cloth should be spliced together only at a support post, with a minimum 6 in. overlap and both ends securely fastened to the post.
- The trench should be backfilled with compacted native material.
- Construct silt fences with a setback of at least 3 ft from the toe of a slope. Where a silt fence is determined to be not practicable due to specific site conditions, the silt fence may be constructed at the toe of the slope, but should be constructed as far from the toe of the slope as practicable. Silt fences close to the toe of the slope will be less effective and difficult to maintain.

- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case should the reach exceed 500 ft.

Costs

- Average annual cost for installation and maintenance (assumes 6 month useful life): \$7 per lineal foot (\$850 per drainage acre). Range of cost is \$3.50 - \$9.10 per lineal foot.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair undercut silt fences.
- Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months.
- Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed of, and replaced with new silt fence barriers.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- Silt fences should be left in place until the upstream area is permanently stabilized. Until then, the silt fence must be inspected and maintained.
- Holes, depressions, or other ground disturbance caused by the removal of the silt fences should be backfilled and repaired.

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Proposed Guidance Specifying Management Measures for Sources of Nonpoint Pollution in Coastal Waters, Work Group-Working Paper, USEPA, April 1992.

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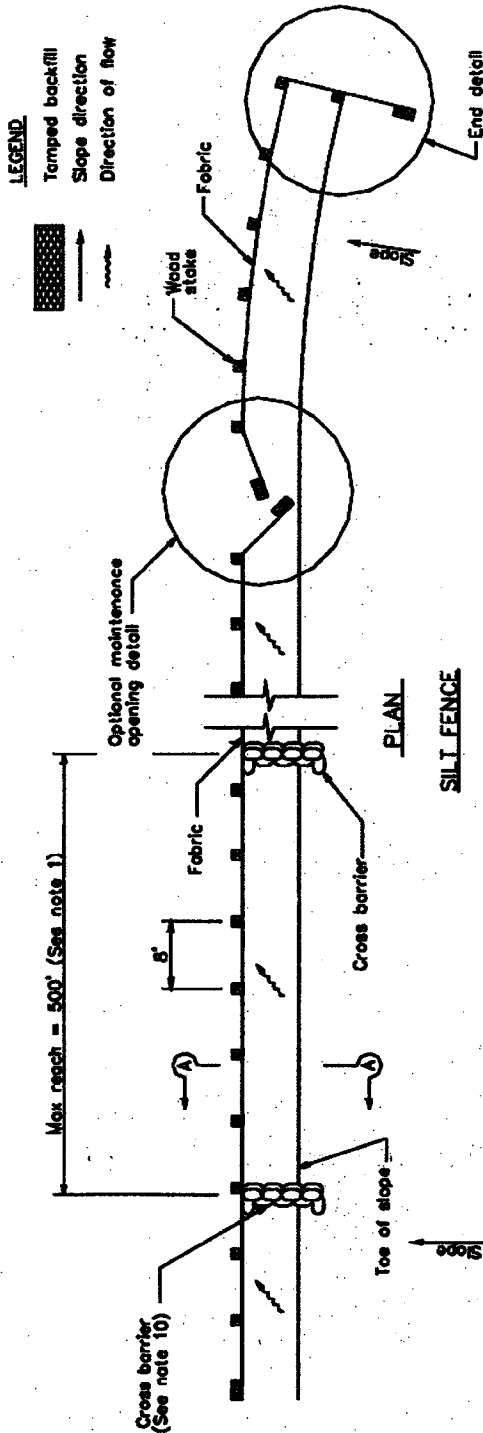
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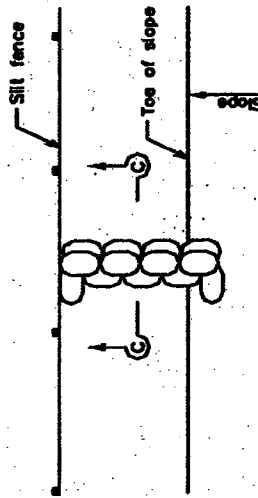
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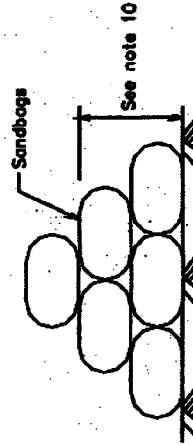


NOTES

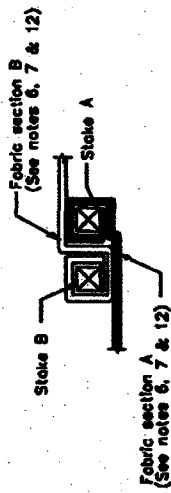
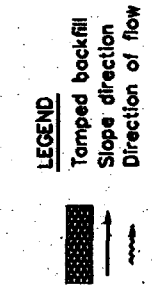
1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'-0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stakes with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stakes, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.



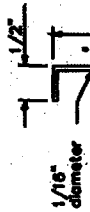
CROSS BARRIER DETAIL



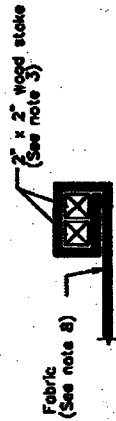
SECTION C-C



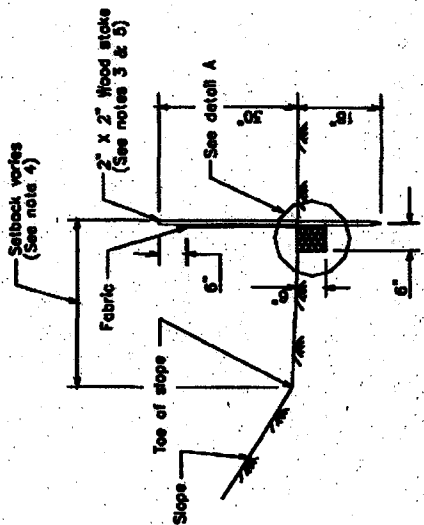
JOINING SECTION DETAIL (TOP VIEW)



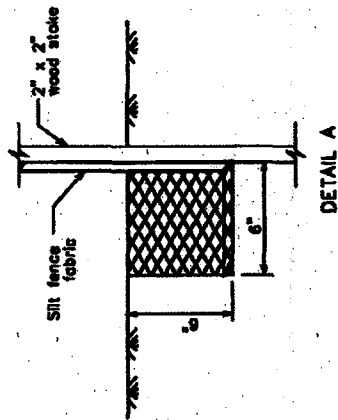
**STAPLE DETAIL
(SEE NOTE 9)**



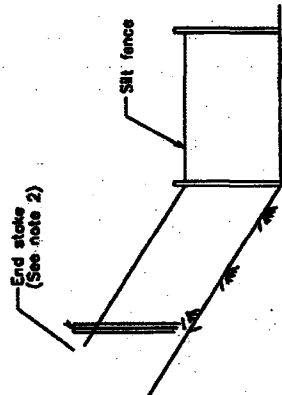
END STAKE DETAIL (TOP VIEW)



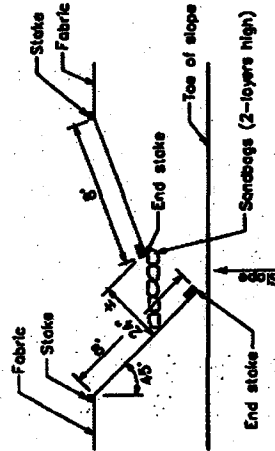
SECTION A-A



DETAIL A



END DETAIL



**OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)**



Description and Purpose

A check dam is a small barrier constructed of rock, gravel bags, sandbags, fiber rolls, or reusable products, placed across a constructed swale or drainage ditch. Check dams reduce the effective slope of the channel, thereby reducing the velocity of flowing water, allowing sediment to settle and reducing erosion.

Suitable Applications

Check dams may be appropriate in the following situations:

- To promote sedimentation behind the dam.
- To prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- In small open channels that drain 10 acres or less.
- In steep channels where stormwater runoff velocities exceed 5 ft/s.
- During the establishment of grass linings in drainage ditches or channels.
- In temporary ditches where the short length of service does not warrant establishment of erosion-resistant linings.

Limitations

- Not to be used in live streams or in channels with extended base flows.

Objectives

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	<input checked="" type="checkbox"/>
TR	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Objective
- Secondary Objective

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

- SE-5 Fiber Rolls
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier



- Not appropriate in channels that drain areas greater than 10 acres.
- Not appropriate in channels that are already grass-lined unless erosion is expected, as installation may damage vegetation.
- Require extensive maintenance following high velocity flows.
- Promotes sediment trapping which can be re-suspended during subsequent storms or removal of the check dam.

Implementation

General

Check dams reduce the effective slope and create small pools in swales and ditches that drain 10 acres or less. Reduced slopes reduce the velocity of stormwater flows, thus reducing erosion of the swale or ditch and promoting sedimentation. Use of check dams for sedimentation will likely result in little net removal of sediment because of the small detention time and probable scour during longer storms. Using a series of check dams will generally increase their effectiveness. A sediment trap (SE-3) may be placed immediately upstream of the check dam to increase sediment removal efficiency.

Design and Layout

Check dams work by decreasing the effective slope in ditches and swales. An important consequence of the reduced slope is a reduction in capacity of the ditch or swale. This reduction in capacity must be considered when using this BMP, as reduced capacity can result in overtopping of the ditch or swale and resultant consequences. In some cases, such as a "permanent" ditch or swale being constructed early and used as a "temporary" conveyance for construction flows, the ditch or swale may have sufficient capacity such that the temporary reduction in capacity due to check dams is acceptable. When check dams reduce capacities beyond acceptable limits, there are several options:

- Don't use check dams. Consider alternative BMPs.
- Increase the size of the ditch or swale to restore capacity.

Maximum slope and velocity reduction is achieved when the toe of the upstream dam is at the same elevation as the top of the downstream dam. The center section of the dam should be lower than the edge sections so that the check dam will direct flows to the center of the ditch or swale.

Check dams are usually constructed of rock, gravel bags, sandbags, and fiber rolls. A number of products manufactured specifically for use as check dams are also being used, and some of these products can be removed and reused. Check dams can also be constructed of logs or lumber, and have the advantage of a longer lifespan when compared to gravel bags, sandbags, and fiber rolls. Straw bales can also be used for check dams and can work if correctly installed; but in practice, straw bale check dams have a high failure rate. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

Rock check dams are usually constructed of 8 to 12 in. rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam must completely span the ditch

or swale to prevent washout. The rock used must be large enough to stay in place given the expected design flow through the channel.

Log check dams are usually constructed of 4 to 6 in. diameter logs. The logs should be embedded into the soil at least 18 in. Logs can be bolted or wired to vertical support logs that have been driven or buried into the soil.

Gravel bag and sandbag check dams are constructed by stacking bags across the ditch or swale, shaped as shown in the drawings at the end of this fact sheet.

Manufactured products should be installed in accordance with the manufacturer's instructions.

If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swales is greater than 4%).

The following guidance should be followed for the design and layout of check dams:

- Install the first check dam approximately 16 ft from the outfall device and at regular intervals based on slope gradient and soil type.
- Check dams should be placed at a distance and height to allow small pools to form between each check dam.
- Backwater from a downstream check dam should reach the toes of the upstream check dam.
- A sediment trap provided immediately upstream of the check dam will help capture sediment. Due to the potential for this sediment to be resuspended in subsequent storms, the sediment trap must be cleaned following each storm event.
- High flows (typically a 2-year storm or larger) should safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams should be removed when grass has matured sufficiently to protect the ditch or swale.
- Gravel bags may be used as check dams with the following specifications:

Materials

Gravel bags used for check dams should conform to the requirements of SE-6, Gravel Bag Berms. Sandbags used for check dams should conform to SE-8, Sandbag Barrier. Fiber rolls used for check dams should conform to SE-5, Fiber Rolls. Straw bales used for check dams should conform to SE-9, Straw Bale Barrier.

Installation

- Rock should be placed individually by hand or by mechanical methods (no dumping of rock) to achieve complete ditch or swale coverage.
- Tightly abut bags and stack according to detail shown in the figure at the end of this section. Gravel bags and sandbags should not be stacked any higher than 3 ft.
- Fiber rolls and straw bales must be trenched in and firmly staked in place.

Costs

Cost consists of only installation costs if materials are readily available. If material must be imported, costs may increase. For material costs, see SE-5, SE-6, SE-8 and SE-9.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Replace missing rock, bags, bales, etc. Replace bags or bales that have degraded or have become damaged.
- If the check dam is used as a sediment capture device, sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade.
- Remove accumulated sediment prior to permanent seeding or soil stabilization.
- Remove check dam and accumulated sediment when check dams are no longer needed.

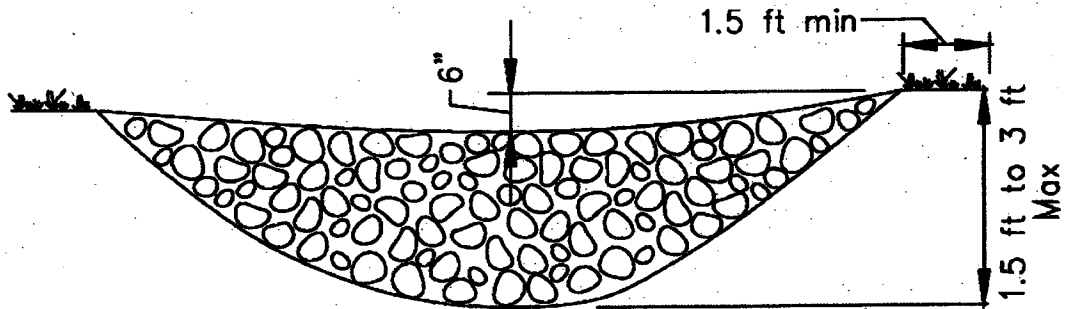
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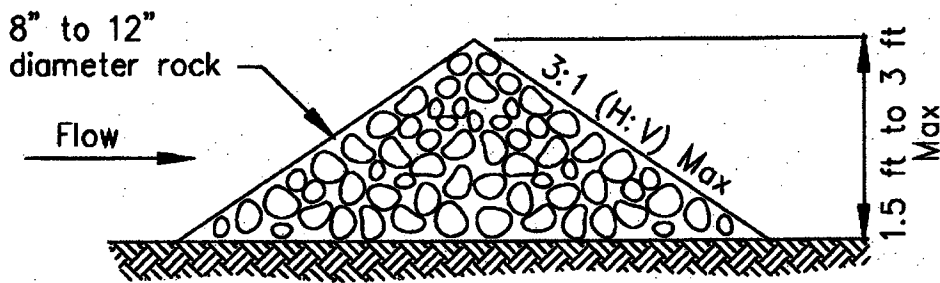
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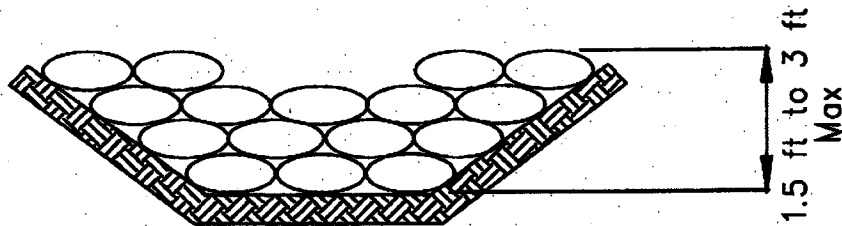


ELEVATION

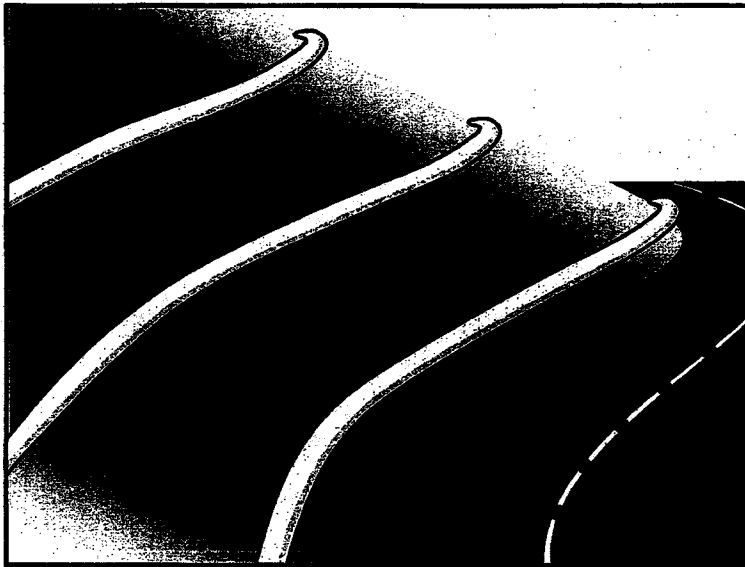


TYPICAL ROCK CHECK DAM SECTION

ROCK CHECK DAM
NOT TO SCALE



GRAVEL BAG CHECK DAM ELEVATION
NOT TO SCALE



Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

Categories

EC	Erosion Control	<input checked="" type="checkbox"/>
SE	Sediment Control	<input checked="" type="checkbox"/>
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

- Primary Category
- Secondary Category

Targeted Constituents

Sediment	<input checked="" type="checkbox"/>
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

- SE-1 Silt Fence
- SE-6 Gravel Bag Berm
- SE-8 Sandbag Barrier
- SE-14 Biofilter Bags



- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
 - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
 - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
 - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be $\frac{1}{4}$ to $\frac{1}{3}$ of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
 - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
 - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from \$20 - \$30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-\$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

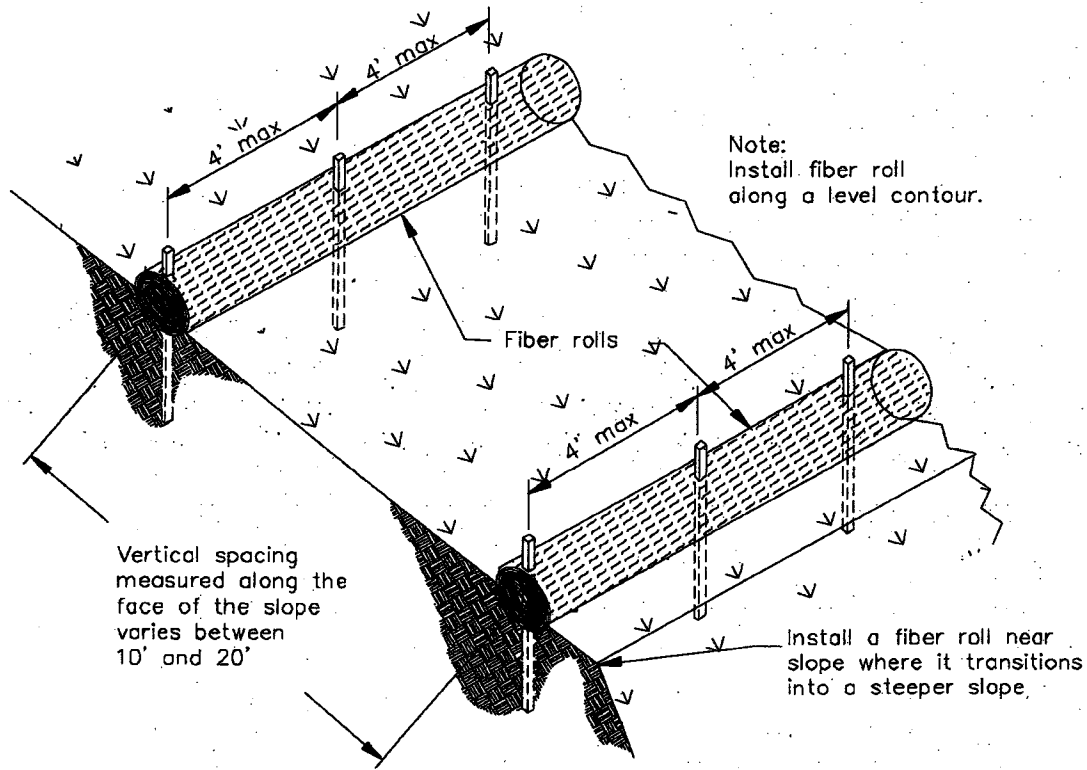
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

References

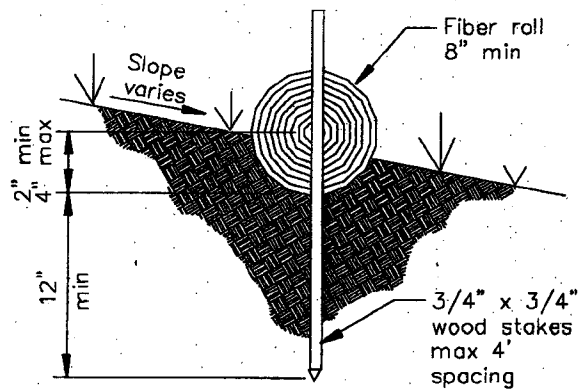
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.



TYPICAL FIBER ROLL INSTALLATION

N.T.S.



ENTRENCHMENT DETAIL

N.T.S.

ATTACHMENTS FILED
WITH
THE CLERK OF THE BOARD