

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

347



FROM: Waste Management Department

SUBMITTAL DATE:
June 8, 2011

SUBJECT: Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills

RECOMMENDED MOTION: That the Board of Supervisors:

1. Approve the Contract Documents for Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills; and
2. Authorize the General Manager Chief Engineer to advertise for bids. (Continued)

Hans W. Kernkamp, General Manager-Chief Engineer

FINANCIAL DATA	Current F.Y. Total Cost:	\$243,933	In Current Year Budget:	Yes
	Current F.Y. Net County Cost:	\$ N/A	Budget Adjustment:	No
	Annual Net County Cost:	\$ N/A	For Fiscal Year:	11/12

SOURCE OF FUNDS: Waste Management Department Enterprise Funds	Positions To Be Deleted Per A-30	<input type="checkbox"/>
	Requires 4/5 Vote	<input type="checkbox"/>

C.E.O. RECOMMENDATION:

APPROVE

BY:
Alex Gann

County Executive Office Signature

MINUTES OF THE BOARD OF SUPERVISORS

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

Ayes: Buster, Stone, Benoit and Ashley
 Nays: None
 Absent: Tavaglione
 Date: July 12, 2011
 xc: Waste

Kecia Harper-Ihem
 Clerk of the Board
 By:
 Deputy

Prev. Agn. Ref.:

District: 5

Agenda Number:

12.2

ATTACHMENTS FILED
WITH THE CLERK OF THE BOARD

FORM APPROVED COUNTY COUNSEL
BY:
NEAL R. KIPNIS
DATE: 6/27/11
tal Concurrence

Dept's Recomm.: Consent Policy Policy

Per Exec. Ofc.: Consent Policy

Form 11: Construction of Landfill Gas Collection Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills

June 8, 2011

Page 2

BACKGROUND: As part of the Waste Management Department's ongoing compliance with air quality regulations and efficient operation of the landfill gas collection systems at the Badlands and Lamb Canyon Landfills, additional landfill gas wells and collection piping are needed as each site expands. The construction performed in this contract is structured as a multi-year award, covering landfill gas collection system expansion needs for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 with multiple call outs (up to twenty-four mobilization events through the duration of the contract). This structure will allow staff to respond quickly to field conditions at our two major regional landfills. Time of completion for each call out will be specific and based upon a mobilization and scope of work formula for each item of work, as defined in the special provisions. The Engineer's estimate for this project is \$243,933 for FY 2011/2012, \$231,494 for FY 2012/2013, and \$291,899 for FY 2013/2014 for a total of \$767,326.



Riverside County

Waste Management Department

**CONTRACT DOCUMENTS
FOR CONSTRUCTION OF
LANDFILL GAS COLLECTION SYSTEM
EXPANSIONS FOR FISCAL YEAR 2011/2012
THROUGH FISCAL YEAR 2013/2014
AT THE
BADLANDS AND LAMB CANYON SANITARY
LANDFILLS**

FORM APPROVED COUNTY COUNSEL

BY: NEAL R. KIPNIS

DATE

6/22/10

TABLE OF CONTENTS

NOTICE TO CONTRACTORS	1
INSTRUCTIONS TO BIDDERS	3
CONTRACTOR'S PROPOSAL	7
LIST OF SUBCONTRACTORS	10
STATEMENT OF LICENSURE	11
AFFIDAVIT FOR INDIVIDUAL CONTRACTORS.....	12
AFFIDAVIT FOR JOINT VENTURE OR COPARTNERSHIP CONTRACTOR	13
AFFIDAVIT FOR CORPORATE CONTRACTOR.....	14
BID BOND	15
AGREEMENT.....	16
EXHIBIT A.....	18
PERFORMANCE BOND.....	20
PAYMENT BOND	21

GENERAL PROVISIONS

SPECIAL PROVISIONS

APPENDICES

Appendix A – Project Drawings

Appendix B – SCAQMD Permit to Operate (Digital Copy)

Appendix C – Stormwater Pollution Prevention Plan (Digital Copy)

Appendix D – Riverside County Hazardous Materials Business Emergency Plan (BEP) (Digital Copy)

Appendix E – Riverside County Spill Prevention, Control, and Countermeasure (SPCC) Plans (Digital Copy)

NOTICE TO CONTRACTORS

The Riverside County Waste Management Department, hereinafter called "County," invites sealed bids for the

CONSTRUCTION OF LANDFILL GAS COLLECTION SYSTEM

EXPANSIONS FOR FISCAL YEAR 2011/2012 THROUGH FISCAL YEAR 2013/2014

AT THE

BADLANDS AND LAMB CANYON SANITARY LANDFILLS

Contract Documents may be examined at the County's office at 14310 Frederick St, Moreno Valley, California, and may be obtained upon payment to the County of \$35 per set, received at the County's office and \$45 per set if mailed by U.S. mail (mailing cost does not apply when using recipient's mailing account number). No refund will be made.

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 in accordance with the instructions and filed with the County by 11:00 am on August 18, 2011 at the above County address which time and place are fixed for the public opening of bids. A **mandatory pre-bid site review will be conducted on Tuesday, August 2, 2011, at 10:00 am starting at Badlands Landfill and continuing on to Lamb Canyon Landfill.**

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 or C-34 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 prior experience to bid on this project:

1. The Contractor shall have successfully installed a minimum of ten thousand (10,000) linear feet of HDPE header pipe in a landfill for the collection of landfill gas, and constructed one thousand (1,000) linear feet of vertical landfill gas collection well.
2. The aforementioned qualification requirements shall also apply to either the Contractor's superintendent or its subcontractor's superintendent.

The bidders shall include a listing of three references attached to the Contractor's Proposal that document prior work, similar to this contract, within the last five years. Each reference shall have an associated project name, work description, contact person, and contact phone number. The County may disqualify a bidder that does not provide references or whose references cannot substantiate the bidder's qualifications. By submission of a bid, the bidders agree to be bound by the County's determination as to whether a bidder is qualified to do the work.

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. The bidders shall include a listing of three references attached to the Contractor's Proposal that document prior work (as described in bidder qualifications), similar to this contract, within the last five years. 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: July 12, 2011

RIVERSIDE COUNTY
WASTE MANAGEMENT DEPARTMENT



Hans W. Kernkamp, General Manager - Chief Engineer

INSTRUCTIONS TO BIDDERS

QUANTITIES: The amount of work to be done or materials to be furnished 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 written 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. The award, if made, will be made within approximately thirty (30) to sixty (60) 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 declare the bidder's bid deposit or bond forfeited as damages caused by the failure of the bidder to post such security and execute such copies of the Contract and may award the work to the next lowest responsible 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 (½) 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.

TIME OF COMPLETION AND LIQUIDATED DAMAGES: Please refer to Section 1.9 of the Special Provisions.

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 shown in the attached schedule. 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 whatever they may be, subject to such adjustments and alterations as elsewhere provided for in the Contract Documents.

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

The bid items reflect the work that is currently expected to be done during the entire fiscal year in different mobilization phases. As reflected in the bid items, there will be several mobilizations required during the year for each site. It is possible that there will be more or less work required of the Contractor during the fiscal year than what is stated in the bid items: but regardless of the actual work done during the fiscal year, the Contractor will be paid at the bid item prices. There will be a separate "Notice to Proceed" issued by the County for each mobilization.

Contractor bids as follows for Construction of Landfill Gas Collection System Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon landfills, located east of Moreno Valley and south of Beaumont, respectively, Riverside County, California:

ITEM NO.	ITEM OF WORK	UNIT	QUANTITY	UNIT COST	TOTAL COST
1.1	Mobilization for Horizontal Well Construction	EA	6		
1.2	Mobilization for Vertical Well Construction	EA	6		
1.3	Mobilization for Header and Lateral Pipe Install	EA	6		
1.4	Mobilization for Relocating Header and Lateral Pipe	EA	6		
2.	Trenching & Earthwork	LF	15,070		
3.	Install Horizontal Well	LF	12,815		
4.	Install Aggregate Pit	LS	14		
5.	Drill and Install Vertical Gas Wells	LF	3,344		
6.	Install 2" HDPE Pipe	LF	616		
7.	Install 3" HDPE Lateral Pipe	LF	4,642		
8.	Install 6" HDPE Lateral Pipe	LF	3,289		
9.	Install 8" HDPE Header Pipe	LF	1,837		
10.	Install 10" HDPE Header Pipe	LF	2,040		
11.	Install 12" HDPE Header Pipe	LF	7,425		
12.	Install 16" HDPE Header Pipe	LF	3,322		
13.	Relocate 2" HDPE Pipe	LF	330		
14.	Relocate 3" HDPE Lateral Pipe	LF	2,420		
15.	Relocate 6" HDPE Header Pipe	LF	330		
16.	Relocate 8" HDPE Header Pipe	LF	3,960		
17.	Relocate 10" HDPE Header Pipe	LF	880		
18.	Relocate 12" HDPE Header Pipe	LF	1,320		
19.	Install or Relocate Well Monitoring Assembly	EA	71		

ITEM NO.	ITEM OF WORK	UNIT	QUANTITY	UNIT COST	TOTAL COST
20.	Install 8,750-Gallon Tank and Concrete Containment Structure	EA	1		
21.	Install 12,500-Gallon tank and Concrete Containment Structure	EA	2		
22.	Demobilization	EA	24		
TOTAL COST \$					

Contractor acknowledges receipt of Addenda No _____.

Name of Contractor: _____

Address: _____

Telephone: _____

Contractor's License No. and Classification: _____

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: _____

Phone & Fax Numbers: _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Phone & Fax Numbers: _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Phone & Fax Numbers: _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Phone & Fax Numbers: _____

Address: _____

Item No. (s): _____

Name of Subcontractor: _____

Phone & 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 Waste Management Department 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 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 Waste Management Department 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.

Subscribe 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 Waste Management Department, for construction of the public work known as Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills, 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 value and/or cost of the actual work to be accomplished by the Contractor, not including any payment or credit to be made to the County for the value of the material the Contractor will remove and take possession of, and inures to the benefit of County. The value of this bond is \$ _____.
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: _____

Title: _____

(Surety)

(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 _____ (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, Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 Through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills, 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 – Project Drawings
 - (k) Appendix B – SCAQMD Permit to Operate (Digital Copy)
 - (l) Appendix C – Stormwater Pollution Prevention Plan (Digital Copy)
 - (m) Appendix D – Riverside County Hazardous Materials Business Emergency Plan (BEP) (Digital Copy)
 - (n) Appendix E – Riverside County Spill Prevention, Control, and Countermeasure (SPCC) Plans (Digital Copy)
 - (o) Standard Specifications for Public Works Construction, 1997 Edition, with Amendments;
 - (p) Any other documents included in or incorporated into the Contract Documents;
 - (q) Addenda Nos. _____ ;
 - (r) Orders, instructions, drawings and plans issued by County during the course of the work in accordance with the provisions of the Contract Documents.

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 to Contractor. Contractor represents that it fully understands the payment method for the work.

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

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

COUNTY OF RIVERSIDE

By: _____
Chairman, Board of Supervisors

ATTEST:

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 Waste Management Department Project, Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014, at the Badlands and Lamb Canyon Sanitary Landfills, located east of Moreno Valley and south of Beaumont, respectively, Riverside County, California.)

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 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	TOTAL COST
1.1	Mobilization for Horizontal Well Construction	EA	6		
1.2	Mobilization for Vertical Well Construction	EA	6		
1.3	Mobilization for Header and Lateral Pipe Install	EA	6		
1.4	Mobilization for Relocating Header and Lateral Pipe	EA	6		
2.	Trenching and Earthwork	LF	15,070		
3.	Install Horizontal Well	LF	12,815		
4.	Install Aggregate Pit	LS	14		
5.	Drill and Install Vertical Gas Wells	LF	3,344		
6.	Install 2" HDPE Pipe	LF	616		
7.	Install 3" HDPE Lateral Pipe	LF	4,642		
8.	Install 6" HDPE Lateral Pipe	LF	3,289		
9.	Install 8" HDPE Header Pipe	LF	1,837		
10.	Install 10" HDPE Header Pipe	LF	2,040		
11.	Install 12" HDPE Header Pipe	LF	7,425		
12.	Install 16" HDPE Header Pipe	LF	3,322		
13.	Relocate 2" HDPE Pipe	LF	330		
14.	Relocate 3" HDPE Lateral Pipe	LF	2,420		
15.	Relocate 6" HDPE Header Pipe	LF	330		
16.	Relocate 8" HDPE Header Pipe	LF	3,960		
17.	Relocate 10" HDPE Header Pipe	LF	880		
18.	Relocate 12" HDPE Header Pipe	LF	1,320		
19.	Install or Relocate Well Monitoring Assembly	EA	71		

20.	Install 8,750-Gallon Tank and Concrete Containment Structure	EA	1		
21.	Install 12,500-Gallon Tank and Concrete Containment Structure	EA	1		
22.	Demobilization	EA	24		
TOTAL \$					

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 Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills (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 value and/or cost of the actual work to be accomplished by the Contractor, not including any payment or credit to be made to the County for the value of the material the Contractor will remove and take possession of, and inures to the benefit of County. The value of this bond is \$ _____.
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 thereunder 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 _____.

Dated: _____

By: _____

By: _____

Title: _____

Title: _____

(Surety)

(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 value and/or cost of the actual work to be
accomplished by the Contractor, not including any payment or credit to be made to the County for the
value of the material the Contractor will remove and take possession of. The value of this bond is
\$ _____. Said contract is for the public work generally consisting of the Construction
of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014
at the Badlands and Lamb Canyon Sanitary Landfills. 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
LANDFILL GAS COLLECTION SYSTEM
EXPANSIONS FOR FISCAL YEAR 2011/2012
THROUGH FISCAL YEAR 2013/2014
AT THE
BADLANDS AND LAMB CANYON
SANITARY LANDFILLS

Prepared By:

RIVERSIDE COUNTY
WASTE MANAGEMENT DEPARTMENT

14310 Frederick Street
Moreno Valley CA 92553

PD100496

7/12/2011 12.2

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. General	2-2
2.7.2. Procedure for Extra Work	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	3-2
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. Compliance with Applicable Law.....	5-1
5.1.2. Labor Code	5-1
5.1.3. Equal Employment Opportunity	5-2

5.1.4.	<i>Registration of Contractors</i>	5-3
5.1.5.	<i>Accident Prevention</i>	5-3
5.2.	CONTRACTOR'S RESPONSIBILITY	5-4
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	5-5
5.9.	USE OF EXPLOSIVES	5-5
5.10.	PROVISIONS FOR EMERGENCIES	5-5
5.11.	UNFORESEEN DIFFICULTIES	5-6
5.12.	ACCESS TO THE WORK	5-6
5.13.	GUARANTEE OF WORK	5-6
5.14.	SURETY OF GUARANTEE	5-6
5.15.	DAMAGES BY ACT OF GOD	5-7
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	7-4
7.1.	SCOPE OF PAYMENTS	7-4
7.1.1.	<i>Measurement and Computation of Quantities</i>	7-4
7.1.2.	<i>Payment at Contract Prices</i>	7-4
7.2.	PAYMENT AND COMPENSATION FOR ALTERED QUANTITIES	7-4
7.3.	FORCE ACCOUNT PAYMENT	7-2
7.3.1.	<i>Work Performed by Contractor</i>	7-2
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>	7-3
7.3.1.2.	Materials	7-3
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>	7-6
7.3.3.	<i>Records</i>	7-6
7.3.4.	<i>Payment</i>	7-7
7.4.	ACCEPTANCE	7-7

7.5.	PARTIAL PAYMENTS	7-7
7.6.	DELAYED PAYMENTS	7-8
7.7.	FINAL PAYMENT	7-8
7.8.	CLAIMS RESOLUTION	7-9
7.8.1.	<i>Submission of Claims</i>	7-9
7.8.1.1.	Claims Under \$50,000.00	7-9
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>	7-10
7.8.4.	<i>Mediation and Judicial Arbitration</i>	7-10
7.8.5.	<i>Location for Filing of Claims, Jurisdiction</i>	7-10
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	8-6
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

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 Waste Management Department.
- d) **ENGINEER:** The General Manager - Chief Engineer of the Riverside County Waste Management Department, 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; 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, 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 Operation	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 agrees that payment of the final amount due under the contract will be withheld until the guarantee of work as required in Section 5.14 herein is accepted by the County in approved form.

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.



Riverside County
Waste Management Department

SPECIAL PROVISIONS

FOR

CONSTRUCTION OF

LANDFILL GAS COLLECTION SYSTEM

EXPANSIONS FOR

FISCAL YEAR 2011/2012

THROUGH FISCAL YEAR 2013/2014

AT THE

BADLANDS & LAMB CANYON

SANITARY LANDFILLS

TABLE OF CONTENTS

TABLE OF CONTENTS.....	I
SECTION 1 - GENERAL.....	1
1.1 INTRODUCTION.....	1
1.2 ABBREVIATIONS	1
1.3 DEFINITION OF TERMS.....	4
1.4 SUMMARY OF WORK	6
1.5 REFERENCED SPECIFICATIONS AND DOCUMENTS	7
1.5.1 Standard Specifications:.....	7
1.5.2 State Standard Specifications:.....	7
1.5.3 ASTM Specifications:	7
1.5.4 Standard Drawings.....	7
1.5.5 Plans or Project Drawings:.....	7
1.6 PRECEDENCE OF CONTRACT DOCUMENTS	8
1.7 WORKING DAY DEFINITION	8
1.8 HOLIDAYS.....	8
1.9 TIME OF COMPLETION AND LIQUIDATED DAMAGES.....	9
1.9.1 Working Days	9
1.10 CONTROL OF WORK.....	10
1.10.1 Inspection.....	10
1.10.2 Construction Staking	10
1.11 TESTING AND INSPECTIONS	10
1.11.1 Pipe Backfill.....	11
1.11.2 Piping System Pressure Test.....	11
1.11.3 HDPE Pipe Welds.....	12
1.11.4 HDPE Branch Saddle Welds	12
1.11.5 HDPE Electrofusion Couplings.....	12
1.12 LABOR SURCHARGE.....	12
1.13 EQUIPMENT RENTAL	12
1.14 CONSTRUCTION SCHEDULE.....	12
1.15 CONTRACTOR QUALIFICATIONS	13
1.16 CONTRACTOR RESPONSIBILITIES	14
1.17 SITE SAFETY PLAN.....	15
1.18 ENVIRONMENTAL REQUIREMENTS	16
1.19 PERMITS.....	16
1.20 STORAGE OF MATERIALS	17
1.21 EQUIPMENT STAGING AREA	17
1.22 SUSPENSION AND RESUMPTION OF OPERATION.....	17
1.23 DUST CONTROL	18
1.24 WATER SUPPLY.....	18
1.25 UNITS OF MEASURE.....	18
1.26 ERRORS IN THE OMISSIONS OF DRAWINGS	18
1.27 WARRANTY OF WORK.....	19
1.27.1 Summary	19
1.27.2 Execution	19
1.28 MANDATORY PRE-BID MEETING JOB SITE WALK	20
1.29 ALLOWANCES	20
1.30 REGULATORY REQUIREMENTS	20
1.31 EXISTING CONDITIONS	20
1.32 SITE SECURITY.....	20
1.33 APPROVAL OF MATERIALS.....	21
1.34 MEASUREMENT AND PAYMENT.....	21

1.34.1	General	21
1.34.2	Unit Quantities Specified	21
1.34.3	Measurement of Quantities	21
1.34.4	Payment	21
1.34.5	Defect Assessment	21
1.34.6	Non-Payment for Rejected Products	22
1.35	CONSTRUCTION SITE MAINTENANCE	22
1.36	ODOR CONTROL	22
1.37	CONTACT	23
SECTION 2 - SAFETY		24
2.1	SUMMARY	24
2.2	SAFETY PROCEDURES-WELL DRILLING AND CONSTRUCTION	25
2.2.1	Summary	25
2.2.2	Execution	25
2.3	SAFETY PROCEDURES- CONFINED SPACE ENTRY	26
2.3.1	Summary	26
2.3.2	Inspection	27
2.3.3	Preparation	27
2.3.4	Procedure	27
2.4	EXCAVATION, TRENCHING, AND PIPE INSTALLATION	29
2.4.1	Summary	29
2.4.2	Execution	29
SECTION 3 - MOBILIZATION		31
3.1	GENERAL	31
3.2	MATERIALS	31
3.3	EXECUTION	31
3.4	MEASUREMENT AND PAYMENT	31
3.4.1	Mobilization	31
SECTION 4 - TRENCHING AND EARTHWORK		33
4.1	GENERAL	33
4.1.1	Summary	33
4.1.2	References	33
4.1.3	Protection	33
4.1.4	Final Grading	33
4.1.5	Settlement	34
4.1.6	Construction	34
4.1.7	Costs	34
4.1.8	Excavated Soils	35
4.2	DISPOSAL OF REFUSE AND CONSTRUCTION DEBRIS	35
4.2.1	Summary	35
4.2.2	Disposal Costs	35
4.2.3	Disposal	35
4.3	HORIZONTAL COLLECTION WELL TRENCHING	36
4.3.1	Scope	36
4.3.2	Backfill	36
4.4	ROAD CROSSINGS	36
4.4.1	Scope	36
4.4.2	Backfill	36
4.4.3	Pipe Bedding	37
4.5	MEASUREMENT AND PAYMENT	37
SECTION 5 - INSTALL HORIZONTAL WELL		38

5.1	SUMMARY	38
5.2	MATERIALS.....	38
5.2.1	<i>HDPE Pipe.....</i>	38
5.2.2	<i>Geotextile.....</i>	38
5.2.3	<i>Aggregate.....</i>	38
5.3	EXECUTION.....	38
5.4	MEASUREMENT AND PAYMENT.....	39
SECTION 6 - INSTALL AGGREGATE PITS.....		40
6.1	SUMMARY	40
6.2	MATERIALS.....	40
6.2.1	<i>Geotextile.....</i>	40
6.2.2	<i>Aggregate.....</i>	40
6.3	EXECUTION.....	40
6.4	MEASUREMENT AND PAYMENT.....	41
SECTION 7 - DRILL & INSTALL VERTICAL GAS WELLS		42
7.1	SUMMARY	42
7.2	SCOPE OF WORK	43
7.3	MATERIALS.....	43
7.3.1	<i>Pipe and Fittings</i>	43
7.3.2	<i>Aggregate (vertical wells only).....</i>	43
7.3.3	<i>Bentonite.....</i>	43
7.4	EXECUTION.....	43
7.5	MEASUREMENT AND PAYMENT.....	44
SECTION 8 - INSTALL 2" HDPE PIPE		45
8.1	SUMMARY	45
8.2	MATERIALS.....	45
8.2.1	<i>HDPE Pipe and Fittings.....</i>	45
8.2.2	<i>Extra Materials.....</i>	45
8.3	EXECUTION.....	45
8.4	MEASUREMENT AND PAYMENT.....	46
SECTION 9 - INSTALL 3" AND 6" HDPE LATERAL PIPE		47
9.1	SUMMARY	47
9.2	MATERIALS.....	47
9.2.1	<i>HDPE Pipe and Fittings.....</i>	47
9.2.2	<i>Pipe Clamps and Anchors</i>	47
9.2.3	<i>Extra Materials.....</i>	47
9.2.4	<i>Miscellaneous Parts</i>	47
9.3	EXECUTION.....	47
9.4	MEASUREMENT AND PAYMENT.....	48
SECTION 10 - INSTALL 8", 10", 12" AND 16" HEADER PIPE.....		49
10.1	SUMMARY	49
10.2	MATERIALS.....	49
10.2.1	<i>HDPE Pipe and Fittings.....</i>	49
10.2.2	<i>Pipe Clamps and Anchors.....</i>	49
10.2.3	<i>Rebar</i>	49
10.2.4	<i>Valves.....</i>	49
10.2.5	<i>Extra Materials.....</i>	50
10.2.6	<i>Miscellaneous Part</i>	50
10.3	EXECUTION.....	50

10.4	MEASUREMENT AND PAYMENT.....	51
SECTION 11 RELOCATE 2", 3", 6", 8" 10" AND 12" HDPE PIPE.....		52
11.1	SUMMARY	52
11.2	MATERIALS.....	52
11.2.1	HDPE Pipe and fittings	52
11.2.2	Pipe clamps and anchors.....	52
11.2.3	Rebar	52
11.3	EXECUTION.....	52
11.4	MEASUREMENT AND PAYMENT.....	53
SECTION 12 - INSTALL OR RELOCATE WELL MONITORING ASSEMBLY.....		54
12.1	SUMMARY	54
12.2	MATERIALS.....	54
12.2.1	HDPE Pipe and Fittings.....	54
12.3	EXECUTION.....	54
12.4	MEASUREMENT AND PAYMENT.....	55
SECTION 13 -INSTALL 8,750-GALLON TANK & CONCRETE STRUCTURE.....		56
13.1	SUMMARY	56
13.2	MATERIALS.....	56
13.2.1	Concrete.....	56
13.2.2	Tank.....	56
13.2.3	Seismic Kit	56
13.2.4	Ladder Kit.....	56
13.2.5	HDPE Pipe and Parts.....	56
13.3	EXECUTION.....	57
13.4	MEASUREMENT AND PAYMENT.....	57
SECTION 14 -INSTALL 12,500-GALLON TANK & CONCRETE STRUCTURE.....		58
14.1	SUMMARY	58
14.2	MATERIALS.....	58
14.2.1	Concrete.....	58
14.2.2	Tank	58
14.2.3	Seismic Kit	58
14.2.4	Ladder Kit	58
14.2.5	PVC Bulkhead Fittings	58
14.2.6	HDPE Pipe	58
14.3	EXECUTION.....	59
14.4	MEASUREMENT AND PAYMENT.....	59
SECTION 15 - DEMOBILIZATION		60
15.1	GENERAL	60
15.2	MATERIALS.....	60
15.3	EXECUTION.....	60
15.4	MEASUREMENT AND PAYMENT.....	60

SECTION 1 - GENERAL

1.1 INTRODUCTION

These Special Provisions are for the construction of gas collection system components at the Badlands Sanitary Landfill located at 31125 Ironwood Ave, Moreno Valley, California, and at the Lamb Canyon Landfill located at 16411 Lamb Canyon Rd., Beaumont, California. The project is designated as "Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills" and is hereinafter referred to as the "Project". The Badlands and Lamb Canyon landfill are owned and operated by the Riverside County Waste Management Department (County) and referred to in these provisions as the County.

The work to be performed under this contract shall consist of furnishing all equipment, tools, superintendence, labor, skills, and all other items necessary for the construction of gas collection system components as described in these provisions and shown on the project drawings and at the locations staked by the County at the site. The County shall provide all pipe, fittings, valves, gravel, bentonite, geotextile, bolts, pipe anchors, rebar, pipe stands, posts and base stands to the Contractor. The Contractor shall supply and install all rebar and concrete for containment structures. The major features of the work to be performed during the fiscal year shall include but are not limited to: installation of header pipes, laterals, condensate drain pipes, well assemblies, valves, horizontal, condensate knock-out vessel and vertical gas collection wells. **The bid items reflect the work that is currently expected to be done during entire fiscal years 2011/2012 through fiscal year 2013/2014 in different mobilization phases. As reflected in the bid items, there will be several mobilizations required during the contract duration for each site. It is possible that there will be more or less work required of the Contractor during the contract duration than what is stated in the bid items. Regardless of the actual work done during the contract duration, the Contractor will be paid at the bid item prices. There will be a separate "Notice to Proceed" issued by the County for each mobilization.** The contractor will be reimbursed to mobilize per site, per occurrence. The contractor shall devise a construction schedule within 5 working days once the "Notice to Proceed" is given that will meet all regulatory requirements of the SCAQMD, RWQCB, and CIWMB.

The Contractor shall be aware that the Badlands and Lamb Canyon landfill are active landfill sites. The Contractor's work relating to the project shall not impede or interrupt daily landfill operations. Full cooperation of the Contractor and its forces is required to assure safe working conditions. Therefore, it is necessary to emphasize that the County will have full authority to eject any of the Contractor's employees or subcontractors who do not immediately abide by the landfill site rules or the directions of the County.

1.2 ABBREVIATIONS

AASHTO	American Association of State Highway and Transportation Officials (formerly AASHO)
ACP	Asbestos - Concrete Pipe
AISC	American Institute of Steel Construction
ANSI	American National Standards Institute
AQMD	Air Quality Management District
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials

AWG	American Wire Gauge
AWS	American Welding Society
BFBO	Blind Flange Bolted On
BOP	Bottom of Pipe
CD	Condensate Drain
CI	Cast Iron
CIWMB	California Integrated Waste Management Board
CL	Center Line
CMP	Corrugated Metal Pipe
COND	Condensate
CPE	Chlorinated Polyethylene Reinforced
CS	Carbon Steel
CT	Condensate Trap
DIA	Diameter
DISCH	Discharge
ELEV	Elevation
FML	Flexible Membrane Liner
GB	Grade Break
HDPE	High Density Polyethylene
HDR	Header
IEEE	Institute of Electrical and Electronics Engineers
LAT	Lateral
LEL	Lower Explosive Limit
LFG	Landfill Gas
NEC	National Electrical Code
NEMA	National Electrical Manufacturers Association

NFPA	National Fire Protection Association
NIC	Not in Contract
NMHC	Non-Methane Hydrocarbons
NMOC	Non-Methane Organic Compounds
NPT	National Pipe Thread
NTS	Not to Scale
O&M	Operation and Maintenance
OSHA	Occupational Safety and Health Administration
P&ID	Piping and Instrumentation Diagram
PC	Printed Circuit
PE	Polyethylene
PI	Point of Intersection
PPM	Parts per Million
PVC	Polyvinyl Chloride
RWQCB	Regional Water Quality Control Board
SCAQMD	South Coast Air Quality Management District
SCH	Schedule
SDR	Standard Dimension Ratio
SRB&W	Service Roads, Bridges and Walkways
SS	Stainless Steel
SST	Stainless Steel
STA	Station
STL	Steel
SWANA	Solid Waste Association of North America
TEFC	Totally Enclosed Fan Cooled
TP	Top of Pipe

TYP	Typical
UL	Underwriter's Laboratories, Inc.

1.3 DEFINITION OF TERMS

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.

Fiscal Year

The period of time for the County's business year from July 1 through June 30.

Geosynthetics

Geosynthetics is a generic classification given to synthetic (man-made plastic and/or liner) materials that are used for geotechnical engineering applications. Materials included are: drainage mats, flexible membrane linings (FML), geotextiles, geonets, geogrids, geocomposites, geosynthetic clay liners (GCL) and geocells. For this project, Geosynthetics refers to FML, GCL, and geotextile.

Geotextile

A permeable synthetic textile used with soil, rock, sand, gravel or any other similar materials as an integral part of the lining system.

HDPE

HDPE is the high-density polyethylene material used in the manufacturing of piping and flexible membrane liners.

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, clay or bentonite mixture 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.

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 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.

Quality Assurance (QA) Monitors

The QA Monitors are the individuals working under the direction of the QA/QC Consultant. Such personnel include Field Engineers, Field Geologists, and Technicians.

Project Manager

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

Resident Engineer

The Resident Engineer will serve as the Project Manager's on-site representative. All coordination, reporting, and issues related to non-compliance will be directed to the Project Manager through the Resident Engineer. In addition, the Resident Engineer will participate with the Project Manager and QA/QC Manager in all decisions related to design and QA/QC 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.

County's Surveyor

Surveyor representing the County shall establish reference benchmarks for construction. County's Surveyor shall also perform surveys to check line, grade, and calculate volumes, as required.

Calendar Days

Each day of the year.

Night Hours

Thirty minutes after sunset to 30 minutes prior to sunrise.

Confined Space

Is large enough and so configured that a worker can bodily enter and perform assigned work, has limited or restricted means for entry or exit (for example: tanks, vessels, silos, storage bins, vaults, and pits are spaces that may have limited means of entry or exit), is not designed for continuous occupancy by an employee, and any excavation or trench greater than five (5) feet in depth is by definition a confined space.

Acceptable Entry Conditions

The conditions that must exist in a confined space to allow entry and to ensure that employees involved with a confined space entry can safely enter into and work within the space.

Blanking or Blinding

The absolute closure of a pipe, line or duct by the fastening of a solid plate (such as a blind flange, spectacle blind or a skillet blind) that completely covers the bore and that is capable of withstanding the maximum pressure of the pipe, line or duct with no leakage beyond the plate.

Hazardous Atmosphere

An atmosphere that may expose employees to the risk of death, incapacitation, impairment or ability to self-rescue (that is, escape unaided from a permit space), injury or acute illness from one or more of the following causes: flammable gas, vapor, or mist in excess of 10 percent of its lower flammable limit (LFL), airborne combustible dust at a concentration that meets or exceeds its LFL (This concentration may be approximated as a condition in which the dust obscures vision at a distance of 5 feet); Atmospheric oxygen concentration below 19.5 percent or above 23.5 percent; Atmospheric concentration of any substance for which a dose or a Permissible Exposure Limit or a Threshold Limit Value is published and which could result in employee

exposure in excess of the dose or Permissible Exposure Limit or Threshold Limit Value. Any other atmospheric conditions that is immediately dangerous to life or health.

Immediately Dangerous to Life or Health (IDLH)

Any condition that poses an immediate or delayed threat to life or that would cause irreversible adverse health effects or that would interfere with an individual's ability to escape unaided from a permit space.

Oxygen Deficient Atmosphere

An atmosphere containing less than 19.5 percent oxygen by volume.

Oxygen Enriched Atmosphere

An atmosphere containing more than 23.5 percent oxygen by volume.

Permit-required Confined Space (Permit Space)

A confined space that has one or more of the following characteristics: Contains or has a potential to contain a hazardous atmosphere; Contains a material that has the potential for engulfing an entrant; Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or Contains any other recognized serious safety or health hazard.

1.4 SUMMARY OF WORK

The work to be performed by the contractor under this contract includes furnishing all labor, vehicles, tools, equipment, power, and incidentals necessary for the construction of the Project. The County will provide all pipe, fittings, pipe anchors, valves, bolts, rebar, bentonite and gravel. The County will give the Contractor "Notice to Proceed", location drawings, and supply a list which will include the quantity of items to construct. The Contractor will give the County a construction schedule for the work to be performed within 5 working days of the "Notice to Proceed". The contractor must start construction within 15 working days from the "Notice to Proceed". Bonds, insurance, safety plan, and other required submittals will all be approved after award of the Contract for the full Fiscal Year. 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:

- 1) Mobilization (multiple types)
- 2) Trenching & Earthwork
- 3) Install Horizontal Well
- 4) Install Aggregate Pit
- 5) Drill and Install Vertical Gas Wells
- 6) Install 2" HDPE Pipe
- 7) Install 3" HDPE Lateral Pipe
- 8) Install 6" HDPE Lateral Pipe
- 9) Install 8" HDPE Header Pipe
- 10) Install 10" HDPE Header Pipe
- 11) Install 12" HDPE Header Pipe

- 12) Install 16" HDPE Header Pipe
- 13) Relocate 2" HDPE Pipe
- 14) Relocate 3" HDPE Lateral Pipe
- 15) Relocate 6" HDPE Header Pipe
- 16) Relocate 8" HDPE Header Pipe
- 17) Relocate 10" HDPE Header Pipe
- 18) Relocate 12" HDPE Header Pipe
- 19) Install or Relocate Monitoring Assembly
- 20) Install 8,750-Gallon Tank and Concrete Structure
- 21) Install 12,500-Gallon Tank and Concrete Structure
- 22) Demobilization

1.5 REFERENCED SPECIFICATIONS AND DOCUMENTS

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

1.5.1 Standard Specifications:

The term Standard Specifications is a direct reference to the publication entitled "Standard Specifications for Public Works Construction" (2009 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 "Green book."

1.5.2 State Standard Specifications:

The "State Standard Specifications" are the Standard Specifications of the State of California, Department of Transportation, dated 2006 edition.

1.5.3 ASTM Specifications:

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

1.5.4 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).

1.5.5 Plans or Project Drawings:

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

1.6 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):

1. Permits from other agencies as may be required by law
2. Special Provisions
3. General Provisions
4. Project Drawings (specific details supersede general plan)
5. Standard Drawings
6. Standard Specifications
7. State Standard Specifications

1.7 WORKING DAY DEFINITION

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 4:30 PM, including half hour for lunch break, unless otherwise approved in writing by the County.

1.8 HOLIDAYS

The Contractor shall not be permitted to work on the following days designated by the County as holidays:

September 5, 2011	Labor Day
October 10, 2011	Columbus Day
November 11, 2011	Veteran's Day
November 24, 2011	Thanksgiving Day
November 25, 2011	Friday following Thanksgiving Day
December 26, 2011	Monday after Christmas Day
January 2, 2012	Monday after New Year's Day
January 17, 2012	Martin Luther King, Jr. Day
February 12, 2012	Lincoln's Day
February 22, 2012	Washington's Day
May 28, 2012	Memorial Day
September 3, 2012	Labor Day
October 8, 2012	Columbus Day
November 11, 2012	Veteran's Day
November 24, 2012	Thanksgiving Day
November 25, 2012	Friday following Thanksgiving Day
December 26, 2012	Monday after Christmas Day
December 31, 2012	Monday before New Year's Day
January 1, 2013	New Year's Day
January 21, 2013	Martin Luther King, Jr. Day
February 12, 2013	Lincoln's Day
February 22, 2013	Washington's Day
May 27, 2013	Memorial Day
September 2, 2013	Labor Day
October 14, 2013	Columbus Day
November 11, 2013	Veteran's Day

November 28, 2013	Thanksgiving Day
November 29, 2013	Friday following Thanksgiving Day
December 25, 2013	Christmas Day
January 1, 2014	New Year's Day
January 20, 2014	Martin Luther King, Jr. Day
February 12, 2014	Lincoln's Day
February 22, 2014	Washington's Day
May 27, 2014	Memorial Day

1.9 TIME OF COMPLETION AND LIQUIDATED DAMAGES

The County will give the Contractor "Notice to Proceed", location drawings, and supply a list which will include the quantity of items to construct. **Working days shall be calculated using the information provided in Section 1.9.1 of these Provisions.** The Contractor shall diligently and continuously develop the entire project to final completion before the expiration of submitted construction schedule. In case all the work called for and all the conditions and requirements of the Contract Documents are not completed within the number of working days specified, liquidated damages of one Thousand Dollars (\$1,000) per day 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. The County may also deduct this amount from payments due to the Contractor.

1.9.1 Working Days

Fifteen (15) working days shall be allowed for mobilization

One (1) working day shall be allowed for the following:

- For each four-hundred (400) linear feet of trenching and earthwork installed
- For each four-hundred (400) linear feet of horizontal well installed
- For two (2) gravel pits installed
- For each seventy five (75) linear feet of drilling & vertical gas well installed
- For each one-thousand two-hundred (1,200) linear feet of 2" HDPE pipe installed
- For each one-thousand (1,000) linear feet of 3" HDPE installed
- For each eight-hundred (800) linear feet of 6" HDPE lateral pipe installed
- For each six-hundred (600) linear feet of 8" header pipe installed
- For each four-hundred (400) linear feet of 10" header pipe installed
- For each three-hundred (300) linear feet of 12" header pipe installed
- For each one-hundred fifty (150) linear feet of 16" header pipe installed
- For each one-thousand two-hundred (1,200) linear feet of 2" HDPE pipe relocated
- For each one-thousand (1,000) linear feet of 3" HDPE lateral pipe relocated
- For each eight-hundred (800) linear feet of 6" HDPE header pipe relocated
- For each six-hundred (600) linear feet of 8" HDPE header pipe relocated
- For each five-hundred (500) linear feet of 10" HDPE header pipe relocated
- For each three-hundred (300) linear feet of 12" HDPE header pipe relocated
- For ten (10) well assembly installation or re-location

Five (5) working days shall be allowed for installation of 8,750-gallon tank and concrete containment structure

Seven (7) working days shall be allowed for installation of 12,500-gallon tank and concrete containment structure

Two (2) working days shall be allowed for demobilization

1.10 CONTROL OF WORK

1.10.1 Inspection

- A. The Contractor shall fully cooperate with the County in providing safe access during the County's periodic inspections of the work.
- B. Any work covered before acceptance or approval of the County shall be uncovered if required by the County, for examination at the Contractor's expense.

1.10.2 Construction Staking

1.10.2.1 Staking

The County will indicate the location of the vertical landfill gas extraction wells, horizontal well trenches, and all well field piping by field staking. The Contractor shall offset the stakes as required and perform any other staking or surveying required to complete the project including grade staking.

1.10.2.2 Re-staking

Any re-staking required due to Contractor's destruction of existing stakes will be charged to Contractor. Charges will include hourly rates of surveying personnel including travel time, vehicle and equipment usage, materials, and any other charges associated with the re-staking work.

1.10.2.3 Contractor's Staking

The County may check Contractor's stakes, alignments and grades at any time. All work dependent on the Contractor's stakes shall be postponed until checking is completed.

1.11 TESTING AND INSPECTIONS

The Contractor shall comply with requests by the County to alter the work sequence or uncover materials to facilitate testing, inspection, or observation, or for the collection of samples or data. The Contractor shall provide the County with safe and suitable access to the work area for testing, inspection, or observation.

It is understood that observation and testing of a material at the time of its incorporation into the work shall in no way be considered as a guarantee of continued acceptance of material presumed to be similar to that upon which observations and tests have been made, and that observation and testing performed by the County shall not relieve the Contractor or its suppliers of the responsibility for quality control or to fully comply with the requirements of the Contract Documents.

Material or equipment shall be inspected by the County in accordance with:

- 1) Material or equipment shall be subject to the following tests and examinations.
 1. Visual inspection witnessed by the County:

- A. Satisfactory Workmanship and Assembly
 - B. Freedom from surface defects.
 - C. Checking components
 - D. Checking dimension
 - E. Compliance with:
 - 1. Specifications
 - 2. Project Drawings
- 2) Performance test on each unit to insure that operation is in accordance with the specifications.
- 3) All testing and inspection must be witnessed by the County's representatives unless other arrangements have been made in advance and in writing.

1.11.1 Pipe Backfill

- A. The County, or its representative, at its option, may perform compaction and/or moisture testing for all backfilled materials to verify the compaction requirements of these Specifications.
- B. Installations that fail to meet the compaction or moisture requirements shall be removed and reinstalled until the specifications are met. All costs associated with rework or retesting shall be borne by the Contractor.
- C. The County shall witness all slopes prior to backfill and compaction. Witness by the County does not relieve the Contractor from the requirements of this section.

1.11.2 Piping System Pressure Test

- A. All HDPE pipes, (16", 12", 10", 8" and 6" HDPE header pipes, 3" and 6" HDPE laterals, and 2" condensate line), fittings and valves shall be subject to a pressure test per ANSIB31.8 performed by the Contractor with a representative of the County present.
- B. Extreme caution should be used when working around the pipe being pressure tested due to the high energy content of compressed air. Adequate protection and safety precautions must be used to protect the people and property.
- C. The pipe network may be tested in sections or as an entire assembly at the Contractor's option. The test pressure shall be equal to the maximum rated pressure of the weakest part in the pipe system or 3 PSIG, whichever is lower. Contractor shall provide all temporary plugs, flanges or other sealing devices needed for the air testing. The County recommends conducting the pressure test before well assemblies are connected and also recommends butt fusing temporary HDPE caps on to connections.
- D. The system shall hold pressure for at least 2 hours with no more than a 0.2 PSIG loss in pressure. Should the pressure decrease, all joints shall be soap bubble tested to determine the source of the leak. Repairs shall be made and the system shall be retested. All cost associated with the testing shall be included in the bid price. No separate payment will be made.
- E. No pipe installation will be accepted unless and until it meets the pressure test requirements.
- F. The County or its designated representative shall witness all pressure testing and repair work that may be required.

1.11.3 HDPE Pipe Welds

- A. One HDPE joint may be selected daily at random by the County and cut from the piping joint to verify its integrity. Testing will be performed by the County according to Plexco's "Qualification Procedures for PE 3408 Extra High Molecular Weight High Density Polyethylene Bulletin No. 105Y or 106.
- B. If the joint fails to pass inspection, it shall be re-welded and retested until the weld passes and a minimum of 10% of the previously welded joints done during the day will be randomly cut from the pipe and inspected. If these joints pass inspection, then welding can proceed.
- C. If any of the 10 percent fail, all weld joints made during that day shall be removed from the pipe and re-welded. These welds are also subject to the above procedure. All costs associated with re-welding shall be borne by the Contractor.

1.11.4 HDPE Branch Saddle Welds

All 3" and 6" HDPE branch saddles shall be welded to the HDPE header pipe using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent. Under no circumstance will saddles be welded to the header pipes using "free hand" techniques. The header pipe and branch saddle shall be properly cleaned and scuffed per industry standards.

1.11.5 HDPE Electrofusion Couplings

All electrofusion couplings shall be installed in accordance with the manufacturer's recommended specifications. A representative from the County shall be present to witness the installation of the electrofusion couplings. The pipe shall be properly scuffed and new fittings shall be no less than 1/2" shorter than the piece of pipe removed from the existing pipe. A representative from the County will also verify that the electrofusion amperage and manufacturer's recommended fusion time are met.

1.12 LABOR SURCHARGE

Attention is directed to the provisions of 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 eleven percent (11%). The labor surcharge percentage to be applied to the overtime hourly wages paid as defined in Section 7.3.1.1. shall be eleven percent (11%).

1.13 EQUIPMENT RENTAL

Attention is directed to the provisions of 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.

1.14 CONSTRUCTION SCHEDULE

- 1) The Contractor shall submit a construction schedule to the County within five (5) working days of issuance of the "Notice to Proceed" in accordance with Part 1, Section 6-1 "Construction Schedule and Commencement of Work", of the Standard Specifications. Updated construction schedules shall be submitted to the County as required per Section 2.2 of the General Provisions. After being given the "Notice to Proceed" for each phase, the Contractor shall be provided a map from the County showing the proposed landfill gas collection system construction activities. The Schedule shall include as a minimum, the start and finish dates for each tasks or activity. During active phases, the construction schedule shall be updated by the Contractor biweekly and each time a change in work

occurs that will delay a critical path item of the project. Each updated schedule shall be submitted to the County for review and acceptance. The updated schedule shall show the actual progress of work and the work remaining. Progress payments will be withheld by the County if the Contractor fails to provide acceptable schedules as required.

- 2) The Contractor shall work diligently to complete those activities or portions of work in a timely manner, so that no delay will be caused to their work activities.
- 3) The County must review and approve the final construction schedule prior to the commencement of work. If the County has concerns and comments on the schedule submitted by the Contractor, then the Contractor must make the changes to the schedule accordingly until it is approved by the County.
- 4) The schedule must be updated and submitted every two weeks with the following information.
 1. Activities that are completed or in progress are to be identified on the schedule.
 2. Restraints imposed by material deliveries, precedent activity durations or schedule adjustments, are to be appropriately represented.
 3. The schedule shall indicate the percent of work actually completed and their total value.
 4. All activities that are behind schedule shall be identified and reported with a new revised time of completion.
- 5) The Contractor shall be responsible for the coordination and cooperation of all subcontractors, material suppliers, utilities, and any required testing agencies, so that all components are properly integrated into the construction, and so there are no resulting delays in the progress of the project. The Contractor shall be responsible for cooperating with all County staff. Payment for complying with this section shall be considered as included in the various items of work, and no additional compensation shall be allowed.

1.15 CONTRACTOR QUALIFICATIONS

The Contractor shall be, at the time of bidding, and throughout the period of the Contract, licensed by the State of California to do the type of work required under terms of these Contract Documents.

The Contractor's superintendent shall have successfully installed a minimum of ten (10) thousand linear feet of HDPE header pipe in a landfill for the collection of landfill gas, constructed five (5) thousand linear feet of horizontal landfill gas collection well trench, and drilled and constructed one (1) thousand linear feet of vertical landfill gas collection well.

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 gas collection system construction projects in his bid response. 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 or C-34 Contractor's License.

The Contractor shall demonstrate that his project manager, equipment operators, and other responsible individuals performing work on site have appropriate experience and capability. The Contractor shall present personal resumes that document education, training, work experience, and licenses and certificates held in his bid response.

1.16 CONTRACTOR RESPONSIBILITIES

- 1) 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:
 1. Applicable health and safety regulations
 2. Transportation and access conditions
 3. Availability of utilities
 4. Surface and subsurface conditions
 5. Location, availability, and condition of construction materials
 6. Climate
 7. 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.
 8. General construction conditions at the site
- 2) 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.
- 3) Until County final acceptance of the entire project, the Contractor shall retain full responsibility for the work.
- 4) Payment for complying with this section shall be considered as included in the various items of work, and no additional compensation shall be allowed.
- 5) The Contractor shall review shop drawings, product data and samples prior to submitting them to the County. As a minimum, the Contractor shall determine and verify the following:
 1. Field Measurements
 2. Field Construction Criteria
 3. Catalog numbers and similar data
 4. Conformance with the Specifications
- 6) The Contractor shall provide with each drawing, working drawing, sample and catalog data submitted to the County, a signed certificate stating that he has determined and verified all field measurements, field construction criteria, materials, dimensions, catalog numbers and similar data, and has checked and coordinated each item with other applicable approved Shop Drawings and all Contract requirements.

- 7) The Contractor shall notify the County in writing, at the time of submittal, any deviations in the submittals from the requirements of the Contract Documents.
- 8) The review and approval of Shop Drawings, samples or catalog data by the County shall not relieve the Contractor from responsibility to fulfill the terms and conditions of the Contract. All risks of error and omission are assumed by the Contractor and, therefore, the County shall have no responsibility thereof.
- 9) No work requiring a shop drawing, working drawing, sample, or catalog data shall start nor shall any materials be fabricated or installed prior to their approval by the County. Fabrication performed, materials purchased or on-site construction accomplished which does not conform to approved shop drawings and data shall be at the Contractor's risk. The County shall not be liable for any expense or delay due to corrections or remedies required to accomplish conformity.
- 10) All work, materials, fabrication, and installation shall conform to approved shop drawings, working drawings, applicable samples, and catalog data.

1.17 SITE SAFETY PLAN

Within ten (10) working days of execution of the Agreement by both parties, and prior to delivering equipment to the construction site, the Contractor shall submit a Site Safety Plan for each landfill to the County for review and acceptance. Acceptance of the Site Safety Plan does not 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 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 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 work, the public, and County employees. The Contractor shall be responsible for providing all items necessary for health and safety, including but not limited to 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 will 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 and the Site Safety Plan or applicable regulations.

Where necessary, trenches, pits, and other excavations shall be properly sheathed and braced to furnish safe and acceptable working conditions. Any damage occurring from earth pressures, slides, cave-ins, or other causes due to failure to provide proper sheeting or bracing, or through other negligence or fault of the Contractor, shall be repaired at the Contractor's sole expense. The manner of bracing for excavations shall be as set forth in the rules, orders, and regulations of the Division of Industrial Safety of the State of California or OSHA; whichever is more restrictive. Reference is made to Section 5.1.5 "Accident Prevention" of the General Provisions, in which the Contractor is required to submit to the County a detailed plan showing the design of shoring, bracing, sloping of the sides of trenches, or other provisions to be made for the protection of personnel during earthwork operations in advance of any such operation.

The Site Safety Plan shall also include procedures that address clean-up in the event of a spill. 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. The County may require documentation showing proper containment and removal of any toxic materials or contaminated soil that the Contractor has introduced or produced on site.

The Site Safety Plan shall also include procedures that address traffic control for approaching or crossing public access roads internal to the landfill. The most current traffic control plan shall be submitted by the County to the Contractor to include but not limited to delineation of the proposed haul routes, traffic direction, signs, and traffic control devices on a site map. All planned signs and traffic control devices shall be industry standard and conform to the "Manual of Traffic Controls for Construction and Maintenance Work Zones" (1996 edition, version 2) by the State of California Department of Transportation. Signs and traffic control devices along public access or landfill operation routes shall be removed and stored or covered during periods of time when they are not needed (such as at the end of each working day; weekends, and any time when no hauling work operation is being performed).

The Contractor shall be responsible for holding mandatory weekly safety meetings at 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 and shall discuss any violations committed and preventive measures to avoid subsequent violations. The Contractor shall provide the County with a copy of the minutes and the attendance of the safety meetings.

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 ENVIRONMENTAL REQUIREMENTS

The Contractor shall at all times keep the 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 Plan (BEP) as shown in Appendix "D" of these Contract Documents. Containers temporarily holding these toxic materials shall be covered and have no leaks, and shall be removed from the site as quickly as is reasonably possible.

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. The Contractor shall also be responsible for any spills caused by any of its subcontractors. The Site Safety Plan shall include the procedure the Contractor shall follow in the event there is a spill.

The Contractor shall comply with and supplement, if necessary, the Riverside County Hazardous Materials Business Emergency Plans for each site (Appendix D). The Contractor shall submit a separate Hazardous Materials Business Emergency Plan 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) Plan for the Badlands and Lamb Canyon Landfill as shown in Appendix E of these Contract Documents, 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.

1.19 PERMITS

The Contractor shall obtain and comply with all required permits and licenses related to the work, pay all charges and fees, and give a copy of all required documents to the County prior to commencement of work. Required permits include but are not limited to:

The Contractor shall comply with all applicable CIWMB and SCAQMD requirements for disposal of waste materials.

The County complies with the State NPDES through regular inspections, monitoring and implementation of best management practices as described in the Badlands and Lamb Canyon Landfills' Storm Water Pollution Prevention Plan (SWPPP). The Contractor shall be responsible for compliance with the SWPPP, including any new regulations during contract period, attached as Appendix C. In addition, 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) outlining procedures to reduce pollutants (directly or indirectly related to the Contractor's activities) in storm water runoff. This will be included as part of the County's NPDES Permit (Appendix C.).

1.20 STORAGE OF MATERIALS

An area for the storage of the Contractor's equipment will be delineated on the drawings submitted by the County to the Contractor with the "Notice to Proceed". All Contractor equipment and tools shall be stored in the designated area, unless the Contractor obtains the County's written approval for an additional area. All imported materials to be used in construction shall be handled in accordance with manufacturer and supplier recommendations, to prevent damage to the material.

The Contractor shall protect County supplied materials, once removed from the County storage area by the Contractor, from sun, rain, mud, soil, and debris, and 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 County personnel and equipment, or to the public.

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

1.21 EQUIPMENT STAGING AREA

An area for the storage of the Contractor's equipment will be designated to the Contractor prior to mobilization. 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 in accordance with drawings provided by the County to the Contractor with each phase "Notice to Proceed" or 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 County operations at the site. Care shall be exercised to avoid blocking roads, interfering with County operations, or presenting a hazard to County personnel and equipment, or to the public.

1.22 SUSPENSION AND RESUMPTION OF OPERATION

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 reason. The Contractor shall not be compensated monetarily for any such delays caused by the suspension of operations. Working days shall be charged as appropriate in accordance with the Contract Documents.

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 on fill materials until these materials have dried sufficiently to prevent excessive rutting and to allow the equipment to be operated satisfactorily. If rutting occurs, the Contractor shall re-level, 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.

1.23 DUST CONTROL

Dust control operations shall be performed by the Contractor at the time, location and in the amount required and as often as necessary to prevent all excavations, stockpiling or fill works, demolition operations, or other activities from producing dust in amounts harmful to persons or causing a nuisance to persons living nearby or occupying buildings in the vicinity of the work. The Contractor is responsible for compliance with Rule 403 Fugitive Dust Regulations and Rule 1150.1 and all Permits to Construct issued by the South Coast Air Quality Management District (SCAQMD) and any other applicable regulations.

Control of dust shall include but not be limited to: sprinkling of water, use of approved dust suppressants, modifications of operations or any other means acceptable to the County, the California Regional Water Quality Control Board (CRWQCB), the SCAQMD, and any agency having jurisdiction over the facility. The County shall have the authority to suspend all construction operations if, in the County's opinion, the Contractor fails to adequately provide for dust control.

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

1.24 WATER SUPPLY

Clean water shall be used in construction for moisture conditioning, dust control, and in all other uses. There is no potable water at either landfill. The nearest fire hydrant to the Badlands landfill is located near the intersection of Ironwood Ave. and Theodore and is approximately one mile from the landfill site. The nearest fire hydrant at the Lamb Canyon landfill is located at East 1st St., located approximately 3.3 miles from the landfill. The Contractor may draw water from these hydrants at no cost through the County's meter for the exclusive use of this project. At the County's option, and time permitting, water may at times be provided by the County's water truck to the Contractors tank on-site. Any other source of water shall be approved by the County.

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

1.25 UNITS OF MEASURE

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. Length is measured in feet and inches.

1.26 ERRORS IN THE OMISSIONS OF DRAWINGS

The written dimensions on the Project Drawings are presumed to be correct, but the Contractor shall be required to check carefully all dimensions before beginning the Work. If errors or omissions are discovered, the County immediately shall be so advised in writing and will make the proper corrections. No extra work shall be performed on this contract on account of errors and omissions without the express and written authorization by the County.

1.27 WARRANTY OF WORK

1.27.1 Summary

- A. The Contractor shall warrant and guarantee the performance of all Work. The Contractor shall be responsible for the correction of all deficiencies of work, including detailed design and fabrication performed by the Contractor, all Subcontractors, vendors, and suppliers.
- B. The Contractor's warranty period shall be a minimum of sixty (60) days from the date of final project acceptance by the County, except where longer warranty periods are specifically stated by the manufacturer of individual components or required in the Specifications.
- C. The Contractor shall assign all warranties and guarantees of equipment vendors which extend the minimum warranty to the County. Point of sale/purchase and date of purchase of equipment items shall be submitted.
- D. The Contractor shall guarantee all materials and workmanship suitable for the service intended and that said materials shall be free from all inherent defects in design and workmanship. All costs to correct defects shall be at the Contractor's expense.
- E. The performance of guarantee and conditions specified in this section shall be secured by a surety bond per Section 5.14 of the General Provisions.

1.27.2 Execution

- A. All work which has been rejected or defects discovered after project close-out shall be remedied, or removed and replaced, by the Contractor at the Contractor's own expense, with work conforming to the Project Drawings and Specifications. Latent defects which become apparent after lapse of the warranty period shall be corrected by Contractor at its sole cost and expense provided County notifies Contractor of such defect within two (2) months after discovery thereof by County. Failure to inspect work at any stage shall not relieve the Contractor from an obligation to perform sound and reliable work as herein described
- B. The County will endeavor to locate errors or defective materials of workmanship and call them to the attention of the Contractor prior to subsequent work being performed. However, the County is under no obligation to do so, and neither the County shall be held liable because errors or defective material or workmanship by the Contractor are not discovered by the County prior to subsequent work. Any omission or failure on the part of the County to discover, or notify the Contractor of, or to condemn defective work or material at the time of construction shall not be deemed an acceptance, and the Contractor will be required to correct defective work or material.
- C. During the warranty period, should the Contractor fail to remedy defective material or workmanship, or to make replacements within five (5) working days after written notice by the County, it is agreed that the County may (but is not bound to) make such repairs and replacements and the actual cost of the required labor and materials shall be chargeable to and payable by the Contractor.
- D. In the event that immediate repairs are required by a regulatory agency due to system failure caused by or due to defective material or workmanship, repairs and/or replacements may be made by County if Contractor does not respond upon notification or cannot be contacted. The actual cost of the required labor and materials shall be chargeable to and payable by the Contractor.

- E. The warranty provided herein shall not be in lieu of, but shall be in addition to any warranties or other obligations otherwise imposed by law. The remedies provided herein shall not be exclusive and the County shall be entitled to any and all remedies provided by law.

1.28 MANDATORY PRE-BID MEETING JOB SITE WALK

A mandatory pre-bid meeting will be held on Tuesday August 2, 2011 at 10:00 a.m. starting at Badlands landfill and continuing on to Lamb Canyon Landfill. An opportunity to review the job site and ask questions will be made available at that time.

1.29 ALLOWANCES

The Contractor shall provide allowances for unforeseen circumstances which may arise from conditions unknown at the time of bidding. These allowances shall be for the purpose of providing necessary time and expense involved in completing the work within the time and budget given in the Contract Documents.

1.30 REGULATORY REQUIREMENTS

- 1) The Contractor shall be familiar with all regulatory requirements associated with the Work including Cal OSHA, South Coast Air Quality Management District (SCAQMD), Regional Water Quality Control Board (RWQCB), CalRecycle, Riverside County Health Service Agency and the Riverside County Waste Management Department. All expenses incurred as a result of non-compliance with regulations shall be borne by the Contractor.
- 2) The Contractor shall procure all construction, excavation permits and licenses, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work, unless already provided for by the County. All Work is subject to inspection by the governmental agencies that have jurisdiction over the Work. The Contractor and all subcontractor(s) shall be responsible for complying with all of the requirements of the governmental agencies' permit(s), including but not limited to SCAQMD.

1.31 EXISTING CONDITIONS

- 1) The Project Drawings cover typical design in an approximate manner only. The Contractor shall work with the County to construct landfill gas system components to match field conditions.
- 2) Bidder acknowledges that there exist certain peculiar and inherent conditions during construction in and around refuse which may create unsafe conditions hazardous to persons and property.

1.32 SITE SECURITY

- 1) Damage to construction machinery and installation equipment by accident, vandalism, or acts of nature shall be borne by the Contractor. Due to past episodes of vandalism and theft, the County strongly recommends that the contractor lock up all tools, equipment and parts after working hours and on weekends.
- 2) Damage or loss of materials, parts and components of the construction work, which occur before final acceptance by the County, shall be borne by the Contractor.
- 3) Contractor shall close access to the work area prior to performing other work and shall maintain the closure until construction in that area is complete. In order to assure the effectiveness of the closure, Contractor shall provide at the Contractors expense such means as are necessary, including but not limited to fences, barricades, posting of signs, guard, or any other means deemed prudent by the Contractor.

- 4) The area where work is performed shall be protected daily to prevent access by unauthorized personnel.

1.33 APPROVAL OF MATERIALS

The material used on the work shall correspond to the materials stated in these provisions.

1.34 MEASUREMENT AND PAYMENT

1.34.1 General

The unit prices in the Contractor's Proposal are to cover all expenses incurred in performing the work required under the Contract Documents. The unit prices shall include all labor, taxes, equipment, hauling, excavating, overhead, profit, insurance, permits, bonds, etc. to cover the finished work called for.

1.34.2 Unit Quantities Specified

- A. Quantities and measurements indicated in the Contractor's Proposal are for estimates only. Quantities placed in the Work as measured by the County shall determine payment.
- B. If the actual Work requires larger quantities than indicated, the Contractor shall provide the required quantities at the unit prices contracted.

1.34.3 Measurement of Quantities

- A. Measurement by Depth: Measured by actual depth of completed well.
- B. Measurement by Weight: No item in the Contractor's Proposal will be measured by weight.
- C. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- D. Measurement by Area: Measured by square dimension using mean length and width or radius.
- E. Linear Measurement: Measured by linear dimension, at the item centerline or mean chord.
- F. Unit Price Measurement: Items measured by volume, area, or linear means or combination, as appropriate, as a completed item or unit of the Work.

1.34.4 Payment

- A. Payment Includes: Full compensation for all required labor, tools, equipment, plant, transportation, sale taxes, services and incidentals, erection, application or installation of an item of the Work, overhead and profit.
- B. Final payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities accepted by the County multiplied by the unit price for Work which is incorporated in or made necessary by the Work.

1.34.5 Defect Assessment

- A. The County shall decide whether or not the Work, or portions of the Work, needs to be replaced in order to conform to specified requirements.

- B. If, in the opinion of the County, it is not practical to remove and replace the Work, the County will direct one of the following remedies:
 - 1. The defective Work may remain, but the unit sum/price will be adjusted to a new unit/price at the discretion of the County.
 - 2. The defective Work will be repaired in accordance with the instructions of the County, and the unit sum/price will be adjusted to a new unit price at the discretion of the County.
- C. The individual specification sections may modify these options or may identify a specific formula or percentage unit price reduction.
- D. The authority of the County to assess the defect and identify payment adjustment is final.

1.34.6 Non-Payment for Rejected Products

- A. Payment will not be made for any of the following reasons:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling and disposing of rejected Products.

1.35 CONSTRUCTION SITE MAINTENANCE

- 1) The Contractor shall keep all areas clear of debris, refuse or construction materials that render the construction area an eye-sore or odor source.
- 2) Throughout the period of construction, the Contractor shall keep the work site clean of all rubbish and debris, and shall promptly remove from any portion of the site, or from property adjacent to the site of the Work, all unused materials, surplus earth and debris, excepting select material which may be required for refilling or grading.
- 3) Upon completion of the Work, and prior to final acceptance, the Contractor shall remove from the vicinity of the Work all surplus material and equipment belonging to the Contractor or used under the Contractors direction during construction, shall clean the site, and remove rubbish and debris.

1.36 ODOR CONTROL

- 1) During trenching and/or drilling, if a considerable number of complaints are received, all work shall cease and approved mitigation measure shall be implemented immediately.
- 2) Trenches, excavations and bore holes shall be closed and sealed at the end of each work day.

1.37 CONTACT

For information or technical questions, please contact:

Mark Hunt, Senior Civil Engineer
Riverside County Waste Management Department
14310 Frederick Street
Moreno Valley, California 92553
(951) 486-3247

END OF SECTION

SECTION 2 - SAFETY

2.1 SUMMARY

- 1) Contractors shall comply with Provisions of Occupational Safety and Health Administration Regulations for Construction, 29 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 Health and 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.
- 2) 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.
- 3) The Health and Safety Plan shall have provisions for all aspects of protection against bodily injury from heavy construction equipment, tools and equipment required to construct the system. Additionally provisions shall be made to protect against ingestion, absorption or inhalation of hazardous compounds. The plan shall also have provisions for the excavation of refuse which shall be handled in a safe, sanitary, and proper manner.
- 4) The Contractor shall be responsible for holding 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 and shall discuss any violations committed and preventive measures to avoid failure violations. The Contractors shall provide the County with a copy of the minutes and the attendance at the safety meetings.
- 5) The Contractor shall under no circumstances deviate from the Health and Safety Plan requirements and shall be responsible for any violation of the rules and regulations in effect. The County shall issue an order to stop all work and the Contractor shall not be entitled to any extension of the time or any claim for damage or to any compensation for either the directive or the work suspension order.
- 6) Acceptance of the Health and Safety Plan by the County does not release the Contractor of liability in the event of an accident or injury, nor does it place any liability on the County.
- 7) The exact nature of materials and wastes disposed of at the landfill is unknown. The possibility exists of encountering gases and/or other substances during the Work that may be potentially hazardous to the safety and health of personnel, especially those working in the vicinity of open excavations and pipes venting gases.
- 8) The Contractor shall have sole responsibility for the safety, efficiency, and adequacy of the Contractor's equipment and methods, and for any damage or injury resulting from their failure, or improper maintenance, use, or operation. The Contractor shall be solely and completely responsible for the conditions at the Work area arising from the Contractor's execution of the Work, including safety and health of all authorized persons and property involved in the performance of the Work. This requirement shall apply continuously and not be limited to normal working hours. The County's review of the Contractor's performance does not relieve the Contractor of responsibility for compliance with applicable laws, regulations and requirements.

- 9) The Contractor shall observe and comply with all applicable laws, regulations for hazardous waste operations, employee safety and health requirements set forth in these specifications or otherwise applicable to the Work. Such information, interpretation, or representation of laws, regulations or ordinances referenced in the Contract Document shall not take precedence over the laws, regulation or ordinance itself. Information on the types quantities and concentrations of contaminants which may be found in the landfill gas can be found in gas test reports available from the County.

2.2 SAFETY PROCEDURES-WELL DRILLING AND CONSTRUCTION

2.2.1 Summary

- A. The purpose of this section is to establish responsibilities and guidelines for safe work practices while performing well drilling and construction activities. The Contractor shall be responsible for planning and conducting work as safely and efficiently as possible.
- B. It is the responsibility of the Contractor to ensure that all personnel are properly trained in the appropriate safety practices and procedures the work.
- C. A safety coordinator, supplied by the Contractor, shall be present at all times during construction work on or within 1,000 feet of the landfill. The safety coordinator will have responsibility to assure observance of all Contractor safety procedures, and shall be trained in the use of all safety equipment.
- D. The Contractor shall submit a site-specific safety plan to the County for review and acceptance prior to starting the work. The site-specific safety plan shall be at least as stringent as the guidelines included herein. The Contractor is solely responsible for the site-specific safety plan and its implementation and neither the County shall have liability resulting in injury or death to Contractors, Contractor employees or subcontractors and their employees.

2.2.2 Execution

- A. Any person working near the edge of a drilling operating (greater than 8 inches in diameter) is required to wear a parachute style body harness with lanyard anchored to an immobilized drill rig or other safe immobilized structure. The area surrounding the bore hole where personnel must wear a safety harness will be identified with barricade tape. The Contractor may propose an alternative safety procedure. Upon its discretion the County may or may not approve alternative safety procedures.

Due to the typically oxygen deficient atmosphere in the subsurface, anyone falling into an excavation well, even a short distance, would probably not survive. For this reason, all personnel working near the hole must be tethered.

- B. A minimum of two fire extinguishers shall be provided at the drilling site by the Contractor. (Two, 20: A-80: BC are required.) The drilling crew shall be alert for the potential for the drill auger to spark against rock or metal causing a serious fire in the boring. LFG will typically burn almost invisibly under such circumstances. Fires should be extinguished by covering the boring with earth materials using earth moving equipment such as a backhoe.
- C. Smoking is prohibited except in designated areas. Designated areas have been established at each landfill. The designated smoking areas for each landfill shall be indicated on maps provided after the "Notice to Proceed" for each phase is issued.
- D. No worker shall be allowed to work alone at any time near the edge of the boring under construction. At least one other worker shall be present, beyond the areas considered to be

subject to possible effects of LFG or cave-in. The number of persons working near the boring should be limited to only those required to accomplish the task; however, there should be sufficient workers nearby to remove an injured worker or summon help.

- E. During drilling, special consideration must be given to the less stable conditions represented by refuse. Refuse must be considered prone to instability that may cause side wall failure of the boring at anytime. If this were to occur, the magnitude of the failure could be substantial. Individuals could be buried in an oxygen deficient environment.

It is essential that drilling personnel remain alert at all times to changing subsurface conditions and signs of impending physical failure such as fissures, etc. It is not uncommon to experience a "hollowing out" effect creating a cavity at a depth much larger than the boring due to side wall failure "downhole". This could cause a sudden collapse to occur at the surface. It should be remembered that the drill rig usually exerts a large vibratory force at the surface in the vicinity of the boring.

- F. Drilling personnel shall be alert to the potential for encountering subsurface hazards, particularly in older landfills where screening of disposal materials may have been less controlled. Potential hazards include:

1. Unknown hazardous chemicals in drums or containers which could include combustible, explosive, reactive, toxic or corrosive materials.
2. Military Munitions
3. Asbestos
4. Compressed Gas Cylinders
5. Biomedical Waste
6. Radioactive Waste

If any of these hazardous waste are exposed, drilling or excavation should stop at once and the County and local fire department immediately notified until the extent of the hazard can be determined.

- G. The work area shall be periodically monitored by the Contractor for levels of combustible gases, volatile organics and H₂S during drilling and excavation. The Contractor shall determine the safety of continued drilling based on the monitoring results. The Contractor's evaluation is subject (although not required) to review and approval by the County.
- H. The Contractor shall complete each excavated well prior to the end of the working day. A well shall be considered complete if the borehole has been backfilled to the landfill surface.
- I. All in-place pipe and well casings shall be capped at the end of each working day.

2.3 SAFETY PROCEDURES- CONFINED SPACE ENTRY

2.3.1 Summary

- A. This section emphasizes the Contractor's responsibilities for the procedures involved in obtaining, issuing and complying with OSHA Permit-Required Confined Spaces work permits.
- B. OSHA defines permit-required confined spaces as ones which contain any recognized hazard such as: hazardous atmospheres, engulfment hazards, sloping walls where an employee could

get trapped, etc. The rule also allows for declassification of Permit-Required Confined Spaces if the space can be made safe to enter through the use of forced ventilation to eliminate a hazardous atmosphere. The County and/or Contractor's Safety Officer will differentiate between permit spaces and non-permit spaces by the use of a Confined Space Check sheet which will be used of every confined space entry. This check sheet shall be used to determine whether the confined space requires a permit prior to entry. The Contractor shall comply with the County's and/or Safety Officer's decision to require a permit for any confined space.

2.3.2 Inspection

The Contractor's Safety Officer shall inspect each confined space prior to entry of any personnel. The Contractor's Safety Officer shall determine the requirement for a confined space entry permit. The requirement for confined spaces shall include the danger posed by the permit space. Hazards shall be evaluated listed as follows:

- A. Atmospheric hazards
 - 1. Asphyxiating hazards
 - 2. Toxic atmosphere
 - 3. Flammable or explosive atmosphere
- B. Engulfment
- C. Mechanical hazards
- D. Electrical shock
- E. Other, such as burns, heat stress, radiation, noise

2.3.3 Preparation

- A. The Contractor shall be responsible for informing all employees or representatives of locations and hazards of all permit-required confined spaces.
- B. Permit-required confined spaces where inadvertent entry is feasible shall be posted with a sign reading "DANGER-PERMIT REQUIRED CONFINED SPACE--DO NOT ENTER".
- C. Inadvertent entry into permit-required confined spaces being controlled through work permit procedures during periods when active work in the confined space is not taking place shall be controlled at all times by any of the following:
 - 1. An attendant positioned near the confined space entrance continuously providing surveillance against unauthorized entry.
 - 2. Barricading of the entrance to the confined space to prevent entry and placing a sign in the entrance to the confined space reading "DANGER-PERMIT REQUIRED CONFINED SPACE--DO NOT ENTER".

2.3.4 Procedure

Basic Requirements for permit-required space entry:

- A. Identify and evaluate the hazards of a permit-required space and develop a specific entry permit for controlling hazards during entry and work within the permit-required space. The plan shall be included as part of the site-specific Health and Safety Plan required according to Section 1.17. The plan shall at a minimum contain the following:

1. Identification of chemical potential and hazards
 2. Blind/isolation list
 3. Ventilation to obtain and maintain acceptable entry conditions
 4. Location of nearest emergency phone/communication
 5. Special instructions for the attendant, if necessary
- B. All lines in and out of the permit-required space must be isolated.
1. Internal coils, tubes, etc. are considered part of the permit-required space.
 2. Pipeline blind flanges, plugs or caps shall have a pressure rating equal to the line source, must be secured and sealed and shall be tagged.
 3. Physically disconnecting and removing a section of line is acceptable isolation.
 4. Using a double block and bleed valve assembly.
- C. All energy sources must be locked out in accordance with the facility lockout/tag-out policy.
- D. The permit-required space shall be purged, flushed or ventilated as necessary to control atmospheric hazards.
- E. The permit-required space shall be ventilated if necessary to obtain and maintain acceptable entry conditions.
- F. Power sources to ventilation equipment shall be tagged to prevent inadvertent de-energizing.
- G. Atmospheric samples within the permit-required space shall be taken as necessary to verify that conditions for entry and work within the permit space are met. It is mandatory to carry out testing before entry is authorized.
1. All permit-required spaces shall be tested by the Contractor to assure the following atmospheric conditions are being met. These tests must be carried out in the order indicated using a properly calibrated direct-reading instrument.
 - a. Oxygen content must not be below 19.5 percent or above 23.5 percent by volume. If adequate oxygen level is not present no other testing should be done until this oxygen level is established. If the oxygen content differs by more than 0.2 percent from the atmospheric oxygen, the cause should be investigated and continuous monitoring considered.
 - b. Explosive gas, vapor, or mist must be below 10 percent of the lower explosive limit.
 - c. Atmospheric concentration of any substance for which a dose or a Permissible Exposure Limit (PEL) or a Threshold Limit Value (TLV) has been published and which could result in excess of its dose or PEL or TLV. In lieu of monitoring for all potential substances, a total combustible gas limit of 100 ppm may be used as a guideline by the Contractor's Safety Officer for determining a hazardous atmosphere.
 - d. In addition to these tests carried out using calibrated direct-reading instruments, the permit-required space must not contain a hazardous atmosphere as defined previously.
- H. Pedestrian, vehicle, or other barriers as necessary to protect entrants from external hazards shall be provided.

- I. The Contractor shall use electrical equipment in the permit required confined space that is 12 volts or less or protected by the ground fault circuit interrupter(GFI) located outside the permit-required space.
- J. Lighting equipment shall be provided to enable employees to see well enough to work safely and to exit the space quickly in an emergency.
- K. Personal protective equipment shall be provided by the Contractor and its use will be required by the Contractor's Safety Officer whenever feasible engineering and work practice controls do not protect entrants.
- L. Communications equipment shall be provided as required to allow communication between the attendant and entrants.
- M. Testing and monitoring equipment will be provided and testing and monitoring of the permit space carried out as necessary to assure that acceptable entry conditions are being maintained during the course of entry operations.
- N. An attendant shall be provided to monitor the permit-required space during the period entrants are in the permit-required space.

2.4 EXCAVATION, TRENCHING, AND PIPE INSTALLATION

2.4.1 Summary

- A. The purpose of this Section is to establish responsibilities and guidelines for safe work practices while performing excavation, trenching and pipe installation activities. The Contractor shall be responsible for planning and conducting work on the landfill as safely and efficiently as possible.
- B. It is the responsibility of the Contractor to ensure that all personnel are properly trained in the appropriate safety practices and procedures of this operation.
- C. A safety coordinator supplied by the Contractor shall be present at all times to assure compliance with all safety procedures during any excavation, trenching or pipe installation work. The safety coordinator shall be trained in the use of all required safety equipment.

2.4.2 Execution

- A. Smoking is prohibited except in designated areas. Designated areas have been established at each landfill. The designated smoking areas for each landfill shall be indicated on maps provided after the "Notice to Proceed" for each phase is issued.
- B. No worker will be allowed to work alone at any time in or near an excavation or trenching site. Other workers will be stationed beyond the area considered to be subject to the possible effects of LFG to assist in removing an injured or endangered worker or to summon help.
- C. No worker may handle excavated solid waste or leachate without wearing appropriate work gloves and clothing, which will provide an adequate barrier to the waste.
- D. Any time excavations and trenching exceed five (5) feet in depth; shoring, bracing or sloping of the side walls is required prior to personnel entry. If sloping is the method used to prevent cave-in, slope the side walls of the trench at a 45 degree angle away from the trench. (This is an OSHA requirement).

- E. Entry into excavations or trenches greater than five (5) feet in depth shall be considered a confined space. The Contractor's Safety Office shall determine the requirements for a Confined Space Entry Permit according to Section 2.3, of these Provisions.
- F. Many gases are heavier than air and settle in low areas such as trenches and excavations, therefore, additional precautions must be observed in these areas. Specifically, the need for constant O₂ monitoring, forced ventilation, combustible gas monitoring, respiratory protective equipment, etc. shall be determined by the Contractor. The County may impose additional requirements when deemed necessary for worker safety.
- G. Construction equipment must be equipped with a vertical exhaust at least five (5) feet above grade or with spark arrestors.
- H. All electric motors and electric controls used in the excavation area will be explosion proof or non-sparking TEFC and meet the requirements for Class 1, Division 1, Group D (methane), and rated equipment in accordance with the National Electric Code (NEC). If the potential for a hazardous location can be eliminated with the use of forced ventilation, then explosion proof equipment is not required.
- I. No welding is permitted in, on, or immediately near the excavation area, unless continuously monitored for methane and other combustible gases. In-trench fusion welding of HDPE pipe should only be done as a last resort and only then with the proper precautions taken.
- J. Solvent cleaning, gluing or bonding of pipe should be done, to the extent possible, outside the trench.
- K. During piping assembly, all valves should be closed immediately after installation to prevent the migration of landfill gases through the pipeline.
- L. All exposed trench or excavation shall be covered with an impermeable membrane and plywood or steel plate prior to the end of the working day barriers and warning signs shall be placed around covered excavations.
- M. Whenever refuse is encountered during excavations, the work area will be monitored continuously for level of methane, carcinogenic contaminants, hydrogen sulfide and oxygen deficiency.
- N. All newly installed piping tied into a gas source shall be capped as soon as possible following installation and at the end of each working day.

END OF SECTION

SECTION 3 - MOBILIZATION

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 site; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site.

3.2 MATERIALS

All materials furnished for the execution of the work and purchases made by the County shall remain the property of the County. Any existing property or installations shall be left in a condition that is at least equivalent to the condition prior to construction. Portable toilets provided by the County are available onsite for the use of the Contractor.

3.3 EXECUTION

- 1) 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.
- 2) The Contractor shall obtain all necessary permits and permission to utilize public roads for mobilization, demobilization, and access to the site. Access to the site is available through existing public roads during the hours stated in Section 1.7 of these Special Provisions.

3.4 MEASUREMENT AND PAYMENT

3.4.1 Mobilization

The following schedule will be used to determine **measurement** of mobilization for **Bid Items No. 1.1 through 1.4** and disbursement of the bid price (less retention) for mobilization:

Percent of Contract Work Completed (\$ Expended/\$ total bid price)	Percent of Mobilization Considered to be Complete
More Than 5%	50%
More Than 10%	75%
More Than 15%	95%
More Than 20%	100%

3.4.1.1 Mobilization for Horizontal Well Construction

Mobilization for horizontal well construction and header/lateral installation or re-location as shown in **Bid item No 1.1** shall consist of all items stated in Section 3.1 of these Special Provisions as well as mobilizing specialized equipment to construct horizontal gas wells.

3.4.1.2 Mobilization for Vertical Well Construction

Mobilization for vertical well construction header/lateral installation or re-location as shown in **Bid item No 1.2** shall consist of all items stated in Section 3.1 of these Special Provisions as well as mobilizing specialized equipment to construct vertical gas wells.

3.4.1.3 Mobilization for Header and Lateral Pipe Installation

Mobilization for header and lateral pipe installation as shown in **Bid item No 1.3** shall consist of all items stated in Section 3.1 of these Special Provisions as well as mobilizing specialized equipment to install header and lateral pipes.

3.4.1.4 Mobilization for Relocating Header and Lateral Pipes

Mobilization for relocating header and lateral pipes as shown in **Bid item No 1.4** shall consist of all items stated in Section 3.1 of these Special Provisions as well as mobilizing specialized equipment to relocate header and lateral pipes

END OF SECTION

SECTION 4 - TRENCHING AND EARTHWORK

4.1 GENERAL

4.1.1 Summary

The work in this section shall include the Contractor furnishing all labor, supervision, tools, equipment, and materials necessary to perform all trenching for horizontal LFG collection wells and road crossings and backfill across bench roads for lateral and header piping. This work also includes the excavation of refuse and soil co-mingled with refuse and other unsuitable material, and hauling and disposal at the designated areas as directed by the County.

4.1.2 References

All trenches shall comply with the applicable parts of section 306 of the Standard Specifications for Public Works Construction unless otherwise stated in the Plans and Specifications.

4.1.3 Protection

A. Shoring and Bracing.

1. The Contractor shall provide materials for shoring and bracing necessary for safety of personnel, protection of work, and in compliance with the requirements of government agencies having jurisdiction.

B. De-watering:

1. De-watering equipment shall be provided by the Contractor to remove and dispose of all surface water and groundwater entering excavation or boreholes.
2. The Contractor shall excavate and backfill in a manner and sequence that will provide proper drainage at all times. The Contractor shall remove all water, including runoff and run-on collected from rainwater encountered during excavation, to a location approved by the County, by pumps, drains, and other approved methods. The Contractor shall prevent water from ponding in site excavations and site construction area.
3. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. and to prevent such accidents that may endanger the environment. The Contractor will be responsible for the cost of remediation the results of any such discharges or accidents.

- ##### **C. The Contractor shall provide necessary temporary piping materials, equipment and vehicle for spraying and moisture-conditioning of backfill materials. The Contractor shall provide and pay for the temporary water supply used in construction.**

4.1.4 Final Grading

- A. After other outside work has been finished and backfilling completed and settled, all areas which are to be graded shall be brought to grade at the indicated elevations, slopes, and contours.
- B. All surfaces shall be graded to secure effective drainage. Unless otherwise indicated, a slope of at least three percent shall be provided.
- C. Final grading and surfacing shall be smooth, even, and free from clods and stones larger than one inch in greatest dimension, weeds, brush, and other debris.

4.1.5 Settlement

- A. The Contractor shall be responsible for all settlement of backfill, fills, and embankments which may occur within the correction period stipulated in the General Conditions.
- B. The Contractor shall make, or cause to be made, all repairs or replacements made necessary by settlement within 30 days after notice from the County.

4.1.6 Construction

- A. The Contractor shall excavate and backfill in a manner and sequence that will provide proper drainage at all times. The Contractor shall remove all water, including runoff and run-on collected from rain water encountered during excavation, to a location approved by the County, by pumps, drains, and other approved methods. The Contractor shall prevent water from ponding in site excavation and site construction area. The Contractor shall control drainage in the vicinity of work to prevent water from accumulating or running into adjacent property.
- B. The Contractor shall remove all groundwater encountered during excavation, to a location approved by the County, by pumps, drains, and other approved methods.
- C. All excavation shall be performed within the limits of the work to the lines, grades, and elevations indicated and specified herein, the Contractor shall not excavate or remove materials beyond indicated sub-grade elevations or dimensions without the approval of the County. The Contractor shall backfill and compact to 90% relative compaction for any unauthorized excavation.
- D. The Contractor shall take all necessary precautions to preclude the accidental discharge of fuel, oil, etc. and to prevent such accidents that may endanger the environment. The Contractor will be responsible for the cost of remediation the results of any such discharges or accidents. Spilled diesel fuel or oil will require excavation and soil disposal at a Class 1 landfill at the Contractor's expense.
- E. The soil cover shall be compacted to a minimum of 90 percent of the maximum density 3% above optimum moisture content of soil in roadways, and other areas of the site, as determined by ASTM D1557
- F. The Contractor shall comply with all applicable regulations and shall protect open excavations, trenches, holes, with fences, covers, or railing as required to maintain safe pedestrian and /or vehicular traffic and against accidental or unauthorized entry until backfilled.
- G. The Contractor shall notify the County 24 hours in advance of backfilling operations to permit required testing. Density tests shall be determined by ASTM D1557 Compaction shall be achieved by using sheeps-foot, walk behind whackers, or vibrating rollers. Heavy impact type equipment such as stompers shall not be permitted for compaction use.

4.1.7 Costs

- A. The County shall employ and pay for compaction and moisture testing in completed trenches as the County feels necessary.
- B. Re-testing required because of failure of compaction density or moisture content shall be reimbursed by the Contractor to the County.

4.1.8 Excavated Soils

Excavated soils from the trenching operation may be used as trench backfill provided the following:

- A. The excavated backfill soil is to be clean, odorless, vegetation free, free of refuse and any other deleterious material and to the satisfaction of the County. If the County decides that the excavated material is unsatisfactory, the County will provide backfill material, at no charge to the Contractor, within a designated area within 100 linear feet of the excavation.

4.2 DISPOSAL OF REFUSE AND CONSTRUCTION DEBRIS

4.2.1 Summary

- A. During the course of this Contract, excavated refuse, contaminated soil and debris, hereafter referred to as "normal waste material", will require legal disposal and shall not be used as backfill material.
- B. The County shall determine whether any excavated material should be classified as waste material or hazardous material.
- C. Hazardous Material
 - 1. In the event the County or the Contractor suspects any excavation material may be hazardous (as defined by State and Federal Regulations) the Contractor shall stockpile the suspect material in a separate location from the rest of the excavated material. The suspected hazardous material shall not be used as backfill.
 - 2. The County will make the appropriate analyses to determine if the suspected hazardous material is hazardous by State and Federal Regulations.
 - 3. If hazardous materials are excavated from the landfill, they shall be disposed of by the Contractor in the hazardous waste disposal site designated by the County.
- D. Normal waste material and soil cuttings not used as backfill shall be disposed of on site at locations designated by the County.
- E. Disposal operations shall not create unsightly or unsanitary nuisances.

4.2.2 Disposal Costs

The cost for handling, transporting, and disposal of normal waste materials on site shall be included in the Contractor's unit bid price for the construction of the horizontal and vertical landfill gas extraction wells and trenching for road crossings. However, there shall be no cost to the Contractor by the County to place excavated material on the working face of the landfill.

4.2.3 Disposal

- A. The Contractor shall be responsible for the complete removal and disposal of all waste material and soil cuttings each day.
- B. The Contractor shall load waste material and soil cuttings directly into a truck or trailer upon removal from the trench or drilling operation.
- C. The Contractor shall ensure that no waste material or soil cuttings shall extend above the sides or rear of the truck or trailer during transport. The Contractor shall provide covers for the truck or trailer during off-site transport and prior to leaving the work area.

- D. The Contractor shall keep the landfill surface and all haul roads free of excavated solid materials. Any excavated material dropped during transport shall be immediately picked up and disposed of properly at the designated disposal site.
- E. All materials that are listed as hazardous by a Federal or State agency shall be considered "Hazardous Materials" and handled accordingly.
- F. All excavated material suspected of being hazardous shall be stockpiled, covered by the Contractor with plastic sheeting, and protected until the final determination of hazardous classification is made by the County.
- G. All normal waste materials must be disposed of on a daily basis on site at locations designated by the County and thirty (30) minutes period to closing of disposal operation. Normal waste materials disposed of less than 30 minutes period to closing will be subject to back charges by the County for equipment and overtime costs.

4.3 HORIZONTAL COLLECTION WELL TRENCHING

4.3.1 Scope

Trenching for the horizontal collection wells consists of a trench with dimensions of two feet in width by four feet in depth as shown in the project drawings. The top foot of trench typically will be intermediate cover soil and the remaining three feet consists of refuse. This trenching is located on the current flat working deck of the landfill. All refuse excavated must be hauled to the current dumping area as designated by the County and be in full compliance with section 4.2 of these Provisions.

4.3.2 Backfill

Back fill soil will be provided by the County in the general area that the soil is needed. The Contractor must give the County enough notice and the quantity needed to allow for the landfill operations to schedule the scraper loads of dirt to be delivered to the area for the Contractor's use for backfilling the trench. The compaction of the backfill may be packed in using the wheels of the loader or equivalent equipment for the majority of this backfill. In any areas that the landfill operations is using as an access road for incoming traffic, a 90% relative compaction is required based on the laboratory maximum dry density, determined by ASTM D1557.

4.4 ROAD CROSSINGS

4.4.1 Scope

Road crossings must be trenched across the road and maintain a slope of 10% to make sure of proper drainage of the header or lateral piping. The road crossings trench will vary with depth from a minimum of two feet in depth to a maximum of six feet in depth. The width of the trench for road crossings must be a minimum of eighteen (18) inches for pipe less than eight (8) inches in diameter and a minimum of twenty-four (24) inches for pipe greater than eight (8) inches in diameter. The Contractor should plan on encountering refuse when trenching any road crossing and perform all required transportation and disposal in compliance with section 4.2 of these specifications.

4.4.2 Backfill

The Backfill around the pipe shall be clean and free of pebbles, rocks, refuse and debris. Backfill shall be placed in lifts or layers not to exceed one foot in loose thickness before being compacted in compliance with section 4.1.6 of these specifications. All road crossings must be compacted to

minimum of 90% relative compaction based on the laboratory maximum dry density, determined by ASTM D1557.

4.4.3 Pipe Bedding

- A. The trench bottom shall be continuous, relatively smooth and free of rocks and /or refuse material.
- B. Compaction shall be at least 90 percent of maximum density.
- C. If the trench bottom is within refuse and is uneven, the contractor will add 4" to 6" of clean cover soil to the bottom of the trench before placing the pipe. In these instances the lateral will be allowed a minimum depth reduction of 4" to 6".

4.5 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 2** "Trenching and Earthwork" shall be based on actual linear feet of completed trench. All 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.

This work includes excavation of trenches as described in SECTION 4 for trenching in native material, refuse and or cover soil for all 2", 3", 6", 8", 10", 12" and 16" diameter HDPE pipes including soil backfill and compaction. This work also includes the loading, transfer and dumping of all excavated refuse on the working face at the landfill in the area designated by the County. All trenching shall be bid at the same unit price regardless of trench width, depth, or soil/refuse conditions. **Trenching and Earthwork shall be paid for on a per linear foot of completed trench basis.**

END OF SECTION

SECTION 5 - INSTALL HORIZONTAL WELL

5.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to construct horizontal LFG collection. The horizontal collectors must be constructed in strict accordance with these provisions and the project drawings.

5.2 MATERIALS

5.2.1 HDPE Pipe

The HDPE perforated pipe used in the construction of the horizontal wells must be SDR 11 with 1/2" diameter holes, 6" spacing with four holes every 90 degree interval. All perforations must completely penetrate the thickness of the pipe. All perforated pipe will be supplied by the County and will be located in a strategic locating near the installation area.

5.2.2 Geotextile

All geotextile will be supplied by the County and will be located in a strategic location near the installation area. The geotextile used in the construction of the horizontal wells will have all of the following properties:

- A. The geotextile shall be of woven needle punched, polyester fabric, Treviria Spunbound type, type II35 or approved equal.
- B. The geotextile fabrics shall be uniform in thickness and surface texture.
- C. The geotextile shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soils.
- D. The geotextile must be a minimum of 125 mils thick and conform to the minimum physical properties listed below:

Property	Value	Test Method
Fabric weight	10 oz/cy	ASTM D-3776
Grab tensile strength	305 lb.	ASTM D-4632
Grab elongation	60 lb.	ASTM D-4632
Mullen burst strength	510 PSI	ASTM D-3786
Trapezoid strength	100 lb.	ASTM D-4553

5.2.3 Aggregate

The County is supplying the aggregate to be used in the construction of horizontal wells and the Contractor is to install the aggregate supplied by the County. The County will supply 2" to 4" crushed washed rock aggregate for horizontal collection well back-fill. The Contractor will have to retrieve the aggregate from the location that it is stored and install in the trench as needed.

5.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.

- 2) All perforated 6" HDPE SDR 11 piping shall be joined by slipping a 4' section of 8" perforated pipe over the 6" perforated pipe with 2' of 8" perforated pipe on each section of 6" perforated pipe. As shown in the project drawings.
- 3) Pipe must be at 10% slope prior to transitioning to the solid lateral piping.
- 4) Geotextile must be cut to width by the Contractor and shall be laid down on top of the aggregate across the full width of the trench before any fill dirt is placed in the trench.
- 5) All new horizontal solid pipe well laterals shall be capped with a schedule 40 PVC cap.
- 6) Pipe cutting in or near the trench shall be done only with mechanical cutters.

5.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 3 "Install Horizontal Well"** shall be based on actual linear feet of pipe installed based on the 6" and 8" HDPE perforated pipe installed. All work is to be paid for at a contract price per unit of measurement and will be measured by the County in accordance with United States Standard measures. The installation shall be bid at one unit price. **Horizontal well installation shall be paid for on a per linear foot of installed pipe basis.**

END OF SECTION

SECTION 6 - INSTALL AGGREGATE PITS

6.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to construct one aggregate pit in line with the horizontal collection wells. The dimension of the pits are 10' X 10' X 4' with the horizontal well running through the center. The aggregate and geotextile to be used is to be supplied by the County. The aggregate pits must be constructed in strict accordance with these provisions and the Project Drawings.

6.2 MATERIALS

6.2.1 Geotextile

The geotextile supplied by the County used in the construction of the horizontal wells will have all of the following properties:

- A. The geotextile shall be of woven needle punched, polyester fabric, Treviria Spunbound type, type II35 or approved equal.
- B. The geotextile fabrics shall be uniform in thickness and surface texture.
- C. The geotextile shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soils.
- D. The geotextile must be a minimum of 125 mils thick and conform to the minimum physical properties listed below:

Property	Value	Test Method
Fabric weight	10 oz/cy	ASTM D-3776
Grab tensile strength	305 lb.	ASTM D-4632
Grab elongation	60 lb.	ASTM D-4632
Mullen burst strength	510 PSI	ASTM D-3786
Trapezoid strength	100 lb.	ASTM D-4553

6.2.2 Aggregate

The County is supplying the aggregate to be used in the construction aggregate pits and the Contractor is to install the aggregate supplied by the County. The Contractor will have to retrieve the aggregate from the location that it is stored and install in the pits as needed.

6.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.
- 2) The pit shall be constructed so that the perforated piping runs directly through the center of the ten feet (10') by ten feet (10') square pit.
- 3) The aggregate shall be transported from the stock pile and placed in the pit in strict accordance with the Project Drawings.
- 4) Geotextile shall be cut to fit by the Contractor and must cover the entire area of the aggregate before backfill soil is placed.

6.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 4** "Install Aggregate Pit" is based on a lump sum basis per pit constructed. All work is to be paid for at a contract price per pit constructed. **Aggregate pit installation shall be paid for in per each pit constructed basis.**

END OF SECTION

SECTION 7 - DRILL & INSTALL VERTICAL GAS WELLS

7.1 SUMMARY

- 1) Construction of the landfill gas extraction wells shall consist of construction and removal of temporary drill pads if required, drilling vertical boreholes and installing HDPE SDR 17 perforated pipe, fittings, HDPE pipe, bentonite and aggregate, all in accordance with details as indicated on the Project Drawings and as specified herein. The drill rig shall have at least 70,000 foot-pounds of torque and a push down thrust force of 25,000 pounds. The County recommends a track mounted IMT AF 10 or equivalent type drill rig.
- 2) Landfill gas extraction well lengths within each borehole may be changed by the County following drilling. The wells shall then be constructed according to the drilling table shown on the Project Drawings.
- 3) There shall be one well in each borehole. The drilling table on the Project Drawings shows the corresponding borehole depths, and approximate well depths.
- 4) All perforated HDPE pipe and fittings used in the construction of the wells shall be 4" or 6" SDR 17 unless shown otherwise on the Project Drawings. The HDPE shall be perforated as indicated on the well details. All HDPE solid pipe and fittings in the wells shall be SDR 17 unless shown otherwise on the Project Drawings.
- 5) The cost of drill pads, excavation, backfill, storage of excavated material related to the installation of gas extraction wells shall be included in the extraction wells construction costs.
- 6) The minimum diameter of the hole drilled for the borehole shall be as indicated on the Project Drawings.
- 7) The Contractor shall comply with all safety procedures for LFG well construction included in these Specifications and Contractor's Health and Safety Plan.
- 8) The unit price for installation of vertical landfill extraction well shall be per vertical foot of well installed. The measurement of the well for payment shall be from the bottom of the borehole to existing grade.
- 9) The County must approve the depth measurement procedures used by the Contractor. The County may verify measurements as the County deems appropriate.
- 10) Drilling shall be performed according to the applicable conditions of the SCAQMD Permit to Construct.
- 11) During drilling, an SCAQMD approved emission control box shall be placed over the well hole to collect landfill gas. The collected gas shall be directed to a 55 gallon carbon absorption unit using an explosion-proof exhaust fan/blower (1/3 hp min.) with a minimum capacity of delivering 100 cfm at 1" static pressure. The 55 gallon carbon absorption unit shall be capable of removing vapor phase hydrogen sulfide (H₂S) by impregnation with potassium hydroxide (KOH). A permit for the emission control box, carbon absorption unit, and related equipment has been obtained by the County from the SCAQMD and may be reviewed by the Contractor at the County's main office during regular business hours. A copy of the permit may be provided to the Contractor upon request for no additional cost.
- 12) A spare carbon absorption unit shall be available on site for replacement in the event that excessive odor being released to the atmosphere during drilling.
- 13) The Contractor shall cease drilling if native soil or groundwater is encountered and/or so as directed by the County. The Contractor shall not be compensated for drilling deeper than the indicated depth on the plans or than that specified by the County.

7.2 SCOPE OF WORK

- 1) The Contractor shall drill and install vertical landfill gas extraction wells as shown on the Project Drawings.
- 2) The County will stake the actual extraction well locations.
- 3) The general locations of the extraction wells shall be as shown on the Project Drawings unless otherwise directed by the County.

7.3 MATERIALS

7.3.1 Pipe and Fittings

- A. HDPE pipe and fittings in the wells shall be SDR 17 unless otherwise indicated on the Project Drawings.
- B. HDPE pipe and fittings in the wells shall be SDR 17 as shown on the Project Drawings.
- C. The perforation dimension and the length of the perforated pipes in the vertical extraction wells are shown on the Project Drawings. Each extraction well shall be equipped with an identification tag approved by the County.

7.3.2 Aggregate (vertical wells only)

- A. The backfill around the perforated pipe shall consist of clean, washed 1"- 2" crushed aggregate with the dimensions indicated in these Specifications and on the Project Drawings. The County shall provide gravel to the Contractor. The Contractor will have to retrieve the aggregate from the location that it is stored and install in the vertical wells as needed.
- B. Aggregate Type - Crushed **Washed** Rock: Natural stone; washed, free of dust, fines, clay, shale, and organic matter; graded in accordance with the following limits: Marble, calcium carbonate or other similar chemically reactive stone shall not be used.
 1. Minimum Size: 1 inch
 2. Maximum Size: 2 inch

7.3.3 Bentonite

Bentonite chips shall be used for probe seals. Pelletized bentonite may also be used, subject to approval by the County. The bentonite chips shall be hydrated in the bore hole. Bags of bentonite will be provided by the County to the Contractor.

7.4 EXECUTION

- 1) The bore for the extraction well shall be straight and the gas extraction wells shall be installed as shown on the Project Drawings. The Contractor shall take all necessary precautions to maintain the well pipes vertical during the backfill operation of bore. If the pipe installed is out of plumb, the Contractor at its own expense will correct the alignment.
- 2) The upper 10 feet of the backfill material around the solid well casings shall be compacted greater than 90 percent of maximum density. Soil shall be placed in one (1) foot loose lifts and compacted.
- 3) All extraction well pipes shall be suspended from the surface during backfilling. Pipe shall not be allowed to rest on the bottom of the borehole.

- 4) If during the drilling of extraction well borehole an obstruction is encountered such that the gas well cannot be completed as called for in the Project Drawings, the County shall be consulted whether the borehole has advanced to a sufficient depth. If, in the opinion of the County, the borehole has reached a sufficient depth, the Contractor will be required to complete the gas well, and he will be compensated based on the finished depth actually reached, at the unit price included in the bid. If, in the opinion of the County, the borehole has not reached a sufficient depth to function as an effective gas well, the Contractor will abandon this borehole by backfilling it with soil. The upper 5 feet backfill of soil in the borehole shall be compacted. A bentonite seal one foot thick will be placed in the hole four feet below the surface. The Contractor will not be compensated for abandoned holes.
- 5) The top of the gas wells shall be capped immediately following installation.
- 6) Bentonite chips shall be fully hydrated inside of the borehole with approximately 30 gallons of clean water.
- 7) 6" of pea gravel shall be placed on top of the larger crushed gravel before the bentonite is placed in the hole.
- 8) Bentonite seals shall be a minimum of 2 feet thick.
- 9) Landfill bottom and/or groundwater encountered.
 1. If during the drilling of a gas well borehole landfill bottom and/or groundwater is encountered, the Contractor shall stop drilling and immediately alert the County. The Contractor shall backfill and seal the borehole with bentonite clay two (2) feet above the bottom of the landfill or five (5) feet above the groundwater table. The Payment shall be based on the maximum depth reached prior to backfill with bentonite, provided the depth was less than the depth shown on the Project Drawings or as requested by the County.
 2. If the groundwater encountered is determined by the County to be the upper aquifer, the Contractor shall seal the borehole with bentonite to an elevation five (5) feet above the water table and construct the gas extraction well above the seal.
- 10) The Contractor shall re-drill any borehole that caved in due to loose refuse or because it was not completed until the next working day. The Contractor shall not be compensated for caved boring.
- 11) In the event that a well is not completed by the end of the day and is to be left open, the Contractor shall seal the borehole by placing an impermeable membrane and heavy plywood or steel plate over the opening and lowering the auger over the top of the cover. The Contractor shall post warning signs and shall cordon off the area with safety ribbon and barricades. At all times, the Contractor shall be responsible in enforcing the Health and Safety requirement and secure the construction area.

7.5 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 5** "Drill and Install Vertical Gas Wells" shall be based on based on actual vertical depth in linear feet of well. The installation shall be bid at one unit price. No payment will be made for partially completed wells in the event of refusal or wells drilled deeper than shown in the project drawings unless directed by the County. **Drilling and installing vertical wells shall be paid for on a completed vertical foot of depth of vertical well (linear foot of borehole depth) basis.**

END OF SECTION

SECTION 8 - INSTALL 2" HDPE PIPE

8.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to install 2" condensate drain pipe. The condensate drain pipe and connections must be constructed in strict accordance with these provisions and the project drawings.

8.2 MATERIALS

8.2.1 HDPE Pipe and Fittings

- A. The HDPE pipe supplied in this section shall be 2" diameter SDR 11.
- B. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- C. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- D. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.

8.2.2 Extra Materials

- A. The Contractor shall neatly store for the County, upon verbal request, any extra materials left from the work and paid for in advance by the County. The storage location shall be designated by the County.

8.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.
- 2) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding branch saddles using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent or with the use of tees.
- 3) Fusion welding of HDPE pipe shall be performed by a qualified person. The pipe supplier shall verify the qualifications of the pipe installer, and the Contractor shall submit a copy of this verification to the County. No pipe shall be installed prior to submittal of the verification.
- 4) Flange alignment shall be perpendicular to pipe center line and shall not exceed plus or minus 1/32 of an inch in tolerance measured at the flange O.D.
- 5) Pipe cutting shall be done only with mechanical cutters.
- 6) All pipes 2 inches and larger shall be flanged at the weld ends and welded with full penetration butt welds.
- 7) When mating to piece of equipment with a flat-face flange, the corresponding pipe flange shall also be flat faced. Otherwise, all flanges shall be raised face.

- 8) There will be approximately two fittings per one-hundred feet of piping. Fittings are defined as but not limited to: elbows, reducers, flange adapters, tees, and saddles. The cost of this bid item shall include the installation of these fittings.

8.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 6** "Install 2" HDPE Pipe" shall be based on actual linear feet of pipe installed. All work is to be paid for at a contract price per unit of measurement and will be measured by the County in accordance with United States Standard measures. The installation shall be bid at one unit price. **Install 2" diameter HDPE pipe shall be paid for on a per linear foot of installed pipe basis.**

END OF SECTION

SECTION 9 - INSTALL 3" and 6" HDPE LATERAL PIPE

9.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to install lateral piping new vertical LFG collection lateral piping. The 3" HDPE lateral pipes must be constructed in strict accordance with these specifications and the Project Drawings.

9.2 MATERIALS

9.2.1 HDPE Pipe and Fittings

- A. The HDPE pipe supplied in this section shall be 3" and 6" diameter SDR 11 or 17.
- B. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- C. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- D. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.

9.2.2 Pipe Clamps and Anchors

The Contractor will install one 3" and 6" diameter pipe clamp support for each new lateral pipe near the well head as shown in the Project Drawings. The Contractor shall install pipe or rebar to anchor the pipe clamp support to the ground. A pipe clamp is to be installed only at the end of each lateral to anchor near the existing header and the well head. The project drawings show details of the installation.

9.2.3 Extra Materials

- A. The Contractor shall be responsible for all extra materials resulting from quantity estimating. The cost of such materials shall be borne by the Contractor.
- B. The Contractor shall neatly store for the County, upon verbal request, any extra materials left from the work and paid for in advance by the County. The storage location shall be designated by the County

9.2.4 Miscellaneous Parts

All 1 1/4" steel pipe anchors shall be schedule 40 black or galvanized pipe. All rebar shall be billet steel conforming to ASTM A 615 and shall be either Grade 40 or 60.

9.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.

- 2) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding branch saddles using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent or with the use of tees.
- 3) Fusion welding of HDPE pipe shall be performed by a qualified person. The pipe supplier shall verify the qualifications of the pipe installer, and the Contractor shall submit a copy of this verification to the County. No pipe shall be installed prior to submittal of the verification.
- 4) Flange alignment shall be perpendicular to pipe center line and shall not exceed plus or minus 1/32 of an inch in tolerance measured at the flange O.D.
- 5) Pipe cutting shall be done only with mechanical cutters.
- 6) All pipes two (2) inches and larger shall be flanged at the weld ends and welded with full penetration butt welds.
- 7) When mating to piece of equipment with a flat-face flange, the corresponding pipe flange shall also be flat faced. Otherwise, all flanges shall be raised face.
- 8) Infra-just pipe supports and pipe anchors shall be installed at the end of each lateral near the header pipe. Pipe anchors shall be driven into the ground a minimum of 30". Sharp edges on pipe ends shall be filed down.
- 9) There will be approximately two fittings per one-hundred feet of piping. Fittings are defined as, but not limited to: elbows, reducers, flange adapters, tees, and saddles. The cost of this bid item shall include the installation of these fittings.

9.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Items No. 7 "Install 3" HDPE Pipe** and **No. 8 "Install 6" HDPE Pipe** shall be based on actual linear feet of pipe installed. All work is to be paid for at a contract price per unit of measurement and will be measured by the County in accordance with United States Standard measures. The installation shall be bid at one unit price. **Install 3" and 6" diameter HDPE lateral pipe shall be paid for on a per linear foot of installed pipe basis.**

END OF SECTION

SECTION 10 - INSTALL 8", 10", 12" and 16" HEADER PIPE

10.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to install 8", 10", 12" and 16" diameter HDPE SDR 17 mostly above grade header pipe.

10.2 MATERIALS

10.2.1 HDPE Pipe and Fittings

- A. The HDPE pipe supplied in this section shall be 8", 10", 12", and 16" diameter SDR 17.
- B. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- C. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- D. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.
- E. If the butterfly valve's disk interferes with the inside diameter of the pipe, the Contractor has the option to either remove excess material from the ID of the pipe flange adapter by machining, add spacers as recommended by supplier, or use a flange adapter with a thickness that will allow the valve to clear the pipe

10.2.2 Pipe Clamps and Anchors

The Contractor will install 8", 10", 12" and 16" pipe clamps for anchoring the new 8", 10", 12" and 16" diameter header pipe in place. The Contractor shall install pipe or rebar to anchor the pipe clamps to the ground. The pipe clamps are to be installed every 70' along the new section of header to secure the pipe in place. The project drawings show details of the installation.

10.2.3 Rebar

The Contractor shall install minimum of #4 (1/2" diameter) rebar on the downhill side of the pipe every 10' along the relocated header pipe. The rebar shall be driven into the ground a minimum of 18" and shall extend several inches above the header pipe. The Contractor is to install OSHA approved plastic safety caps on each rebar installed.

10.2.4 Valves

- A. Butterfly valves used in the landfill gas collection system, supplied by the County, shall be 150 lb. Full lug cast iron body with stainless steel disk, 316 stainless steel stem, and Viton liner or approved equal. Valve bodies may be painted.
- B. All bolting for valves shall be 316 SS.
- C. The 8", 10", 12" and 16" butterfly valve shall have a gear operator with a valve position indicator.
- D. All butterfly valves shall be installed so that the valve stem is located on the vertical axis and the operator is located at the top of the valve.

- E. Valve installation shall be per the manufacturer's specifications.

10.2.5 Extra Materials

- A. The Contractor shall neatly store for the County, upon verbal request, any extra materials left from the work and paid for in advance by the County. The storage location shall be designated by the County.

10.2.6 Miscellaneous Part

- A. All bolts, washers and nuts shall be 316 stainless steel.
- B. All flange gaskets shall be made of Neoprene.
- C. Rebar stakes shall be billet steel conforming to ASTM A 615 and shall be either Grade 40 or 60. The rebar shall be ½' diameter (#4) and three feet long.
- D. Plastic rebar safety caps shall be per OSHA approved industrial standards.
- E. All 1 ¼" steel pipe anchors shall be schedule 40 black or galvanized pipe. All rebar shall be billet steel conforming to ASTM A 615 and shall be either Grade 40 or 60.

10.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.
- 2) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding branch saddles using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent or with the use of tees.
- 3) Fusion welding of HDPE pipe shall be performed by a qualified person. The pipe supplier shall verify the qualifications of the pipe installer, and the Contractor shall submit a copy of this verification to the County. No pipe shall be installed prior to submittal of the verification.
- 4) Flange alignment shall be perpendicular to pipe center line and shall not exceed plus or minus 1/32 of an inch in tolerance measured at the flange O.D.
- 5) All bolts and nuts must be easily accessible for installation and tightening. All nuts, washers and bolts shall be 316 stainless steel.
- 6) Pipe cutting shall be done only with mechanical cutters.
- 7) All pipes 2 inches and larger shall be flanged at the weld ends and welded with full penetration butt welds.
- 8) When mating to piece of equipment with a flat-face flange, the corresponding pipe flange shall also be flat faced. Otherwise, all flanges shall be raised face.
- 9) The 8", 10", 12", and 16" header pipe shall be held horizontally in place by installing #4 rebar stakes as shown in the project drawings. After placement, the rebar shall be capped with OSHA approved plastic safety caps.
- 10) Infra-just pipe supports and pipe anchors shall be installed on the average of every 70 linear feet or as instructed by the engineer. Pipe anchors shall be driven into the ground a minimum of 30". Sharp edges on pipe ends shall be filed down.

- 11) There will be approximately two fittings per one-hundred feet of piping. Fittings are defined as but not limited to: elbows, reducers, flange adapters, tees, valves and saddles. The cost of this bid item shall include the installation of these fittings

10.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Items No. 9 through 12** "Install 8" HDPE Header Pipe", "Install 10" HDPE Header Pipe", "Install 12" HDPE Header Pipe" and "Install 16" HDPE Header Pipe" shall be based on actual linear feet of pipe installed. All work is to be paid for at a contract price per unit of measurement and will be measured by the County in accordance with United States Standard measures. The installation shall be bid at one unit price. **Install 8", 10", 12" and 16" diameter HDPE header pipe shall be paid for on a per linear foot of installed pipe basis.**

END OF SECTION

SECTION 11 RELOCATE 2", 3", 6", 8" 10" and 12" HDPE PIPE

11.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment necessary to relocate existing 2", 3", 6", 8" 10" and 12" diameter HDPE SDR 11 and 17 pipe. The contractor shall cut out and remove all existing reducers, and elbows from the pipe. The pipe shall be re-secured in the new location with infra-just supports and rebar that will be supplied by the County. The Contractor shall make an effort to salvage and re-use rebar and infra-just supports. Existing butterfly valves will need to be relocated and re-installed by the Contractor.

11.2 MATERIALS

11.2.1 HDPE Pipe and fittings

- A. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- B. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- C. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.
- D. If the butterfly valve's disk interferes with the inside diameter of the pipe, the Contractor shall remove excess material from the ID of the pipe flange adapter by machining, until the valve is clear from hitting the pipe.

11.2.2 Pipe clamps and anchors

The pipe clamps for the relocation of the 2", 3", 6", 8" 10" and 12" diameter header pipe may be salvaged from the existing location of the pipe and installed with new pipe or rebar supplied by the Contractor. The pipe clamps are to be installed every 70' along the relocated header to secure the pipe in place. The project drawings show details of the installation.

11.2.3 Rebar

The Contractor shall supply and install minimum of #4 (1/2" diameter) rebar on the downhill side of the pipe every 10' along the relocated header pipe. The rebar shall be driven into the ground a minimum of 18" and shall extend several inches above the header pipe. The Contractor is to install plastic safety caps on each rebar installed.

11.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.
- 2) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding branch saddles using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent or with the use of tees.

- 3) Fusion welding of HDPE pipe shall be performed by a qualified person. The pipe supplier shall verify the qualifications of the pipe installer, and the Contractor shall submit a copy of this verification to the County. No pipe shall be installed prior to submittal of the verification.
- 4) Flange alignment shall be perpendicular to pipe center line and shall not exceed plus or minus 1/32 of an inch in tolerance measured at the flange O.D.
- 5) All bolts and nuts must be easily accessible for installation and tightening. All nuts, washers and bolts shall be 316 stainless steel.
- 6) Pipe cutting shall be done only with mechanical cutters.
- 7) All pipes 2 inches and larger shall be flanged at the weld ends and welded with full penetration butt welds.
- 8) When mating to piece of equipment with a flat-face flange, the corresponding pipe flange shall also be flat faced. Otherwise, all flanges shall be raised face.
- 9) The 6", 8", 10" and 12" header pipe shall be held horizontally in place by installing #4 rebar stakes as shown in the Project Drawings. After placement, the rebar shall be capped with plastic safety caps.
- 10) Infra-just pipe supports and pipe anchors shall be installed on the average of every 70 linear feet or as instructed by the engineer. Pipe anchors shall be driven into the ground a minimum of 30". Sharp edges on pipe ends shall be filed down.
- 11) There will be approximately two fittings per one-hundred feet of piping. Fittings are defined as, but not limited to: elbows, reducers, flange adapters, tees, and saddles. The cost of this bid item shall include the installation of these fittings

11.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Items No. 13 through 18** "Relocate 2" HDPE Pipe", "Relocate 3" Lateral Pipe", "Relocate 6" Header Pipe", "Relocate 8" Header Pipe", "Relocate 10" Header Pipe", and "Relocate 12" Header Pipe" shall be based on actual linear feet of pipe relocated and installed. All work is to be paid for at a contract price per unit of measurement and will be measured by the County in accordance with United States Standard measures. The installation shall be bid at one unit price. **Relocation of 2", 3", 6", 8", 10", and 12" diameter HDPE header pipe shall be paid for on a per linear foot of relocated pipe basis.**

END OF SECTION

SECTION 12 - INSTALL OR RELOCATE WELL MONITORING ASSEMBLY

12.1 SUMMARY

The work in this section shall include the Contractor furnishing all labor, supervision, tools, and equipment and necessary to install new or relocate existing monitoring assemblies. The new monitoring assemblies will be provided by the County and installed by the Contractor. The Contractor shall install any saddles, additional elbows, or any other required fittings for this installation. The well monitoring assemblies must be installed in strict accordance with these provisions and the Project Drawings.

12.2 MATERIALS

12.2.1 HDPE Pipe and Fittings

- A. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- B. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- C. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.

12.3 EXECUTION

- 1) The work to be performed under the provision of these Specifications shall be conducted in a manner consistent with standard industry practices for such projects. No portion of this Contract shall relieve the Contractor from all applicable Federal, State, and local regulations pertaining to construction of this Project.
- 2) All HDPE piping shall be joined by butt fusion and in conformance with the manufacturer's recommendations. Laterals shall be joined to the header pipe by fusion welding branch saddles using a McElroy Sidewinder Chain Clamp Fusion Unit or equivalent or with the use of tees.
- 3) Fusion welding of HDPE pipe shall be performed by a qualified person. The pipe supplier shall verify the qualifications of the pipe installer, and the Contractor shall submit a copy of this verification to the County. No pipe shall be installed prior to submittal of the verification.
- 4) Flange alignment shall be perpendicular to pipe center line and shall not exceed plus or minus 1/32 of an inch in tolerance measured at the flange O.D.
- 5) Pipe cutting shall be done only with mechanical cutters.
- 6) All pipes 2 inches and larger shall be flanged at the weld ends and welded with full penetration butt welds.
- 7) When mating to piece of equipment with a flat-face flange, the corresponding pipe flange shall also be flat faced. Otherwise, all flanges shall be raised face.
- 8) Rubber 3" X 2" and 4" x 2" reducer couplings with stainless steel clamps are included with the monitoring assemblies and should be properly connected by the Contractor.

12.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 19** "Install or Relocate Monitoring Well Assembly" shall be based on per each monitoring assembly installed. The installation shall be bid one per each price. **Install or re-locating well monitoring assemblies shall be paid for on an each basis for each assembly installed.**

END OF SECTION

SECTION 13 -INSTALL 8,750-GALLON TANK & CONCRETE STRUCTURE

13.1 SUMMARY

The work in this section shall include the Contractor furnishing all concrete, rebar, labor, supervision, tools and equipment necessary to install a concrete containment structure. The County shall supply the 8,750-gallon HDPE tank, seismic kit, anchor bolts, pipe, fittings and ladder.

13.2 MATERIALS

13.2.1 Concrete

- A. Concrete shall consist of Portland Cement, aggregates, water and admixtures when approved for use. Unless otherwise indicated, concrete shall have a 28 day compressive strength of 3000 psi.
- B. Materials used in concrete shall conform to Section 201-1.2 of the Standard Specifications.
- C. Reinforcements shall conform to Section 201-2 of the Standard Specifications.
- D. Concrete curing compound shall be used and shall meet Federal Specification TT-C-800, Type I, Class 1 non yellowing with minimum 18 percent solids and a maximum unit moisture loss of 0.039 gm/cm². Approved manufacturer shall be Gifford-Hill "Sealco 800", ProSoCo "Kure and Seal", Protex "Acrychlor", Sonneborn "Kure-N-Seal" or approved equal or the Contractor shall use a 6 mil. polyethylene film for protection during curing.
- E. The minimum concrete compressive strength shall be 3,250 psi unless otherwise specified. The slump shall not exceed 4 inches at the time it is being placed in conformance with ASTM C150.

13.2.2 Tank

The 8,750-gallon HDPE tank shall be supplied by the County. The tank will be 10 feet 10 inches in diameter and 11 feet 11 inches tall.

13.2.3 Seismic Kit

The seismic kit shall be supplied by the County.

13.2.4 Ladder Kit

The ladder kit shall be supplied by the County

13.2.5 HDPE Pipe and Parts

- A. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- B. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.
- C. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe

13.3 EXECUTION

- A. The County will supply the elevation and location of all four corners and floor elevation of the concrete containment structure.
- B. The Contractor shall over-excavate the area under the concrete containment area two feet and re-compact to 90% of the maximum density as determined per ASTM D1557.
- C. Install forms to create a twenty (20) feet by twenty (20) feet inside floor distance, one foot thick, with #4 rebar in each direction at one-foot intervals. Walls are to be three feet four inches (3' 4") tall from the inside floor elevation and eight (8") inches thick and have an outside, wall to wall, distance of twenty-one feet four inches (21' 4"). The walls are to be reinforced vertically and horizontally at one-foot intervals with #4 rebar.
- D. The 8,750-gallon HDPE tank shall be set in the middle of the floor and tied to the floor using the seismic kit supplied by the County as shown in the drawings.
- E. A steel ladder shall be supplied by the County and installed by the Contractor as shown in the drawings.
- F. Two 2" diameter bulkhead fittings and one 3" diameter bulkhead fitting shall be installed on top of the tank as shown in the drawings.
- G. Two 2" diameter vertical HDPE pipes shall be installed from the ground to the top of the tank into the bulkhead fitting and supported as shown in the drawings.
- H. One 3" vertical HDPE pipe shall be installed from the ground level to the 3" bulkhead fitting on top of the tank and supported as shown in the drawings. One 3" vertical HDPE pipe shall be installed from the 3" bulkhead fitting inside the tank to one-foot from the bottom of the tank as shown in the drawings. Two flanges and a 3" valve shall be installed and supported as shown in the drawings.

13.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 20** "Install 8,750-Gallon Tank and Concrete Containment Structure" shall be based on per each 8,750-Gallon Tank and Concrete Containment Structure installed. The installation shall be bid per each unit price. **Install 8,750-gallon and concrete containment structure shall be paid for on an each basis for each assembly installed.**

END OF SECTION

SECTION 14 -INSTALL 12,500-GALLON TANK & CONCRETE STRUCTURE

14.1 SUMMARY

The work in this section shall include the Contractor furnishing all concrete, rebar, labor, supervision, tools and equipment necessary to install a concrete containment structure. The County shall supply the 12,500-gallon HDPE tank, seismic kit, anchor bolts, pipe, fittings and ladder.

14.2 MATERIALS

14.2.1 Concrete

- A. Concrete shall consist of Portland cement, aggregates, water and admixtures when approved for use. Unless otherwise indicated, concrete shall have a 28 day compressive strength of 3000 psi.
- B. Materials used in concrete shall conform to Section 201-1.2 of the Standard Specifications.
- C. Reinforcements shall conform to Section 201-2 of the Standard Specifications.
- D. Concrete curing compound shall be used and shall meet Federal Specification TT-C-800, Type I, Class 1 non yellowing with minimum 18 percent solids and a maximum unit moisture loss of 0.039 gm/cm². Approved manufacturer shall be Gifford-Hill "Sealco 800", ProSoCo "Kure and Seal", Protex "Acrychlor", Sonneborn "Kure-N-Seal" or approved equal or the Contractor shall use a 6 mil. polyethylene film for protection during curing.
- E. The minimum concrete compressive strength shall be 3,250 psi unless otherwise specified. The slump shall not exceed 4 inches at the time it is being placed in conformance with ASTM C150.

14.2.2 Tank

The 12,500-gallon HDPE tank shall be supplied by the County. The tank shall be 11 feet 10 inches in diameter and 16 feet eight inches tall.

14.2.3 Seismic Kit

The seismic kit shall be supplied by the County and installed by the Contractor.

14.2.4 Ladder Kit

The ladder kit shall be supplied by the County and installed by the Contractor.

14.2.5 PVC Bulkhead Fittings

Two 2" and one 3" diameter PVC bulkhead fittings shall be supplied by the County and installed as shown in the Project Drawings.

14.2.6 HDPE Pipe

- A. HDPE pipe shall conform to the requirements of Section 207-19 of the Standard Specifications unless otherwise indicated on the Plans and Specifications.
- B. All landfill gas piping and fittings shall be made from a polyethylene resin Type 3408 except where called out otherwise on the Project Drawings. HDPE pipe shall be protected against U.V. degradation from exposure to the sun.

- C. HDPE fittings shall be of material which is compatible with the pipe for the purpose of fusion welding and shall be free from cracks, holes foreign intrusions, voids, or other defects. The minimum "quick-burst" strength of the fittings shall not be less than that of the pipe.

14.3 EXECUTION

- A. The County will supply the elevation and location of all four corners and floor elevation of the concrete containment structure.
- B. The Contractor shall over-excavate the area under the concrete containment area two feet and re-compact to 90% by weight.
- C. Install forms to create a twenty- four (24) feet by twenty (24) feet inside floor distance , one foot thick, with #4 rebar in each direction at one-foot intervals. Walls are to be three feet four inches (3' 4") tall from the inside floor elevation and eight (8") inches thick and have an outside, wall to wall, distance of twenty-five feet four inches (25 4") . The walls are to be reinforced vertically and horizontally at one-foot intervals with #4 rebar..
- D. The 12,500-gallon HDPE tank shall be set in the middle of the floor and tied to the floor using the seismic kit supplied by the County as shown in the drawings.
- E. A steel ladder shall be supplied by the County and installed by the Contractor as shown in the drawings.
- F. Two 2" diameter bulkhead fittings and one 3" diameter bulkhead fitting shall be installed on top of the tank as shown in the drawings.
- G. Two 2" diameter vertical HDPE pipes shall be installed from the ground to the top of the tank into the bulkhead fitting and supported as shown in the drawings.
- H. One 3" vertical HDPE pipe shall be installed from the ground level to the 3" bulkhead fitting on top of the tank and supported as shown in the drawings. One 3" vertical HDPE pipe shall be installed from the 3" bulkhead fitting inside the tank to one-foot from the bottom of the tank as shown in the drawings. Two flanges and a 3" valve shall be installed and supported as shown in the drawings.

14.4 MEASUREMENT AND PAYMENT

Measurement of the final quantity of for **Bid Item No. 21** "Install 12,500-Gallon Tank and Concrete Containment Structure" shall be based for each 12,500-Gallon Tank and Concrete Containment Structure installed. The installation shall be bid at per each unit price. **Install 12,500-Gallon tank and concrete containment structure shall be paid for on an each basis for each assembly installed.**

END OF SECTION

SECTION 15 - DEMOBILIZATION

15.1 GENERAL

Demobilization shall include but not be limited to cleaning installations and the removal of equipment 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 the work areas clean and free of refuse generated as a result of the Contractor's operations. Any such refuse shall be disposed of in the designated disposal area or as directed by the County.

15.2 MATERIALS

The final condition of the construction site shall be subject to approval by the County.

15.3 EXECUTION

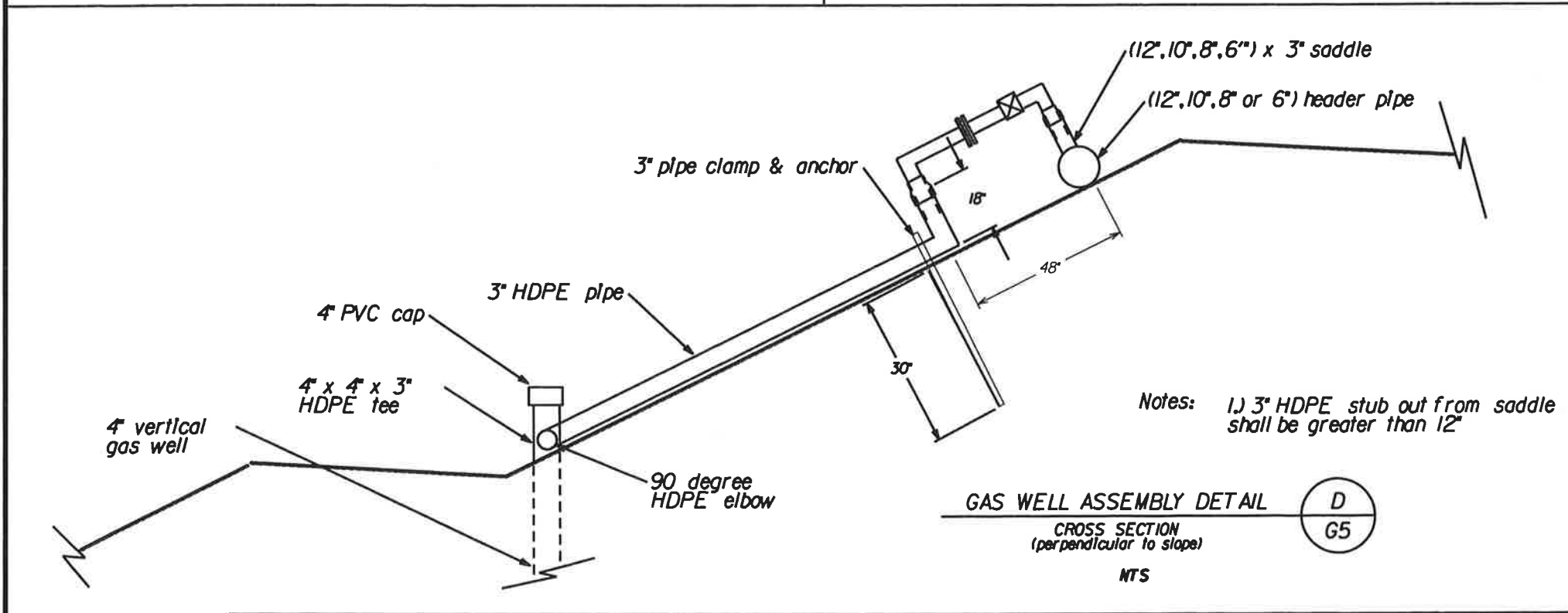
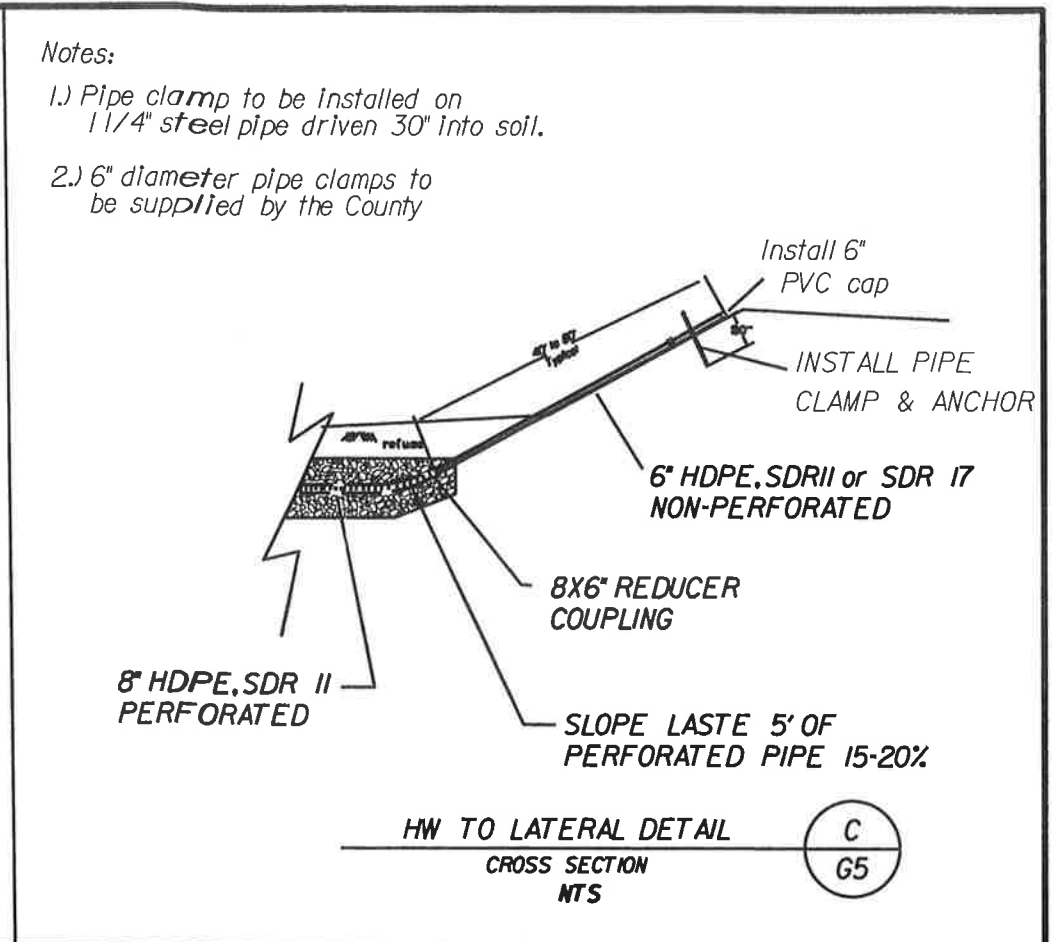
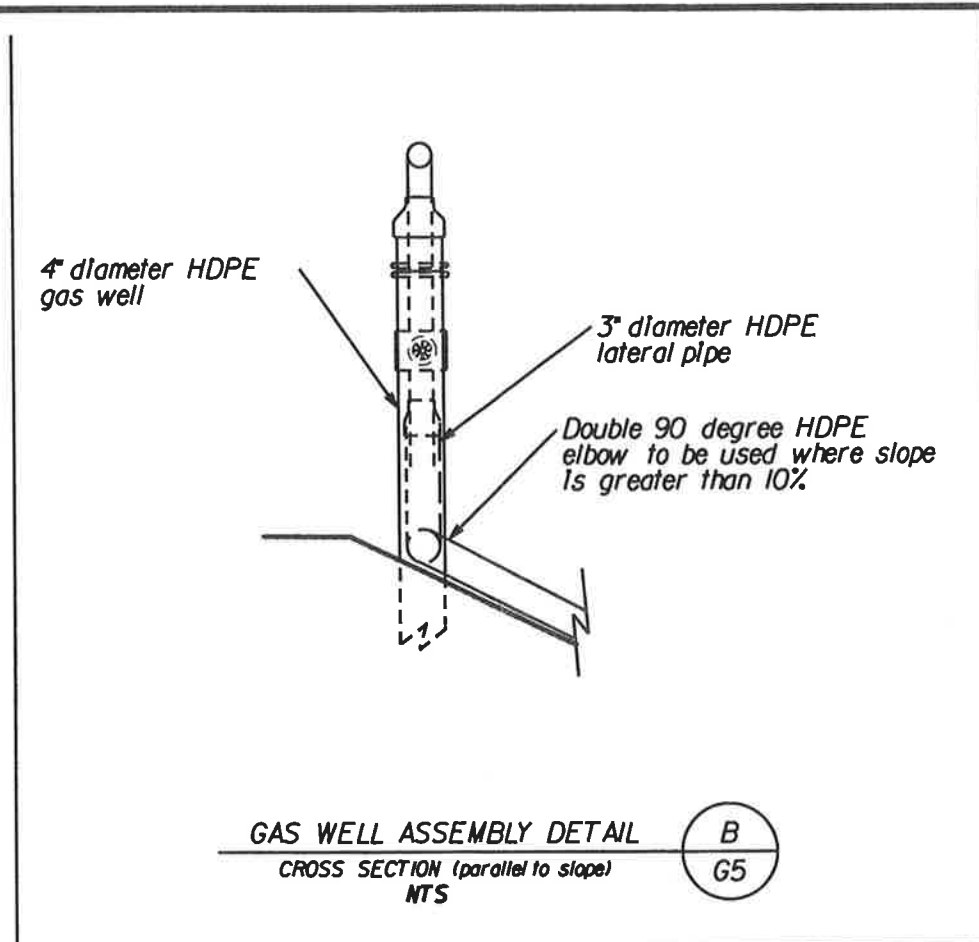
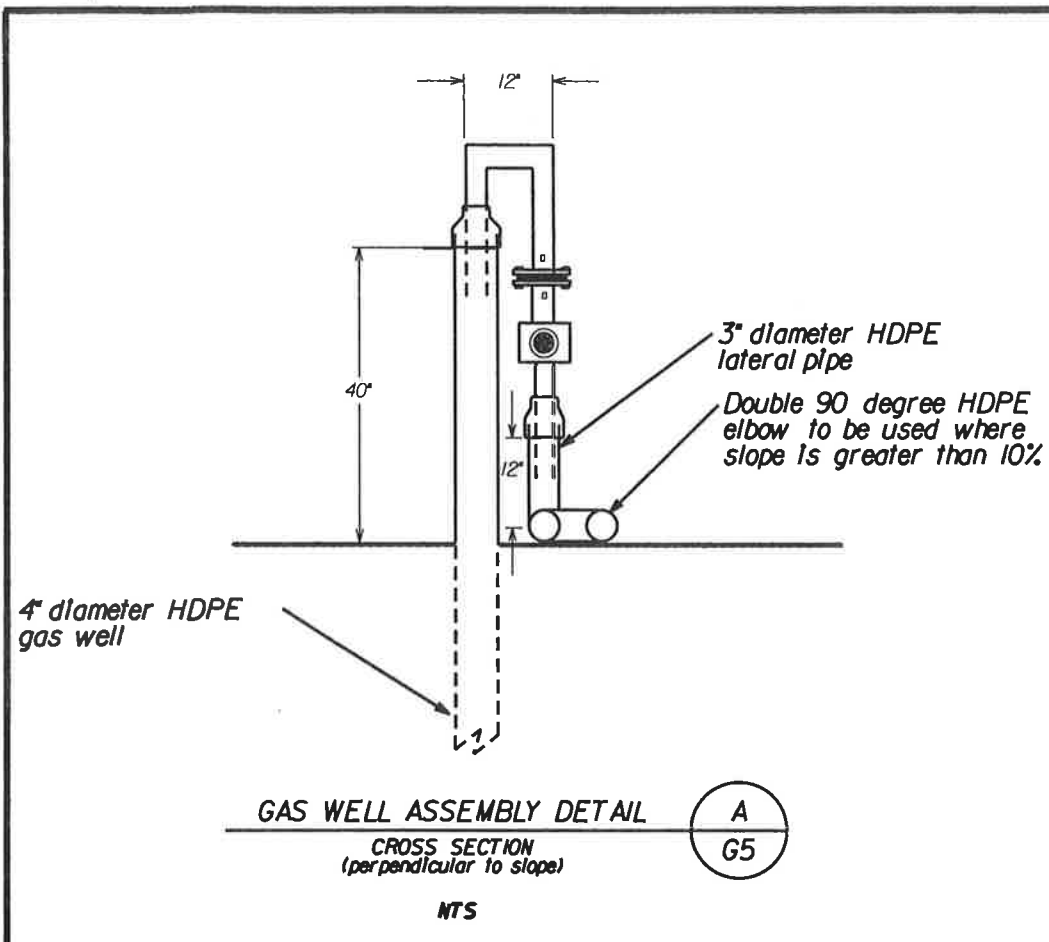
The Contractor shall remove and properly dispose of all refuse from the construction site. The County shall have the right to determine what is refuse, and to determine the manner and placement of on-site disposal. Any hydrocarbon-impacted soils found at the site as a result of the construction operation, such as equipment maintenance, shall be removed and properly disposed of at the Contractor's expense.

15.4 MEASUREMENT AND PAYMENT

Demobilization as shown in **Bid Item No. 22** "Demobilization" shall be done on an **Each** basis and shall, at a minimum, consist of removal of excess materials, proper cleanup of construction generated debris and removal of construction equipment. Payment will be made at the completion of the Contract.

END OF SECTION

Appendix A – Project Drawings



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	MDH
					DRAWN BY:	MDH
					CHECKED BY:	
					DATE:	March 11, 2011
					DATE OF PHOTOGRAPHY:	NA
					PERNOQUE:	laser

Riverside County
 Waste Management Department
 Hans W. Kerrkamp, General Manager/Criet Engineer

G5

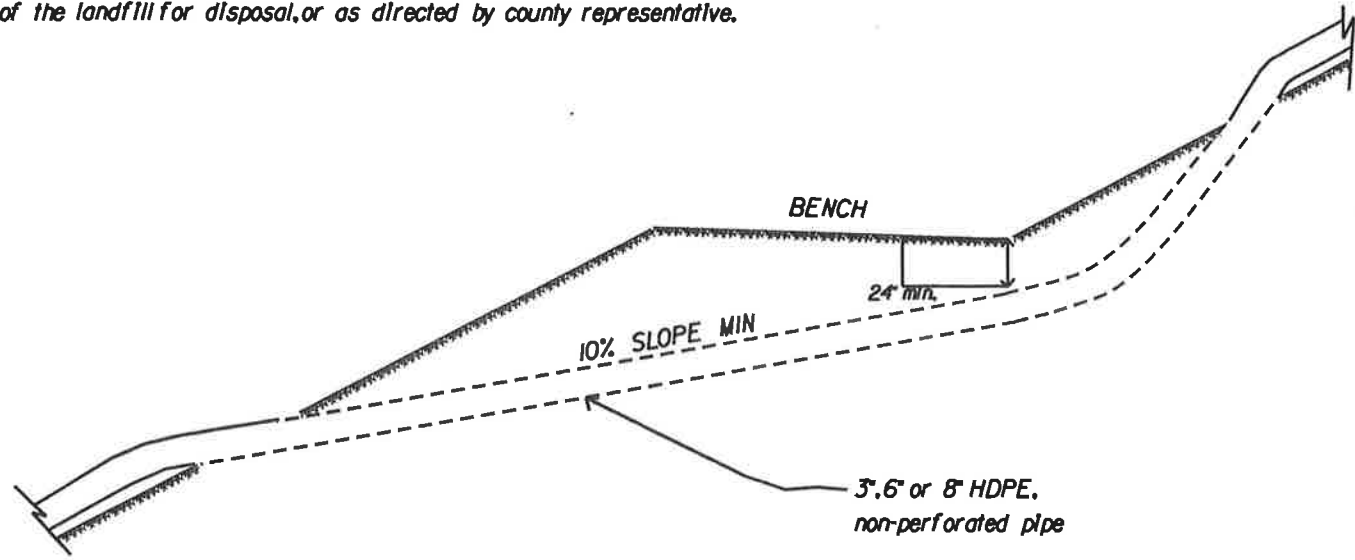
Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfill

Horizontal Well to Lateral and Gas Well Assembly Details

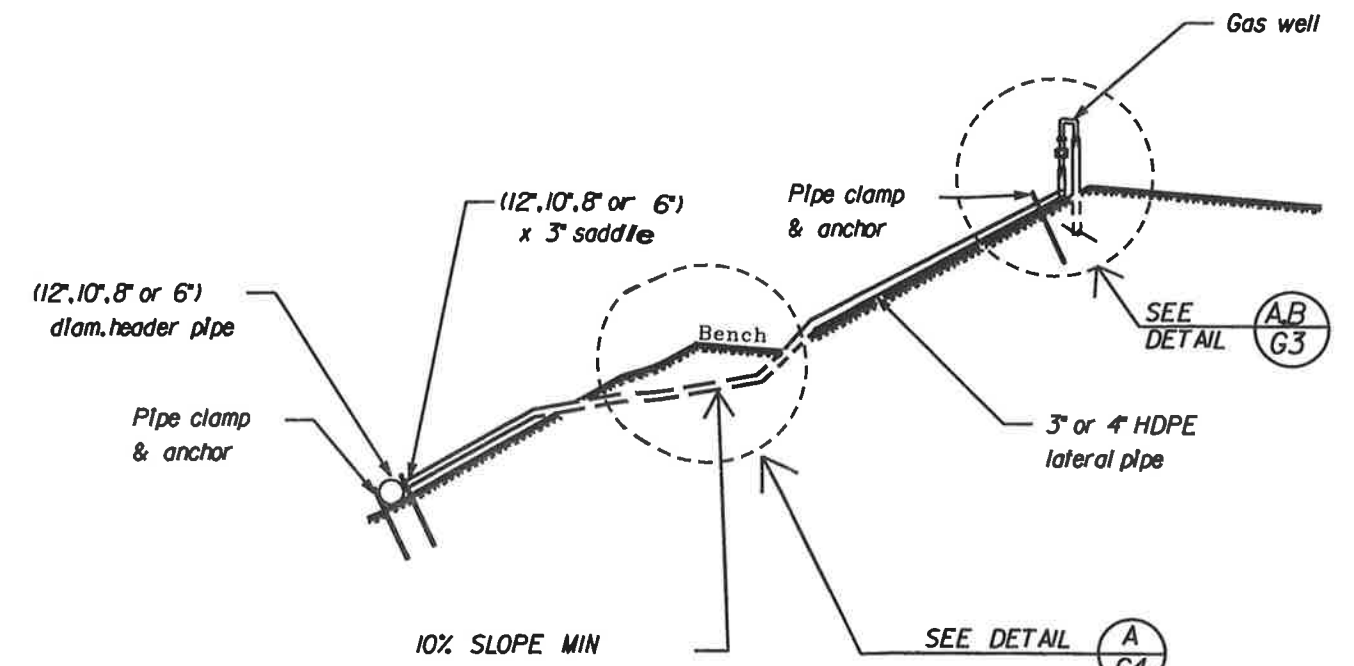
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DIRECTORY:	2011\PWC LFG Exp. FY10-11 through FY 13-14
FILE:	typical gas well assembly 11_12.dgn
SHEET	5 OF 9

Notes:

- 1.) Trench to be backfilled with clean soil in 6" lifts to 90% compaction
- 2.) Refuse might be encountered during trenching on deeper part of trench.
- 3.) All excavated refuse must be removed and taken to the working face of the landfill for disposal, or as directed by county representative.



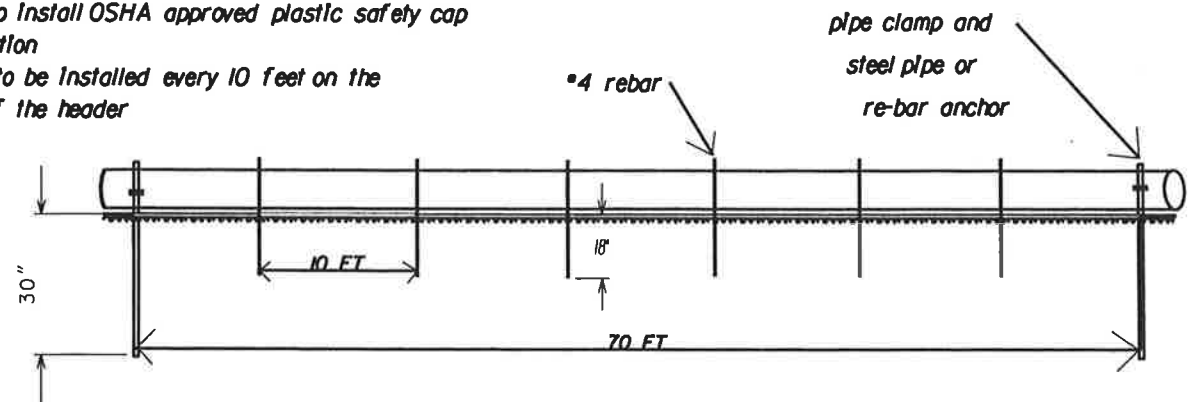
WELL LATERAL & HEADER BENCH CROSSING DETAIL
CROSS SECTION NTS (A) G6



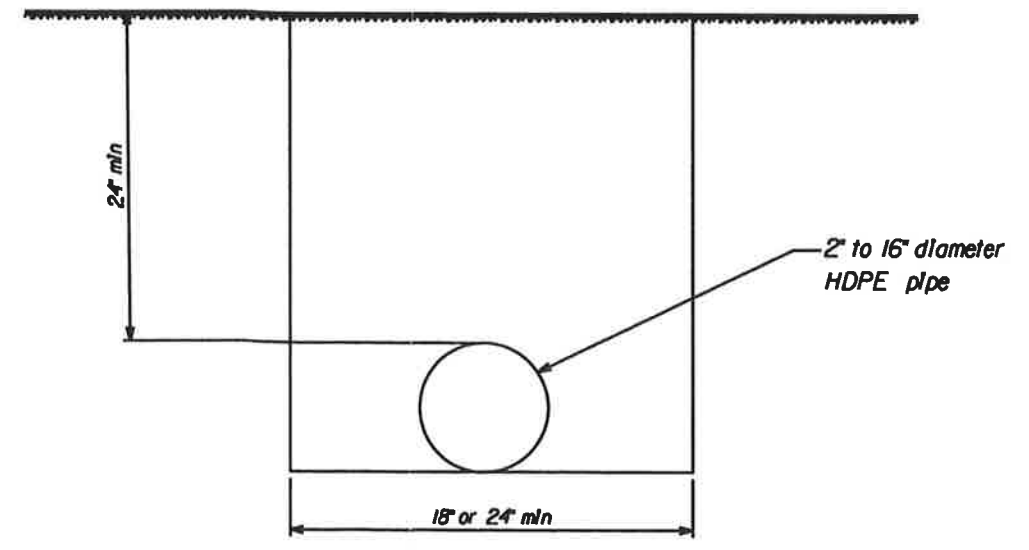
WELL LATERAL DETAIL B
CROSS SECTION NTS (B) G6

Notes:

- 1.) Pipe clamps & anchors to be installed every 70 feet.
- 2.) Pipe clamps & anchors to be installed within one foot of each saddle connection
- 3.) Rebar to be driven 18" into ground and extend several inches above the header.
- 4.) Contractor is to install OSHA approved plastic safety cap on each rebar section
- 5.) Rebar section to be installed every 10 feet on the down-slope side of the header



HEADER PIPE DETAIL C
CROSS SECTION NTS (C) G6



TRENCH DETAIL FOR BURIED PIPE D
CROSS SECTION NTS (D) G6

Notes:

- 1.) 2 - 8 diameter pipe trench minimum width is 18".
- 2.) 10 - 16 diameter pipe trench minimum width is 24".

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	MDH
					DRAWN BY:	MDH
					CHECKED BY:	MDH
					DATE:	MARCH 11, 2011
					DATE OF PHOTOGRAPHY:	NA
					PENQUEUE:	laser



Hans W. Kerkamp, General Manager/Chief Engineer

G6

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills

Lateral and Header Details

SCALE:	NTS
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DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PMC LFG Exp. FY11-12 through FY13/4
FILE NAME:	typical header lateral detail 11 12.dgn
SHEET:	6 OF 9

NOTES:

A. WELL PIPE AND GRAVEL CROSSSECTION SHALL BE PLACED BELOW THE COVER SOIL AND WITHIN TRASH.

B. PERFORATION SHALL BE:
1/2" DIAMETER AT 6" O.C. INTERVALS; 4 ROWS OF HOLES AT 90 DEG INTERVALS; PERPENDICULAR TO THE PIPE; AND COMPLETELY PENETRATE THE THICKNESS OF THE PIPE.

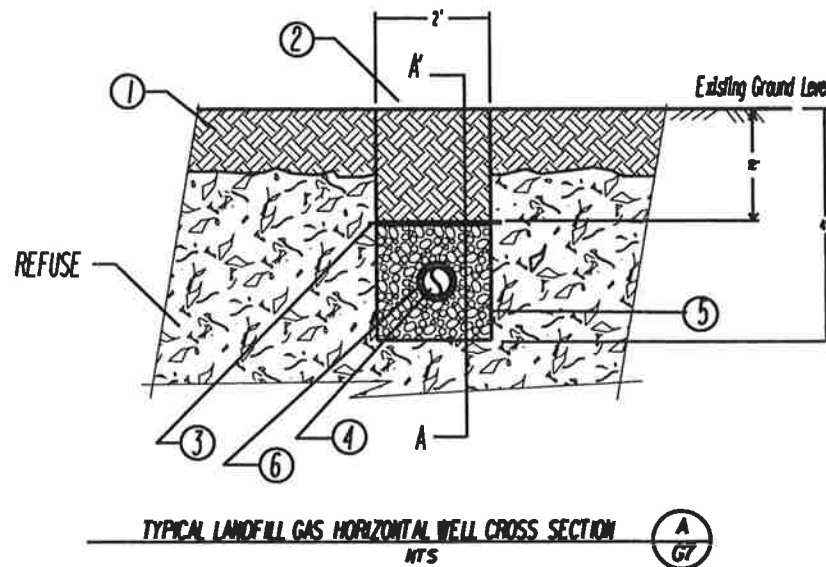
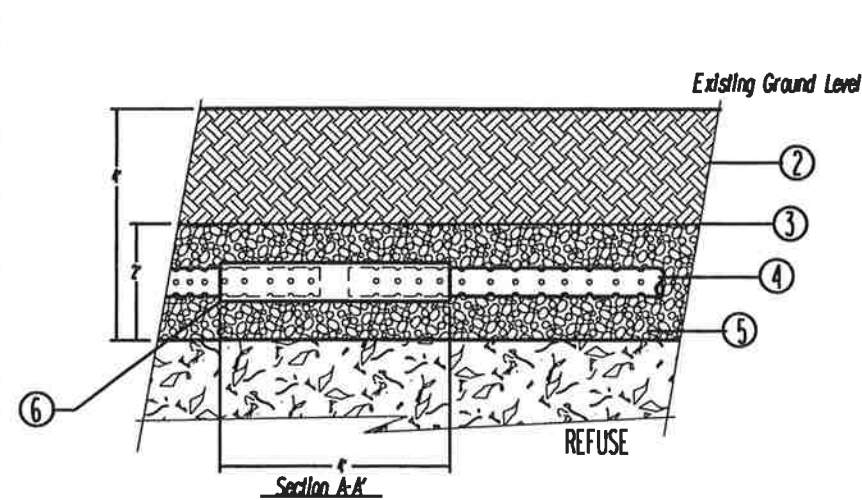
C. GEOTEXTILE SPECIFICATIONS

- 1) The geotextile shall be of woven needle-punched, polyester fabric, Trevira Spunbound Type 1135 or approved equal.
- 2) The geotextile fibers shall be uniform in thickness and surface texture.
- 3) The geotextile shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soils.
- 4) The geotextile shall be a minimum of 125 mils thick and conform to the minimum physical properties listed below:

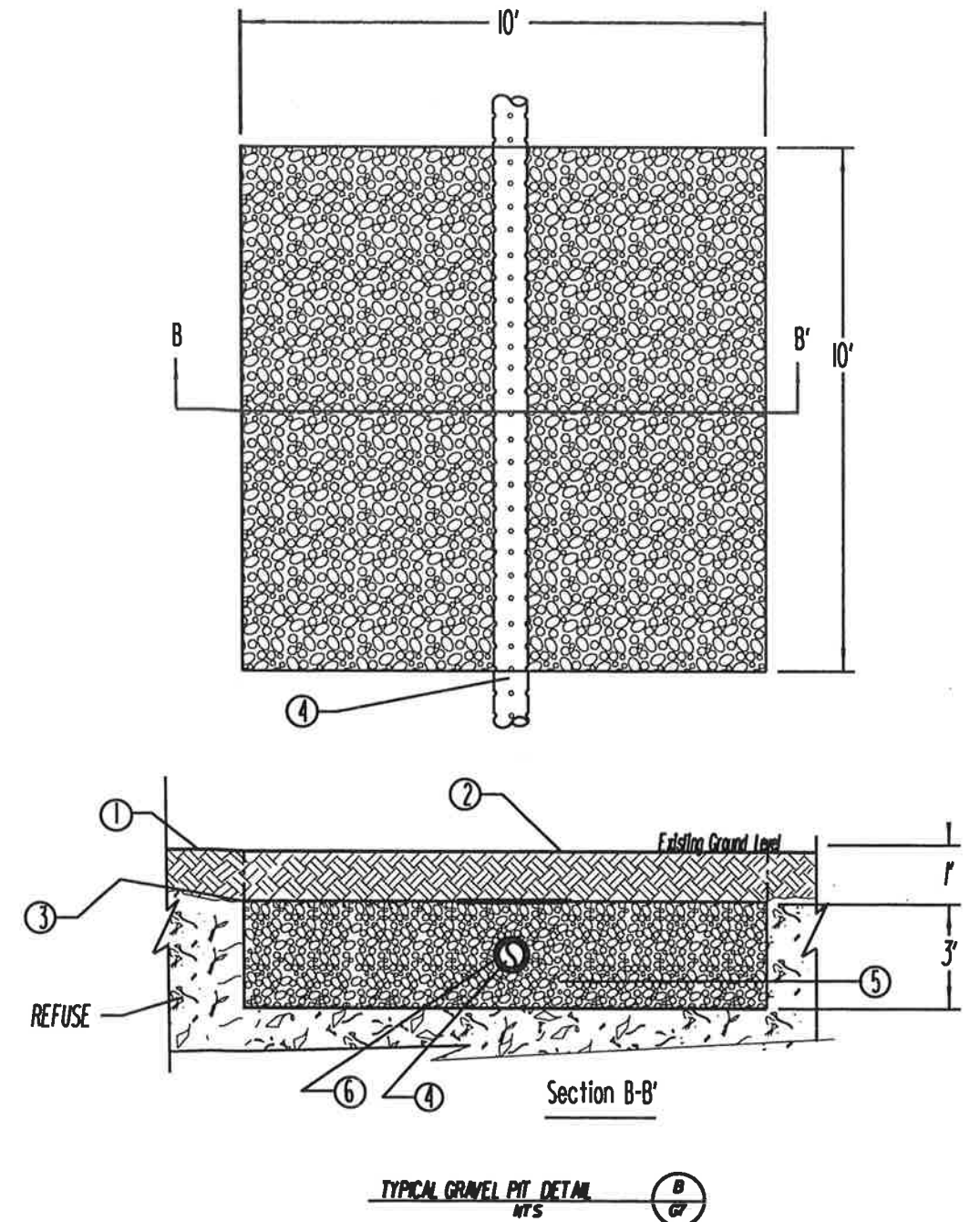
Physical Property	Test Method	Results
Fabric Weight	ASTM D-3776	10 oz/cy
Grab Tensile Strength	ASTM D-4632	305 lb.
Grab Elongation	ASTM D-4632	60 lb.
Mullen Burst Strength	ASTM D-3786	510 psi
Trapezoid Strength	ASTM D-4553	100 lb.

CONSTRUCTION NOTES:

1. EXISTING COVER SOIL
2. CLEAN TRENCH/PIT BACKFILL
3. GEOTEXTILE (see specifications on this sheet)
4. 6" HDPE, SDR 11, PERFORATED, 40' SECTION, SEE NOTE A
5. 2"-4" WASHED, CRUSHED GRAVEL
6. 8" HDPE, SDR 11, PERFORATED, EXPANSION PIPE (4' LENGTH EVERY 40')



TYPICAL LANDFILL GAS HORIZONTAL WELL CROSS SECTION
NTS



TYPICAL GRAVEL PIT DETAIL
NTS

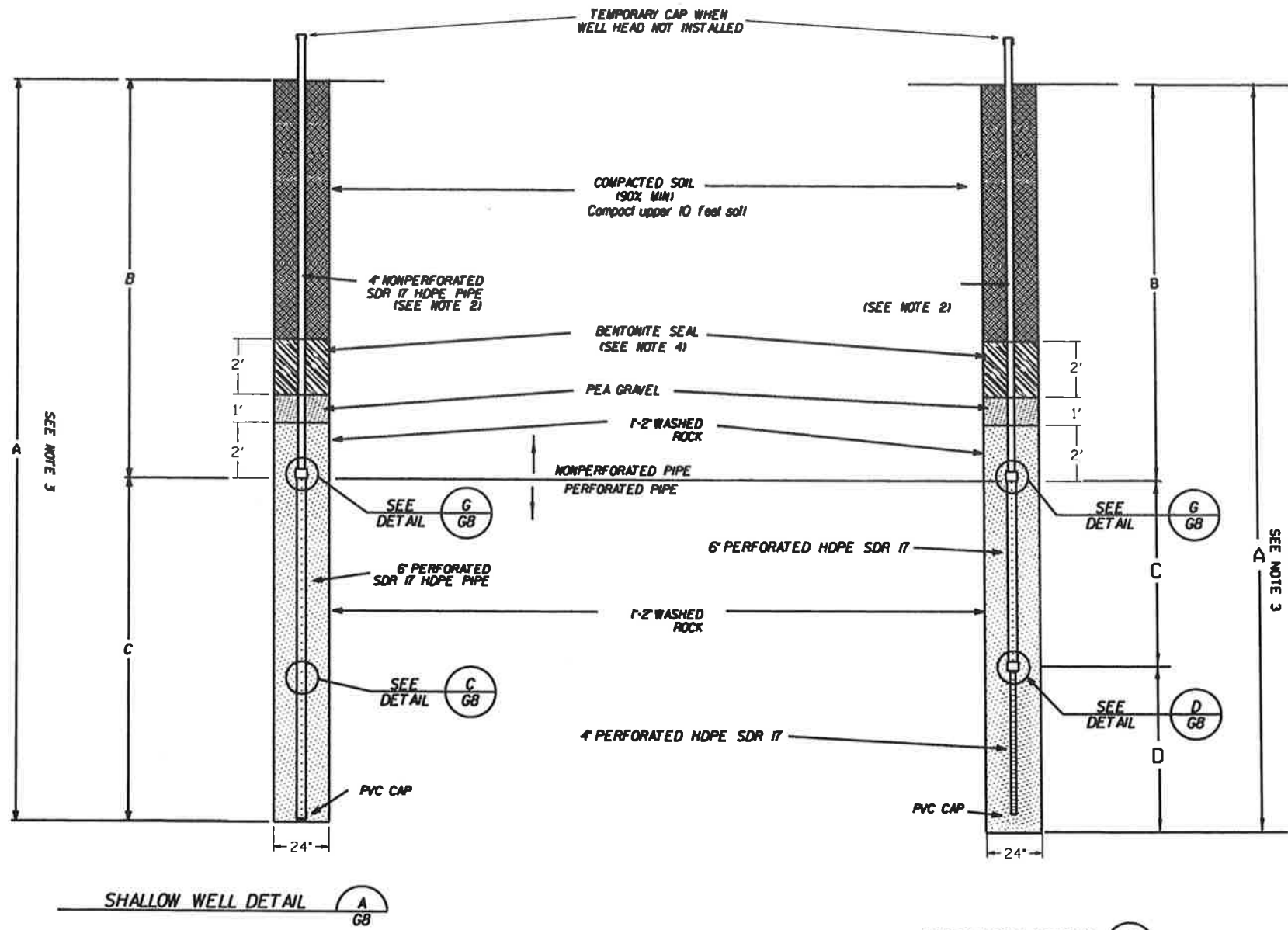
NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	TE
					DRAWN BY:	TE
					CHECKED BY:	MDH
					DATE:	MARCH 11, 2011
					DATE OF PHOTOGRAPHY:	N/A
					PENQUEUE:	laser

Riverside County
Waste Management Department
Hans Kemkamp, General Manager/Chief Engineer

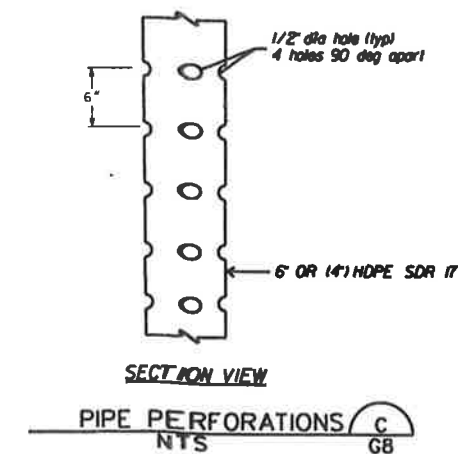
G7

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands & Lamb Canyon Sanitary Landfills
Typical Horizontal Well & Gravel Pit Detail

SCALE:	NTS
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DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\WC LFG Exp FY10-11 Through FY1314
FILE:	bl_c: Horiz Well.dtl 11_12.dgn
SHEET:	7 OF 9



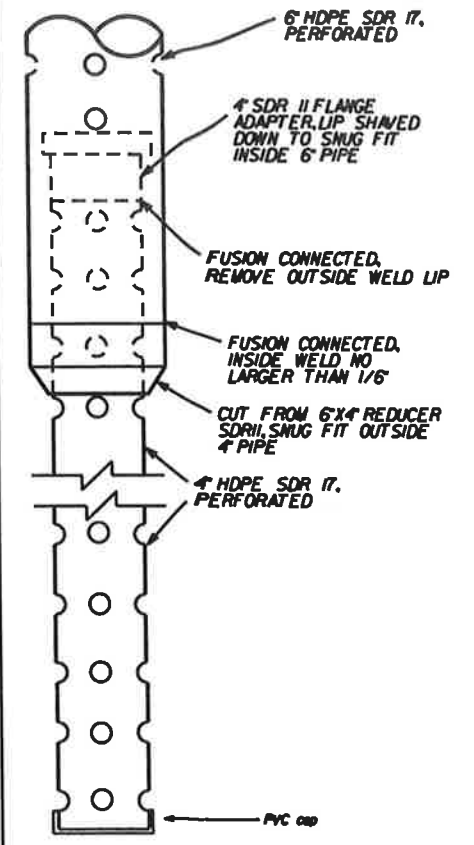
- NOTES:**
1. IF THE LANDFILL BOTTOM IS ENCOUNTERED DURING DRILLING, THE CONTRACTOR SHALL BACKFILL THE HOLE TO AN ELEVATION THREE FEET ABOVE THE LANDFILL BOTTOM WITH BENTONITE.
 2. NO WELD SEAM OR OTHER OBSTRUCTION SHALL BE PRESENT ON THE SOLID 4" PE PIPE THAT MIGHT HINDER IT'S MOVEMENT IN THE TELESCOPING JOINT FOR A DISTANCE OF 15' ABOVE THE JOINT. HOLD PIPE VERTICAL DURING BACKFILL.
 3. WELL CONSTRUCTION DIMENSIONS ARE SHOWN ON DRILLING TABLE ON THIS SHEET.
 4. DURING DRILLING, A SCAQMD APPROVED EMISSION CONTROL BOX SHALL BE PLACED OVER THE WELL-HOLE TO COLLECT LANDFILL GAS.
 5. ACTUAL WELL DIMENSION WILL DEPEND ON WELL DRILLING PROFILE AND SHALL BE DETERMINED BY FIELD ENGINEERS ON SITE.
 6. THE CONTRACTOR SHALL MAINTAIN A LOG FOR EACH HOLE DRILLED PROVIDED BY THE ENGINEER.
 7. DRILLING SHALL BE PERFORMED ACCORDING TO THE APPLICABLE CONDITIONS OF THE SCAQMD PERMIT TO CONSTRUCT.



WELL #	DETAIL	A	B	C	D	PLATE SIZE
EXAMPLE	DEEP	120	40	40	40	
EXAMPLE	SHALLOW	80	40	40		

Note: No well to be deeper than 120 feet deep

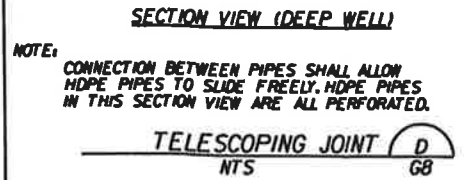
LAMB CANYON DRILLING TABLE
SCALE: NONE



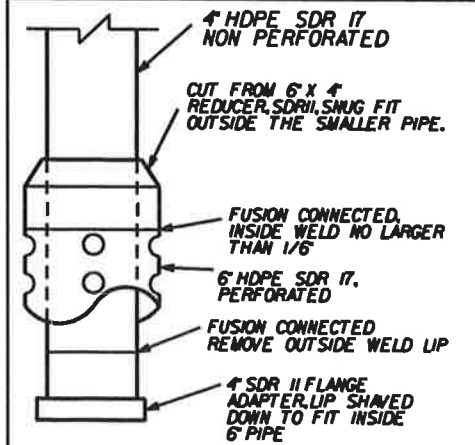
WELL #	DETAIL	A	B	C	D	PLATE SIZE
EXAMPLE	DEEP	105	35	40	30	
EXAMPLE	SHALLOW	75	35	40		

Note: No well to be deeper than 120 feet deep

BADLANDS DRILLING TABLE
SCALE: NONE



NOTE: CONNECTION BETWEEN PIPES SHALL ALLOW HDPE PIPES TO SLIDE FREELY. HDPE PIPES IN THIS SECTION VIEW ARE ALL PERFORATED.



NOTE: SECTION VIEW TELESCOPING JOINT

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	VTE
					DRAWN BY:	VTE
					CHECKED BY:	MDH
					DATE:	March 11, 2011
					DATE OF PHOTOGRAPHY:	NA
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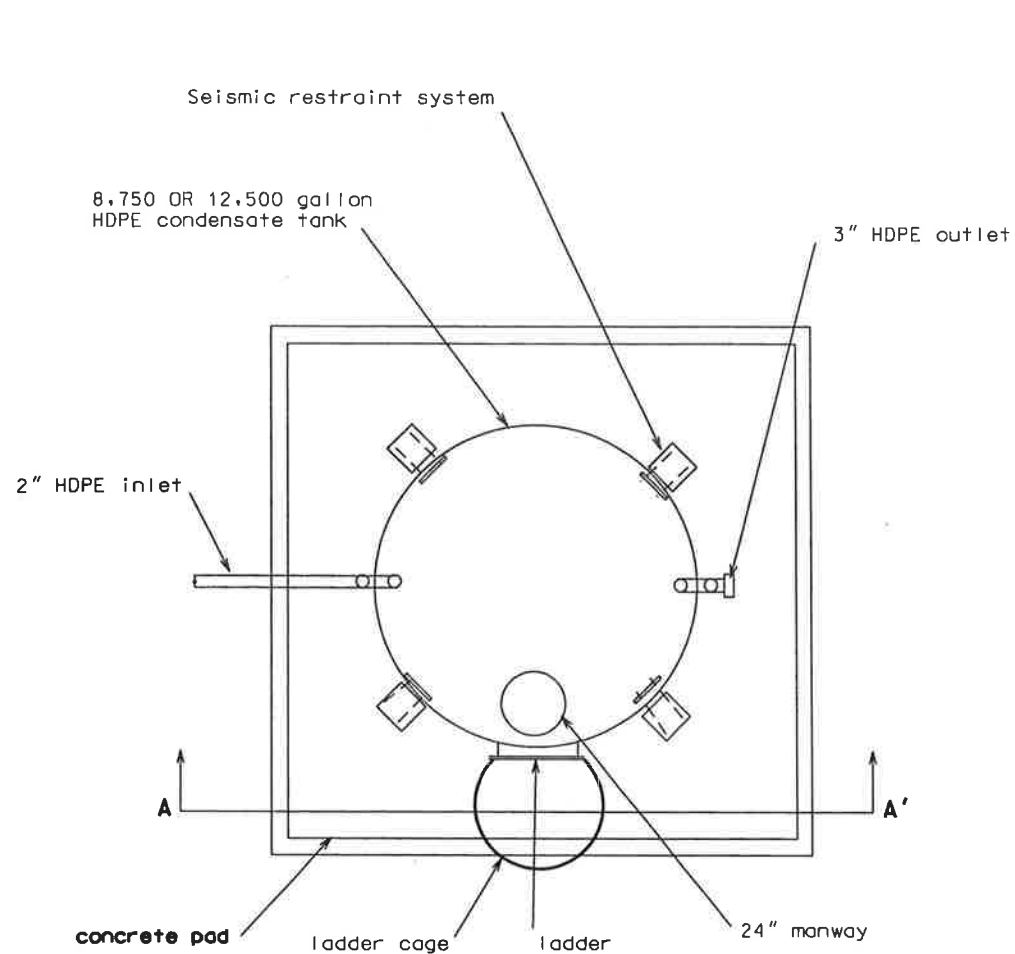
Riverside County
Waste Management Department
Hans W. Kerrkamp, General Manager/Chief Engineer

G8

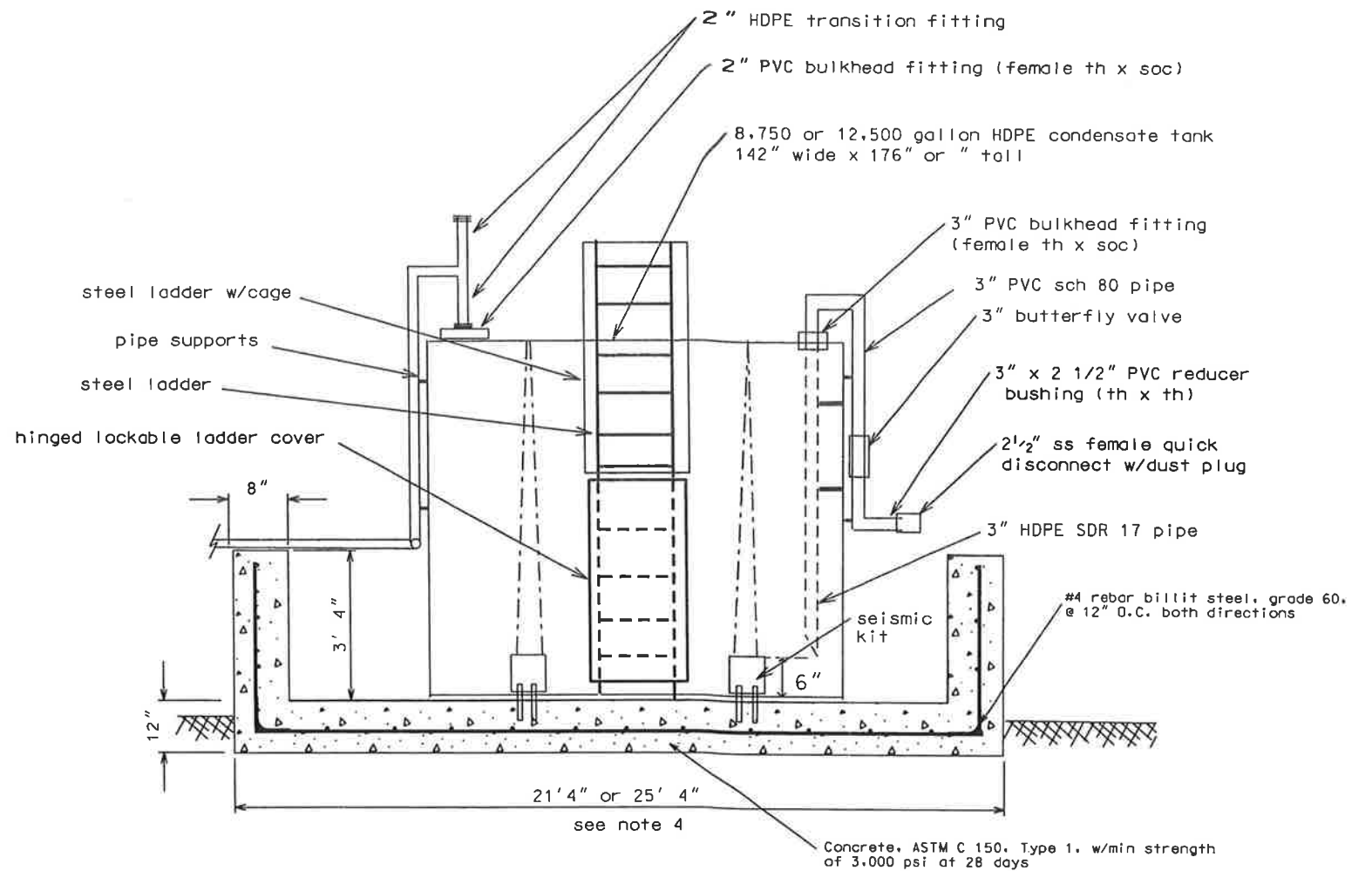
Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills

Typical Vertical Well Detail

SCALE:	NTS
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DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PWC LFG Exp. FY11-12 through FY13/14
FILE:	typical vertical well detail 11_12.dgn
SHEET:	8 OF 9



CONDENSATE TANK PLAN VIEW **A**
NTS **G9**



CONDENSATE TANK AND CONCRETE STRUCTURE DETAIL (SECTION A-A') **B**
NTS **G9**

- Note:
- 1.) Seismic restraint system and ladder to be installed per manufacturers instructions.
 - 2.) Seismic restraint system design and installation instructions shall be stamped by a California registered engineer
 - 3.) Contractor to over-excavate 24" and recompact soil before pouring structure
 - 4.) 21' 4" dimension for 8,750 gallon tank, 25' 4" dimension for 12,500 gallon tank

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	NDN
					DRAWN BY:	NDN
					CHECKED BY:	NDN
					DRAWING DATE:	March 8, 2011
					PHOTO DATE:	

Riverside County
Waste Management Department
Mark W. Kernkamp, General Manager / Chief Engineer

G9

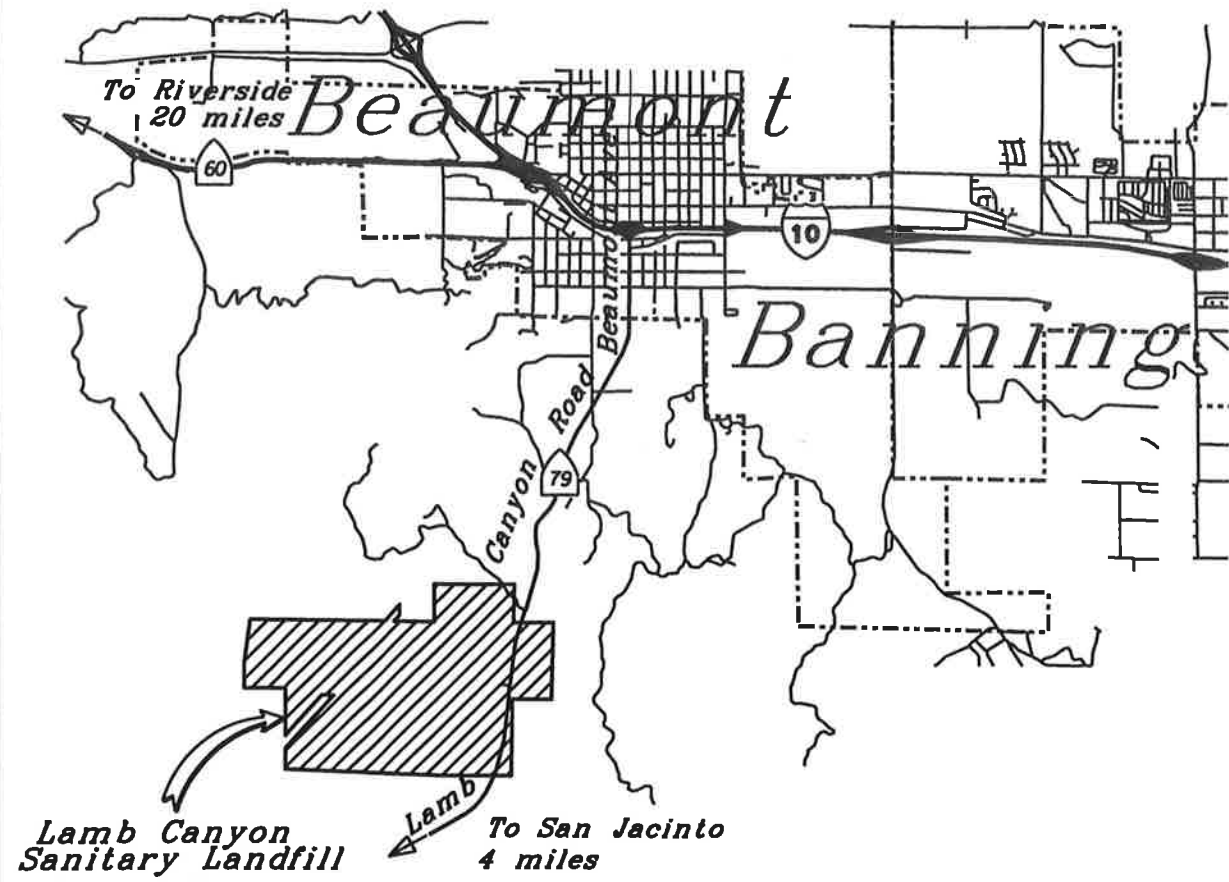
Construction of Landfill Gas Collection System
Expansion for Fiscal Year 2011/2012 through
Fiscal Year 2013/2014 at the
Badlands and Lamb Canyon Landfills

Concrete Structure & Tank Detail

SCALE: NTS
SERVER: wms-rb-8
DIRECTORY: g:\projects\landfill\gas\expansion
DIRECTORY: PVC I/F Equip N/2 through 13/14
FILE: 04-2103 csmr.concrete structure.dwg
SHEET 9 of 9

Lamb Canyon Sanitary Landfill Vicinity Map

Por. Secs. 21, 28 & 29 T3S R1W S.B.B.M.

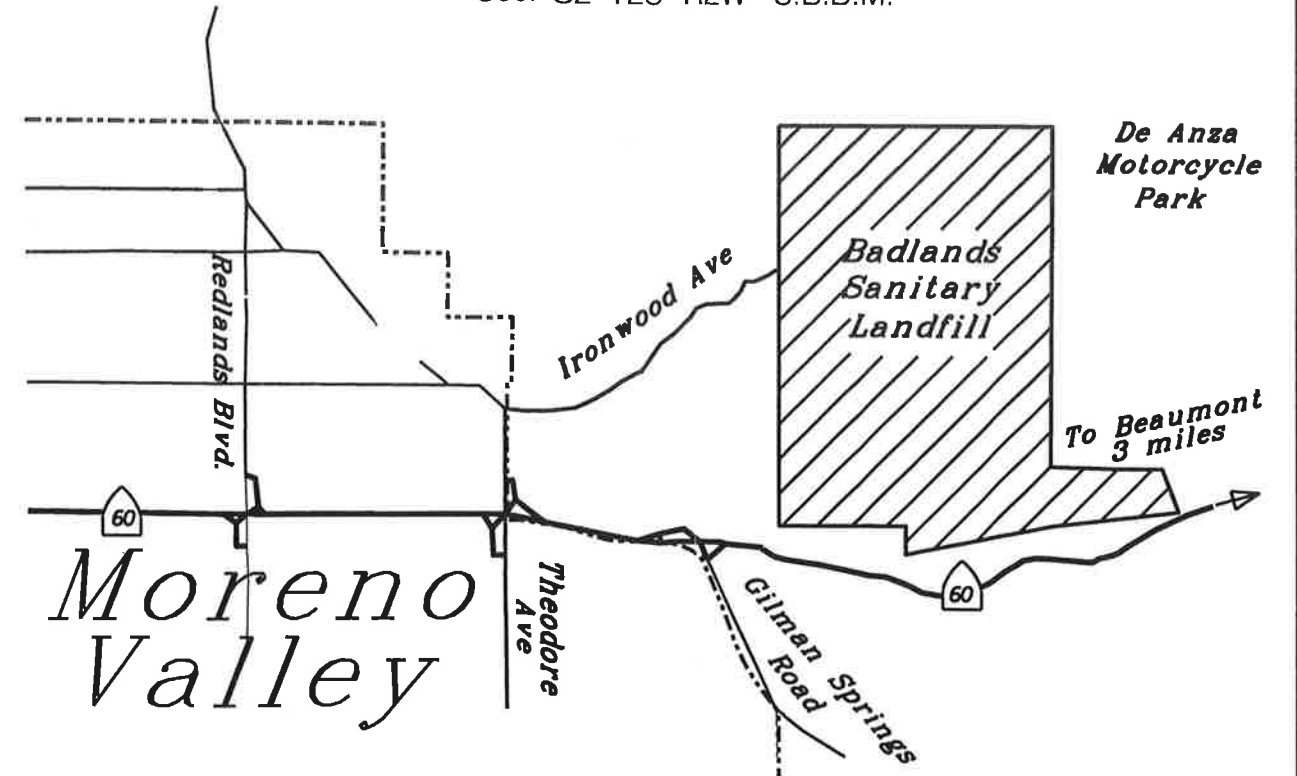


Legend	
Paved Access Roads	—
Freeways (Hwys 60 & I-10)	—
Other Roads	—
City Boundaries	- - - -
Sanitary Landfill	▨

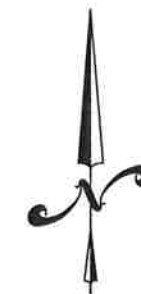


Badlands Sanitary Landfill Vicinity Map

Por. Secs. 4 & 5 T3S R2W &
Sec. 32 T2S R2W S.B.B.M.



Legend	
Paved Access Roads	—
Freeway (Highway 60)	—
Other Roads	—
City Boundary	- - - -
Sanitary Landfill	▨



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	MDH
					DRAWN BY:	MDH
					CHECKED BY:	MDH
					DATE:	March 15, 2011
					DATE OF PHOTOGRAPHY:	NA
					PENQUELUE:	laser

Riverside County
Waste Management Department

Hans W. Kernkamp, General Manager/Chief Engineer

G2

Construction of Landfill Gas Collection
System Expansions for Fiscal Year 2011/2012
through Fiscal Year 2013/2014 at the
Badlands and Lamb Canyon Sanitary Landfills
**Project Vicinity
Maps**

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PWC Exp. FY11-12 through FY13-14
FILE:	Vicinity maps G2 11-12.dgn
SHEET	2 OF 9



Riverside County
Waste Management Department

Hans W. Kernkamp, General Manager-Chief Engineer

Digital Appendix B
SCAQMD Permit to Operate
Badlands and Lamb Canyon Landfills

Digital Appendix C
Stormwater Pollution Prevention Plan (SWPP)
Badlands and Lamb Canyon Landfills

Digital Appendix D
Riverside County Hazardous Materials
Business Emergency Plans (BEP)
Badlands and Lamb Canyon Landfills

Digital Appendix E
Riverside County Spill Prevention, Control,
And Countermeasure (SPCC)
Badlands and Lamb Canyon Landfills

Appendix A – Project Drawings

Notes:

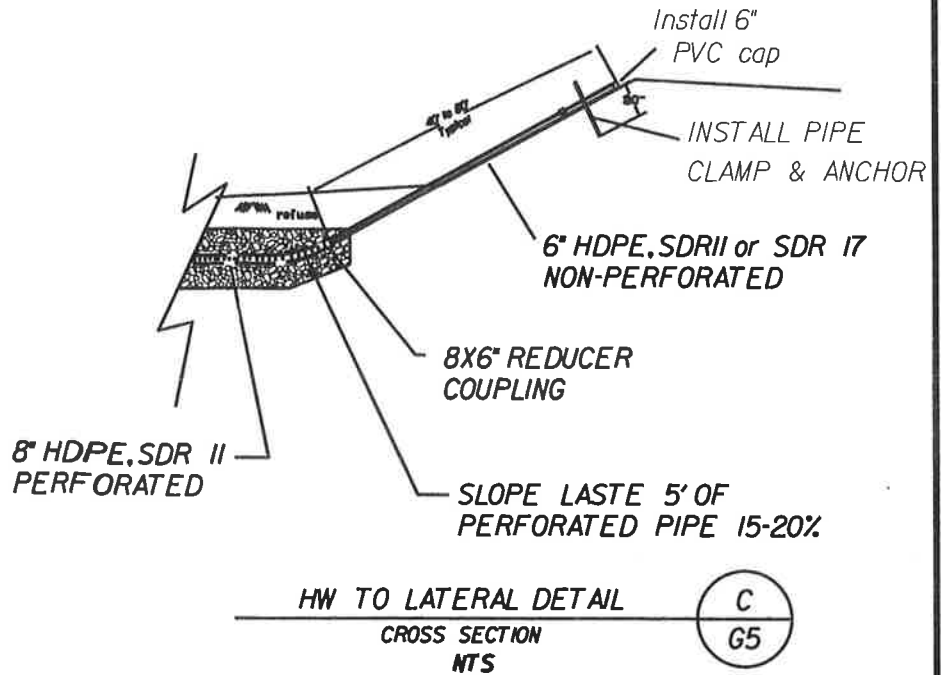
- 1.) Pipe clamp to be installed on 1 1/4" steel pipe driven 30" into soil.
- 2.) 6" diameter pipe clamps to be supplied by the County

3" diameter HDPE lateral pipe

Double 90 degree HDPE elbow to be used where slope is greater than 10%



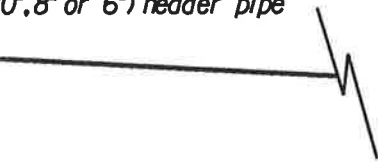
DETAIL B
G5



HW TO LATERAL DETAIL C
CROSS SECTION G5
NTS

8.6" x 3" saddle

0.8" or 6" header pipe



- 1.) 3" HDPE stub out from saddle shall be greater than 12"

DETAIL D
G5

G5

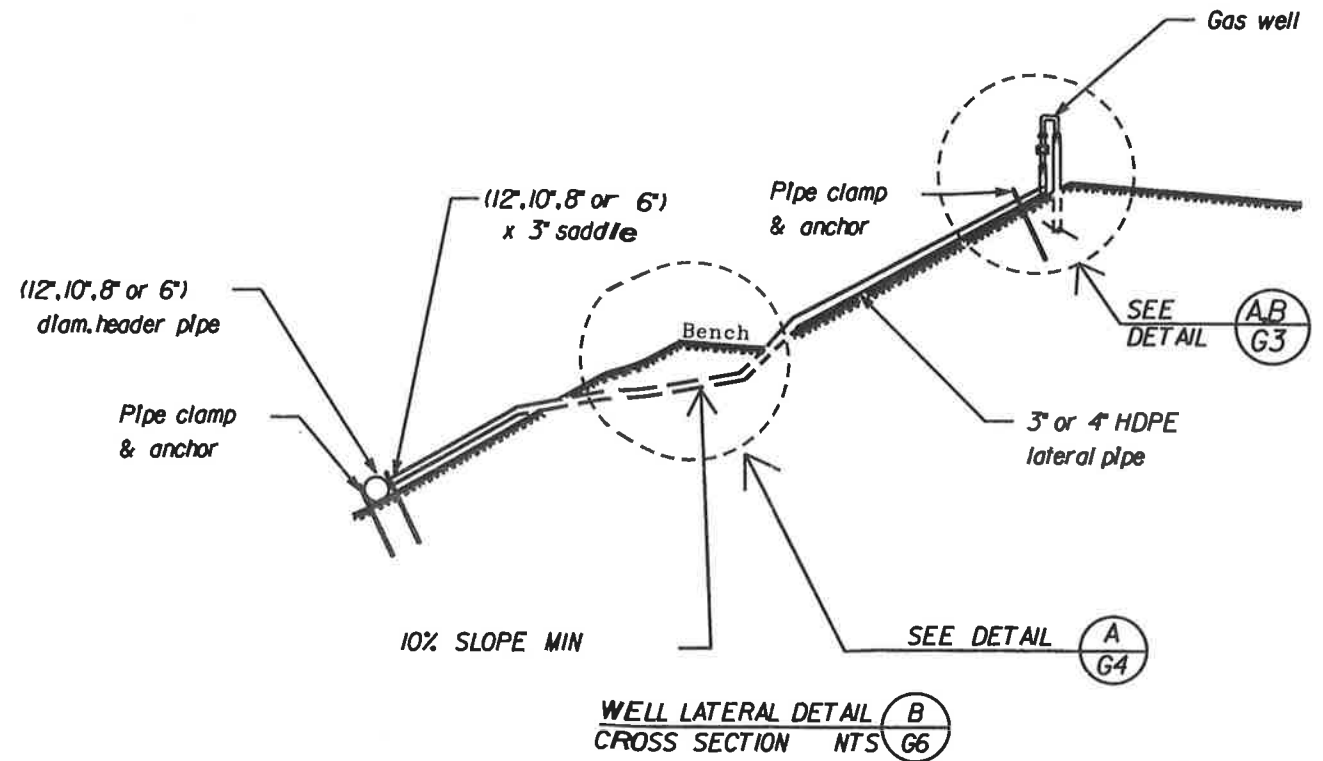
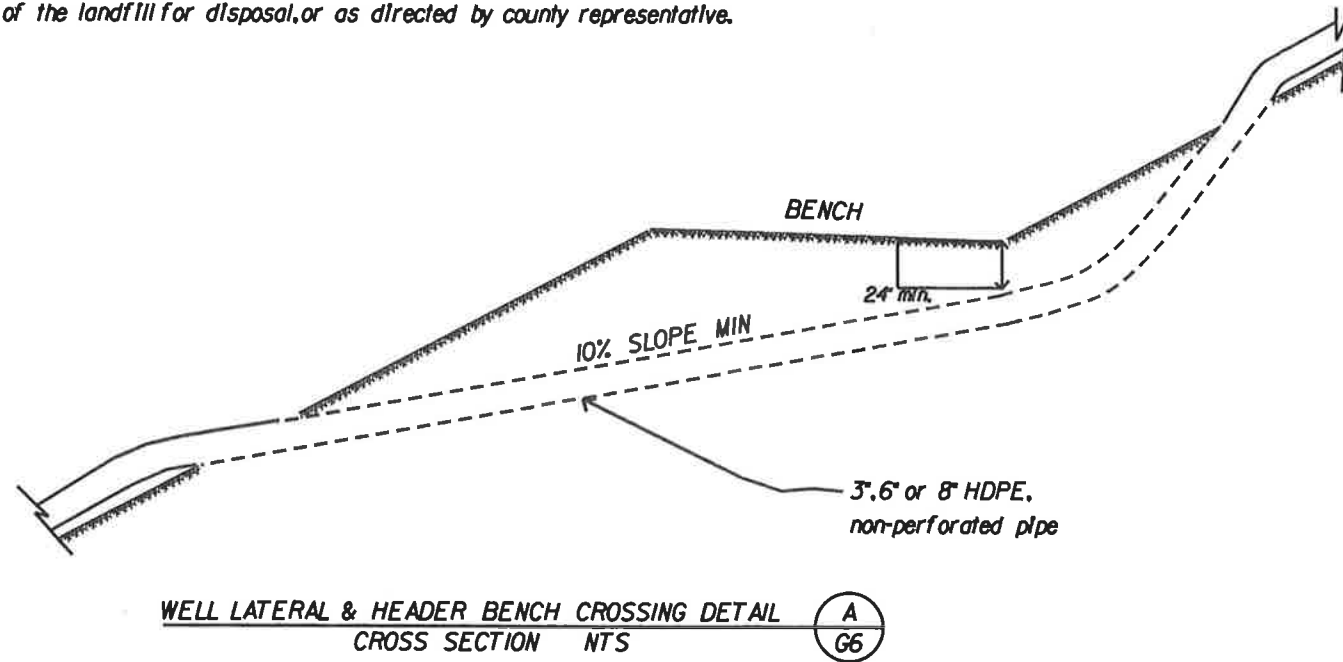
Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfill

Horizontal Well to Lateral and Gas Well Assembly Details

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PWC LFG Exp. FY10-11 through FY 13-14
FILE:	typical gas well assembly t1_12.dgn
SHEET	5 OF 9

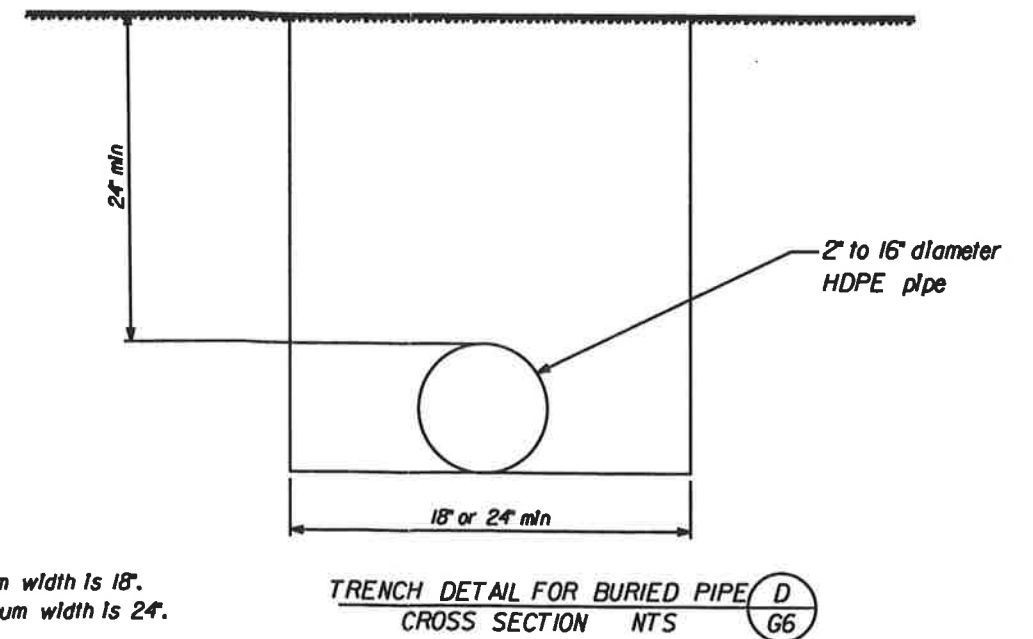
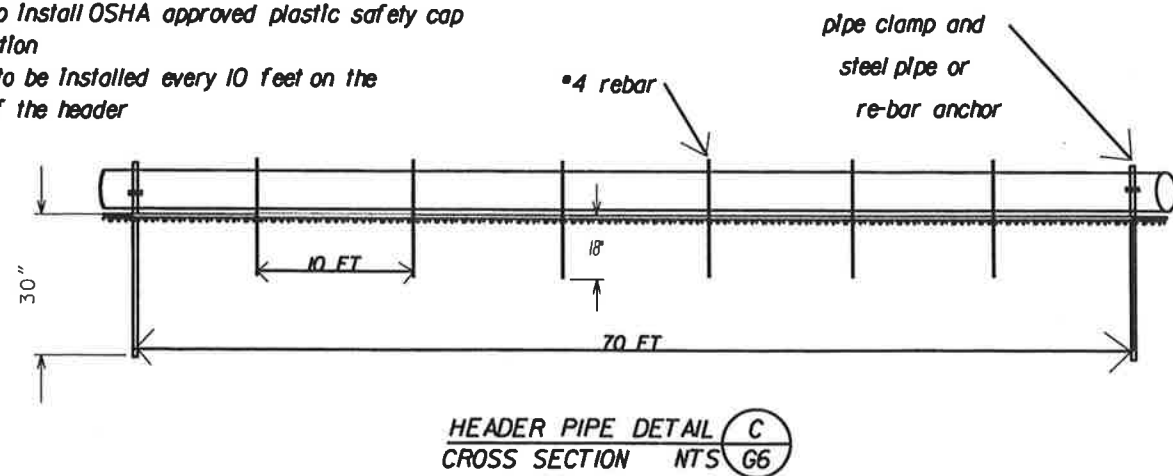
Notes:

- 1.) Trench to be backfilled with clean soil in 6" lifts to 90% compaction
- 2.) Refuse might be encountered during trenching on deeper part of trench.
- 3.) All excavated refuse must be removed and taken to the working face of the landfill for disposal, or as directed by county representative.



Notes:

- 1.) Pipe clamps & anchors to be installed every 70 feet.
- 2.) Pipe clamps & anchors to be installed within one foot of each saddle connection
- 3.) Rebar to be driven 18" into ground and extend several inches above the header.
- 4.) Contractor is to install OSHA approved plastic safety cap on each rebar section
- 5.) Rebar section to be installed every 10 feet on the down-slope side of the header



Notes:

- 1.) 2" - 8" diameter pipe trench minimum width is 18".
- 2.) 10" - 16" diameter pipe trench minimum width is 24".

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	MDH
					DRAWN BY:	MDH
					CHECKED BY:	MDH
					DATE:	MARCH 11, 2011
					DATE OF PHOTOGRAPHY:	N/A
					PENQUEVE:	laser

Riverside County
Waste Management Department

Here: W. Kerkamp, General Manager/Civil Engineer

G6

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills

Lateral and Header Details

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PMC LFG Exp. FY11-12 through FY13/14
FILE NAME:	typical header lateral detail 11 12.dgn
SHEET:	6 OF 9

NOTES:

A. WELL PIPE AND GRAVEL CROSSSECTION SHALL BE PLACED BELOW THE COVER SOIL AND WITHIN TRASH.

B. PERFORATION SHALL BE:
1/2" DIAMETER AT 6" O.C. INTERVALS; 4 ROWS OF HOLES AT 90 DEG INTERVALS; PERPENDICULAR TO THE PIPE; AND COMPLETELY PENETRATE THE THICKNESS OF THE PIPE.

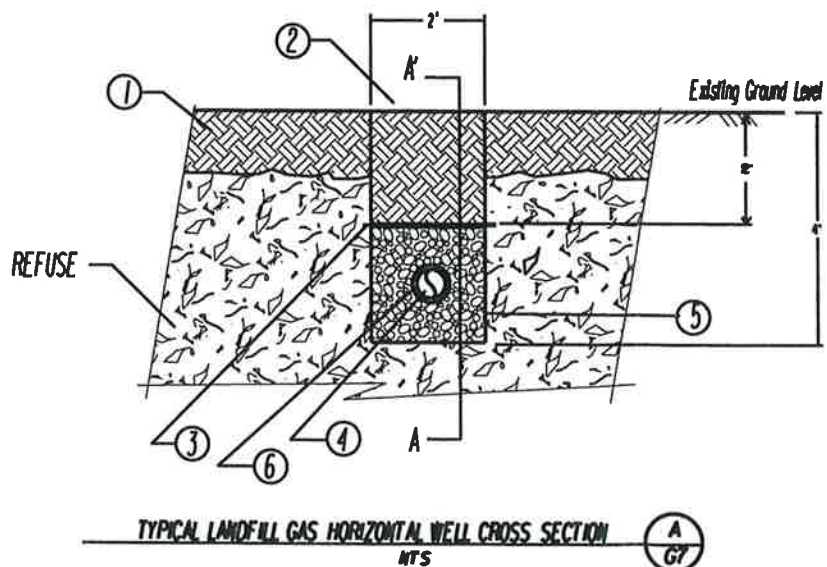
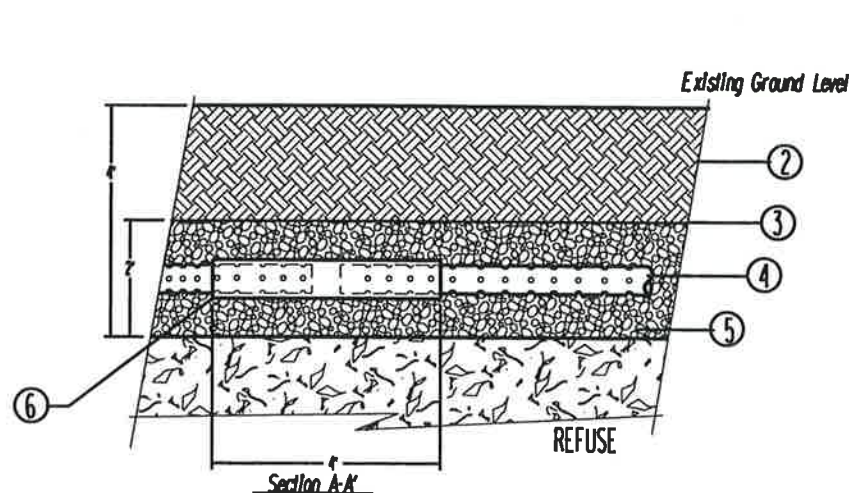
C. GEOTEXTILE SPECIFICATIONS

- 1.) The geotextile shall be of woven needle-punched, polyester fabric, Trevirol Spunbound Type II35 or approved equal.
- 2.) The geotextile fibers shall be uniform in thickness and surface texture.
- 3.) The geotextile shall be free of any chemical treatment or coating that reduces permeability and shall be inert to chemicals commonly found in soils.
- 4.) The geotextile shall be a minimum of 125 Mils thick and conform to the minimum physical properties listed below:

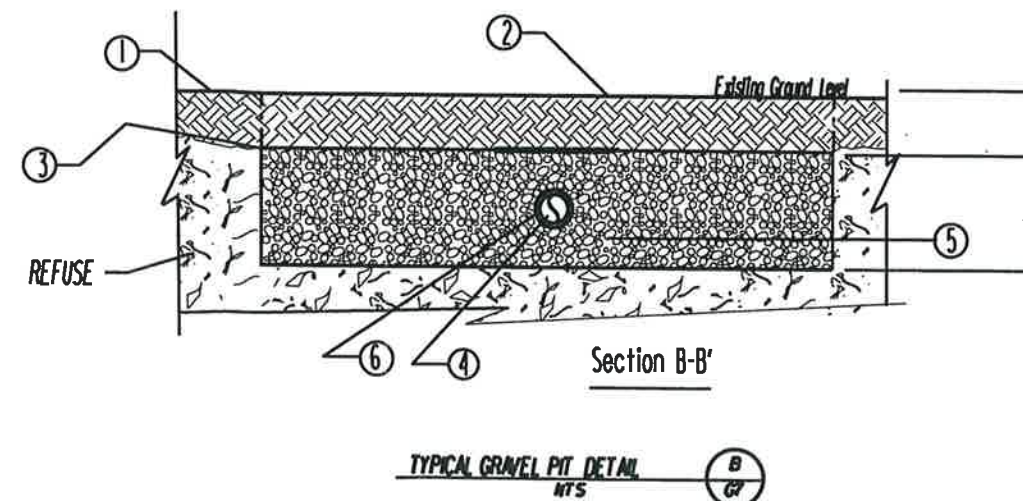
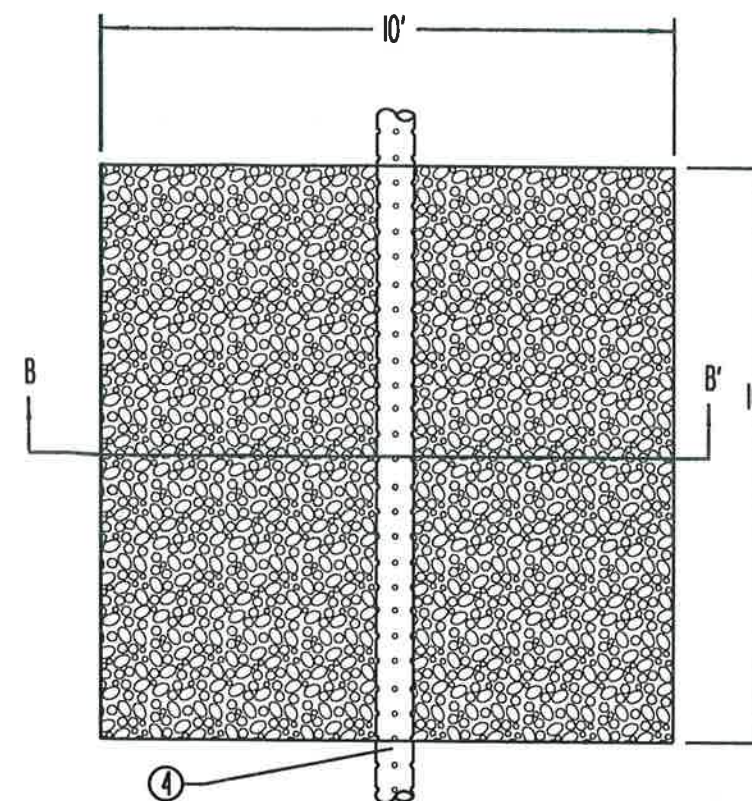
Physical Property	Test Method	Results
Fabric Weight	ASTM D-3776	10 oz/cy
Grab Tensile Strength	ASTM D-4632	305 lb.
Grab Elongation	ASTM D-4632	60 lb.
Mullen Burst Strength	ASTM D-3786	510 psl
Trapezoid Strength	ASTM D-4553	100 lb.

CONSTRUCTION NOTES:

- 1. EXISTING COVER SOIL
- 2. CLEAN TRENCH/PIT BACKFILL
- 3. GEOTEXTILE (see specifications on this sheet)
- 4. 6" HDPE, SDR 11, PERFORATED, 40' SECTION, SEE NOTE A
- 5. 2"-4" WASHED, CRUSHED GRAVEL
- 6. 8" HDPE, SDR 11, PERFORATED, EXPANSION PIPE (4' LENGTH EVERY 40')



TYPICAL LANDFILL GAS HORIZONTAL WELL CROSS SECTION
NTS



TYPICAL GRAVEL PIT DETAIL
NTS

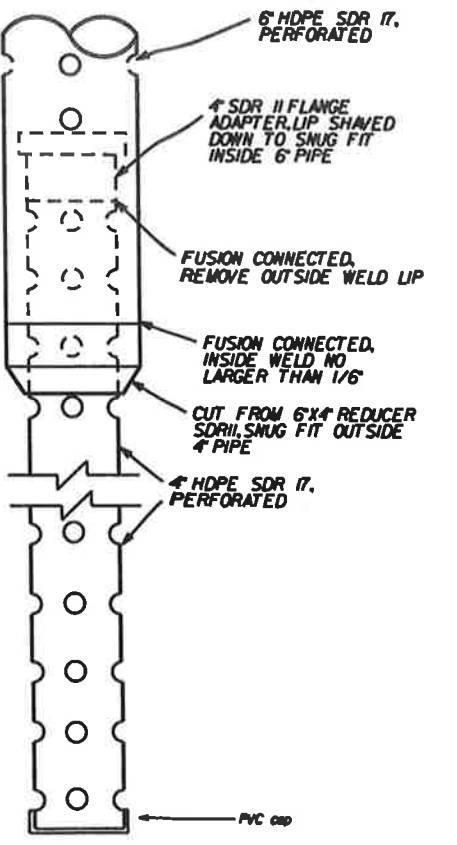
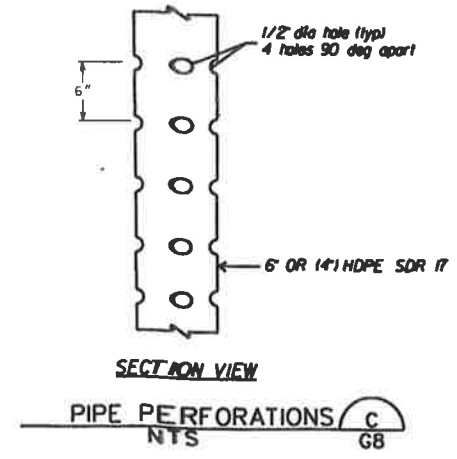
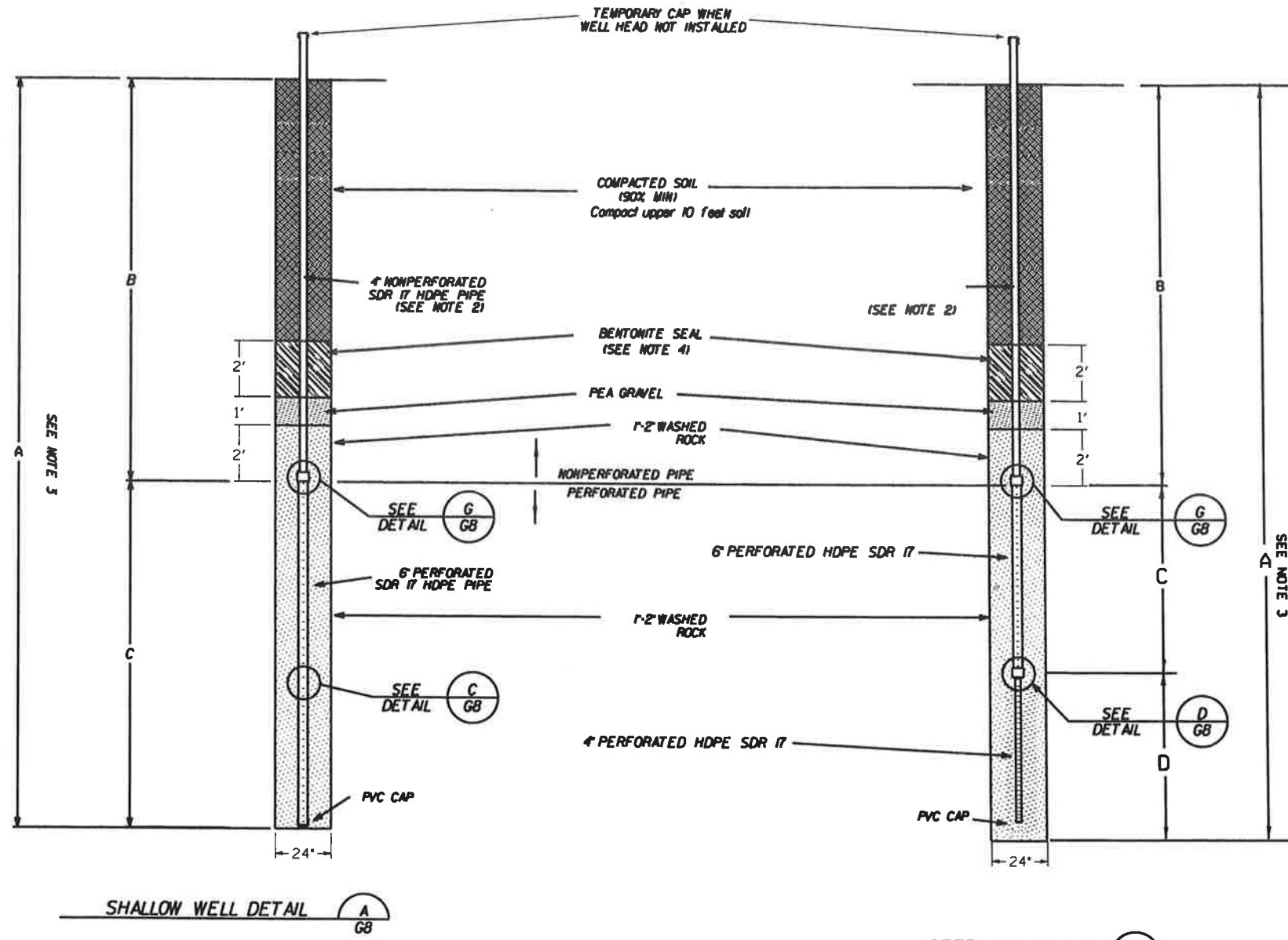
NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	TE
					DRAWN BY:	TE
					CHECKED BY:	MDH
					DATE:	MARCH 11, 2011
					DATE OF PHOTOGRAPHY:	NA
					PENQUEUE:	laser

Riverside County
Waste Management Department
Hans Kemkamp, General Manager/Civil Engineer

G 7

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands & Lamb Canyon Sanitary Landfills
Typical Horizontal Well & Gravel Pit Detail

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\WC_LFG_Exp_FY10-11_Through_FY1314
FILE:	bl_lo_Horiz_Well.dtl11_12.dgn
SHEET:	7 OF 9



WELL #	DETAIL	A	B	C	D	PLATE SIZE
Example	DEEP	120	40	40	40	
Example	SHALLOW	80	40	40		

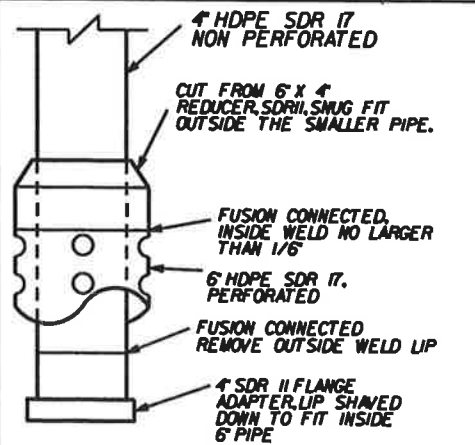
Note: No well to be deeper than 120 feet deep

LAMB CANYON DRILLING TABLE
SCALE: NONE
E
GB

WELL #	DETAIL	A	B	C	D	PLATE SIZE
EXAMPLE	DEEP	105	35	40	30	
EXAMPLE	SHALLOW	75	35	40		

Note: No well to be deeper than 120 feet deep

BADLANDS DRILLING TABLE
SCALE: NONE
F
GB



NOTES:

SECTION VIEW

TELESCOPING JOINT
NTS
G
GB

- NOTES:
- IF THE LANDFILL BOTTOM IS ENCOUNTERED DURING DRILLING, THE CONTRACTOR SHALL BACKFILL THE HOLE TO AN ELEVATION THREE FEET ABOVE THE LANDFILL BOTTOM WITH BENTONITE.
 - NO WELD SEAM OR OTHER OBSTRUCTION SHALL BE PRESENT ON THE SOLID 4" PE PIPE THAT MIGHT HINDER IT'S MOVEMENT IN THE TELESCOPING JOINT FOR A DISTANCE OF 15' ABOVE THE JOINT. HOLD PIPE VERTICAL DURING BACKFILL.
 - WELL CONSTRUCTION DIMENSIONS ARE SHOWN ON DRILLING TABLE ON THIS SHEET.
 - DURING DRILLING, A SCAQMD APPROVED EMISSION CONTROL BOX SHALL BE PLACED OVER THE WELL-HOLE TO COLLECT LANDFILL GAS.
 - ACTUAL WELL DIMENSION WILL DEPEND ON WELL DRILLING PROFILE AND SHALL BE DETERMINED BY FIELD ENGINEERS ON SITE.
 - THE CONTRACTOR SHALL MAINTAIN A LOG FOR EACH HOLE DRILLED PROVIDED BY THE ENGINEER.
 - DRILLING SHALL BE PERFORMED ACCORDING TO THE APPLICABLE CONDITIONS OF THE SCAQMD PERMIT TO CONSTRUCT.

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	VTE
					DRAWN BY:	VTE
					CHECKED BY:	MDH
					DATE:	March 11, 2011
					DATE OF PHOTOGRAPHY:	NA
					PENQUEUE:	laser

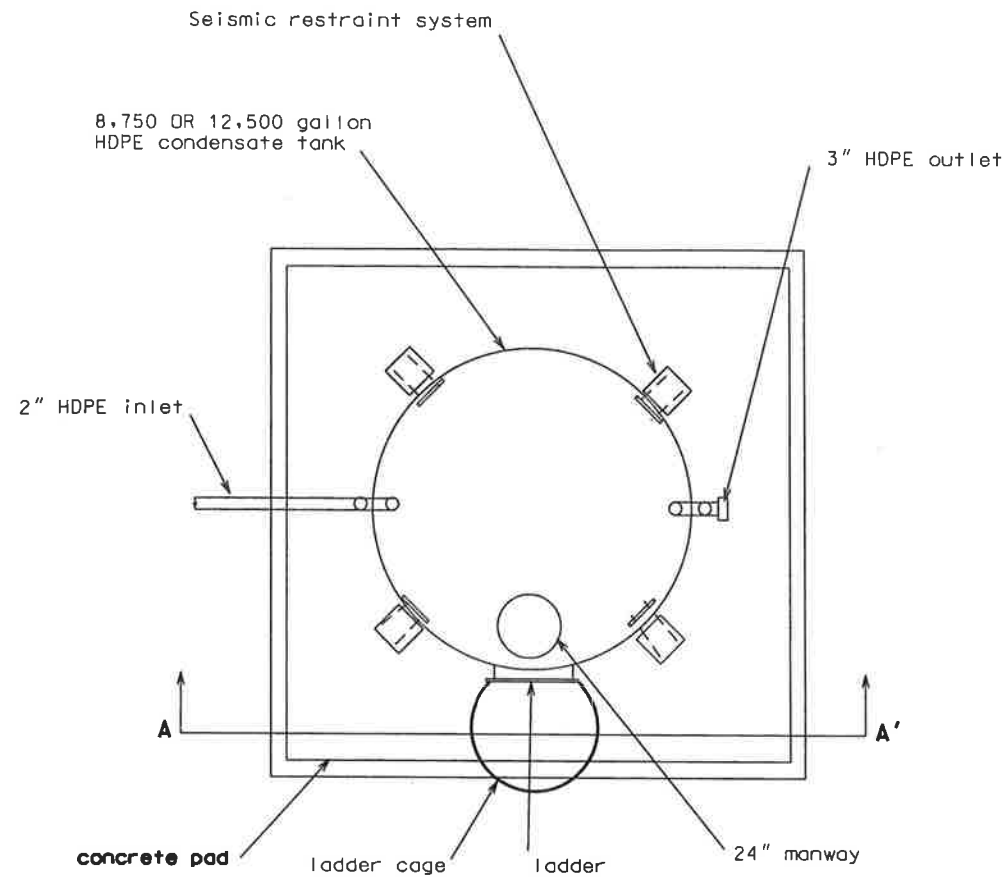
Riverside County
Waste Management Department
Hans W. Kerndt, General Manager/Chief Engineer



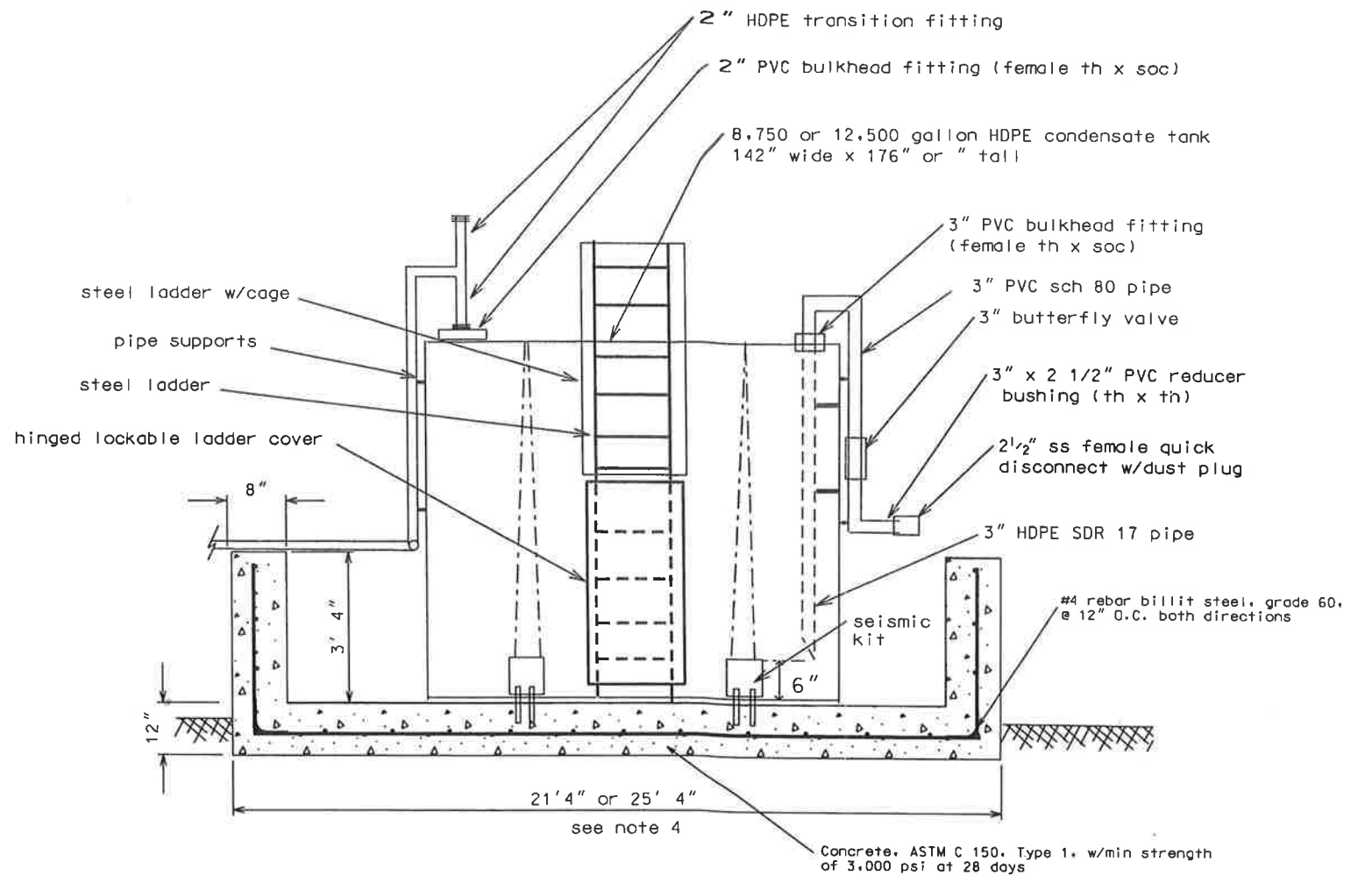
Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills

Typical Vertical Well Detail

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PWC_LFG_Exp_FY11-12_through_FY1314
FILE:	typical vertical well detail 11_12.dgn
SHEET:	8 OF 9



CONDENSATE TANK PLAN VIEW **A**
NTS **G9**



CONDENSATE TANK AND CONCRETE STRUCTURE DETAIL (SECTION A-A) **B**
NTS **G9**

- Note:
- 1.) Seismic restraint system and ladder to be installed per manufacturers instructions.
 - 2.) Seismic restraint system design and installation instructions shall be stamped by a California registered engineer
 - 3.) Contractor to over-excavate 24" and recompact soil before pouring structure
 - 4.) 21' 4" dimension for 8,750 gallon tank, 25' 4" dimension for 12,500 gallon tank

NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	BY	CHECKED BY:	BY	DRAWING DATE:	PHOTO DATE:

Riverside County
 Waste Management Department
 Hans W. Rierkamp, General Manager / Chief Engineer

G9

Construction of Landfill Gas Collection System
 Expansion for Fiscal Year 2011/2012 through
 Fiscal Year 2013/2014 at the
 Badlands and Lamb Canyon Landfills
Concrete Structure & Tank Detail

SCALE:	NTS
SERVER:	wastevib-8
DIRECTORY:	c:\projects\landfill\gas\expansion
DIRECTORY:	PVC LFG Exp.FY 11/12 through 13/14
FILE:	11-10-13 csmr.concrete tank structure.dwg
SHEET 9 of 9	

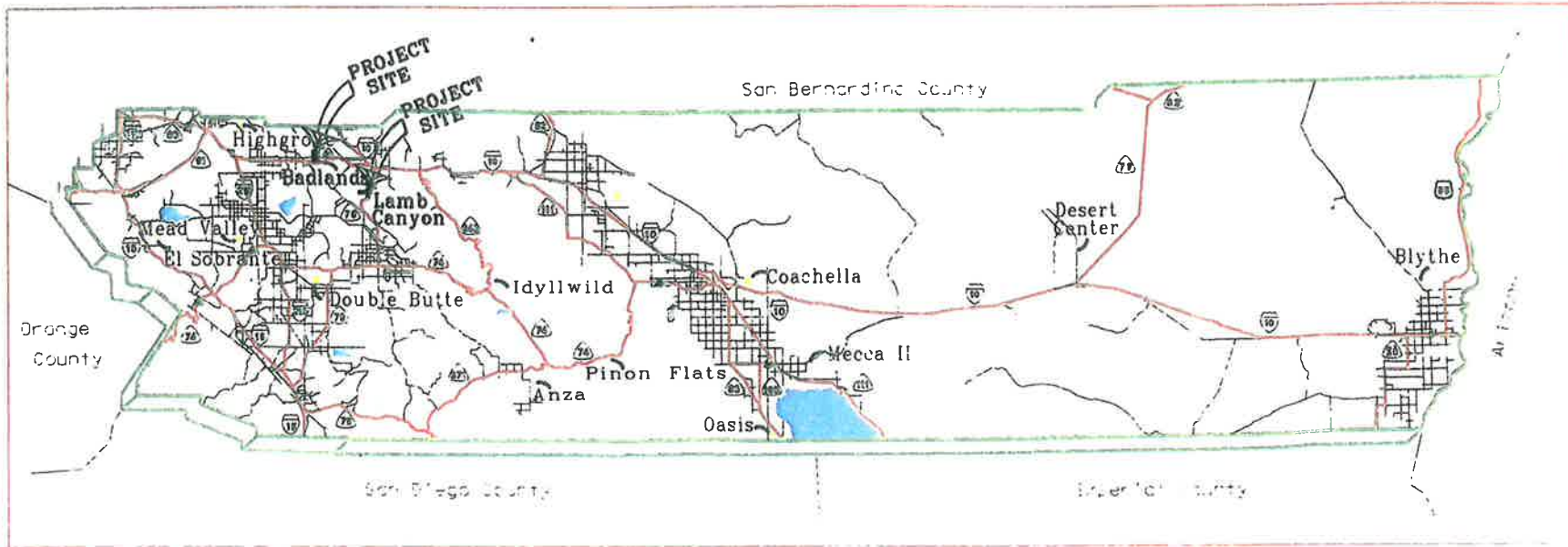
PLANS FOR THE CONSTRUCTION OF
LANDFILL GAS COLLECTION SYSTEM
EXPANSIONS FOR FISCAL YEAR 2011/2012
THROUGH FISCAL YEAR 2013/2014
AT THE BADLANDS AND LAMB CANYON LANDFILLS
JUNE 2011

PREPARED BY
WASTE MANAGEMENT DEPARTMENT
HANS W. KERNKAMP, GENERAL MANAGER/CHIEF ENGINEER
14310 FREDERICK STREET
MORENO VALLEY, CALIFORNIA 92553
TEL. (951) 486-3200 FAX (951) 486-3250



Riverside County

Waste Management Department



LOCATION MAP
N.T.S.

INDEX OF DRAWINGS	
SHEET NO.	TITLE
G1	General Notes and Legends
G2	Project Vicinity Maps
G3	Badlands Landfill Site Map
G4	Lamb Canyon Landfill Site Map
G5	Horizontal Well to Lateral and Gas Well Assembly Details
G6	Lateral and Header Detail
G7	Typical Horizontal Well & Gravel Pit Detail
G8	Typical Vertical Well Detail
G9	Concrete Structure and Tank Detail

FILL PATTERNS

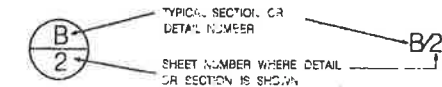
	ASPHALT
	FINAL COVER BLENDED MATERIAL (UPPER 4")
	CONCRETE
	EXISTING EARTHEN MATERIAL
	GROUTED RIP-RAP/OVERSIZE ROCK
	REFUSE
	EXISTING CLEAN DAILY COVER MATERIAL
	CLASS 1 AGGREGATE BASE ACCESS ROAD
	NON-SELECT FILL
	ON-SITE DAILY COVER MATERIAL STOCKPILED SOURCE

ABBREVIATIONS

AC	ASPHALT CONCRETE
APPROX	APPROXIMATE
BC	BEGINNING OF CURVE
BVC	BEGINNING OF VERTICAL CURVE
CL	CENTER LINE
CLF	CHAIN LINK FENCE
Δ	CURVE DELTA
E	EASTING
EC	END OF CURVE
EL	ELEVATION
EVC	END OF VERTICAL CURVE
F	FILL
FL	FLOW LINE
GB	GRADE BREAK
HDPE	HIGH DENSITY POLYETHYLENE
HP	HIGH POINT
INV	INVERT OF PIPE CHANNEL ETC
L	LENGTH OF CURVE
N	NORTHING
N.T.S.	NOT TO SCALE
PVC	POLYVINYL CHLORIDE
R	RADIUS
RC	REINFORCED CONCRETE
RCB	REINFORCED CONCRETE BOX
RCFC	REINFORCED CONCRETE CURB
RP	RADIUS POINT OF CURVE
SDR	STANDARD DIMENSION RATIO
SIM	SIMILAR
STA	STATION
T	TANGENCY
TDA	TIRE DERIVED AGGREGATE
TYP	TYPICAL
TOP	TOP OF SLOPE
TCE	TOE OF SLOPE

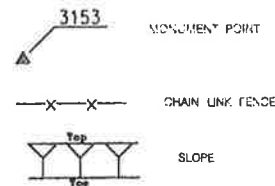
GENERAL NOTES

1. Details of construction, materials and workmanship not shown in these drawings shall conform to the pertinent requirements of the Standard Specifications and any applicable Contract Specifications.
2. Contractor shall provide all utilities (water, electrical, and telephone service) as necessary to successfully complete any and all construction activities.
3. All existing utilities such as fences, monitoring wells, pipe lines, gas lines, probes, etc. shall be protected from damage or replaced at Contractor's expense.
4. All existing and proposed dimensions shall be verified by the Contractor prior to starting work. The Department shall be notified of all discrepancies immediately.
5. Topography is developed by digital photogrammetric methods and field topographic survey.
6. Grid ticks are based on North American datum of 1983 (NAD 83) California coordinate system Zone VI NAVD 88 is to be used for all on-site survey work.
7. Topographic features both contours and plan data, are based on: R.C.F.C. photogrammetric mapping dated December 2010.
8. All elevations are in feet, based on U.S.C & G.S. Datum.



Detail Callouts

CONVENTIONAL SYMBOLS



WASTE MANAGEMENT DEPARTMENT

APPROVED		GENERAL MANAGER-CHIEF ENGINEER R.C.E. C-15822
RECOMMENDED		ASSISTANT CHIEF ENGINEER R.C.E. C-51624
RECOMMENDED		PRINCIPAL ENGINEER R.C.E. C-56725
SUBMITTED		SENIOR CIVIL ENGINEER R.C.E. C-83427



NO.	REVISIONS	BY	APPROVED	DATE
	DESIGNED			
	DRAWN BY			
	DATE			March 11, 2011
	DATE OF THIS DRAWING			NA
	PERIOD			later

Riverside County
Waste Management Department
Mark W. Kernkamp, General Manager/Chief Engineer

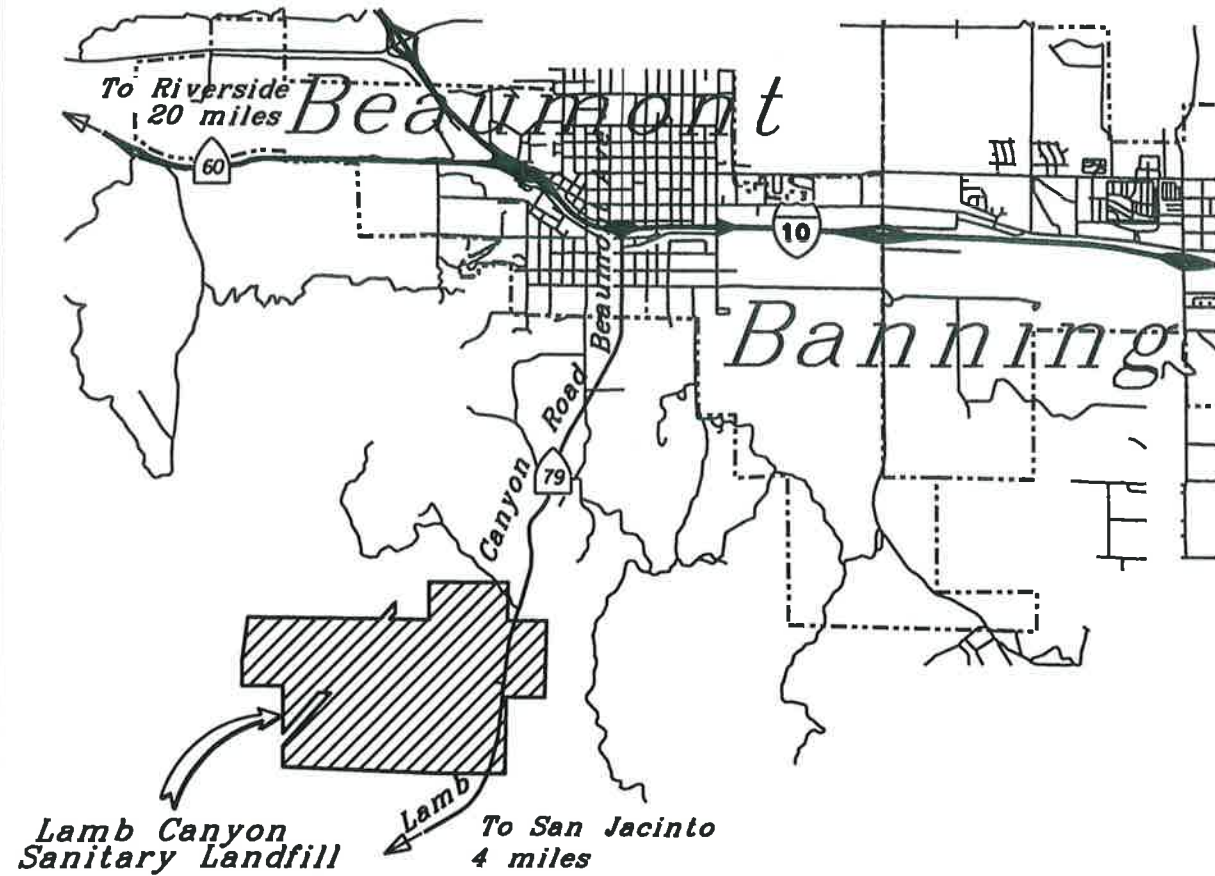
G1

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills
General Notes and Legends

SCALE	N.T.S.
DATE	03/11/11
DRAWN BY	MARK D. HUNT
CHECKED BY	MARK D. HUNT
DIRECTOR	MARK D. HUNT
FILE	WMS/12/15/2011/2012 LC 5-500
SHEET	1 OF 9

Lamb Canyon Sanitary Landfill Vicinity Map

Por. Secs. 21, 28 & 29 T3S R1W S.B.B.M.

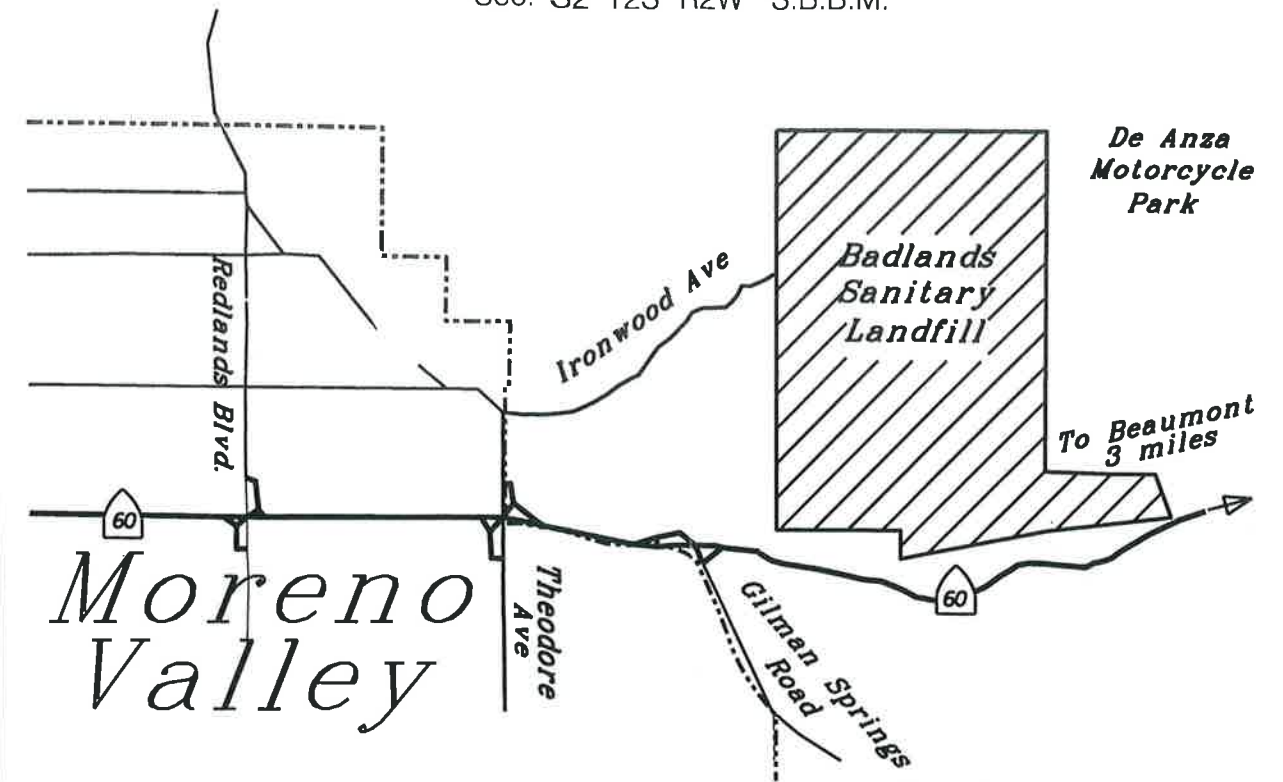


Legend	
Paved Access Roads	—
Freeways (Hwys 60 & I-10)	—
Other Roads	—
City Boundaries	- - -
Sanitary Landfill	▨



Badlands Sanitary Landfill Vicinity Map

Por. Secs. 4 & 5 T3S R2W &
Sec. 32 T2S R2W S.B.B.M.



Legend	
Paved Access Roads	—
Freeway (Highway 60)	—
Other Roads	—
City Boundary	- - -
Sanitary Landfill	▨



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	MDH
					DRAWN BY:	MDH
					CHECKED BY:	MDH
					DATE:	March 15, 2011
					DATE OF PHOTOGRAPHY:	NA
					PERFORMER:	laser

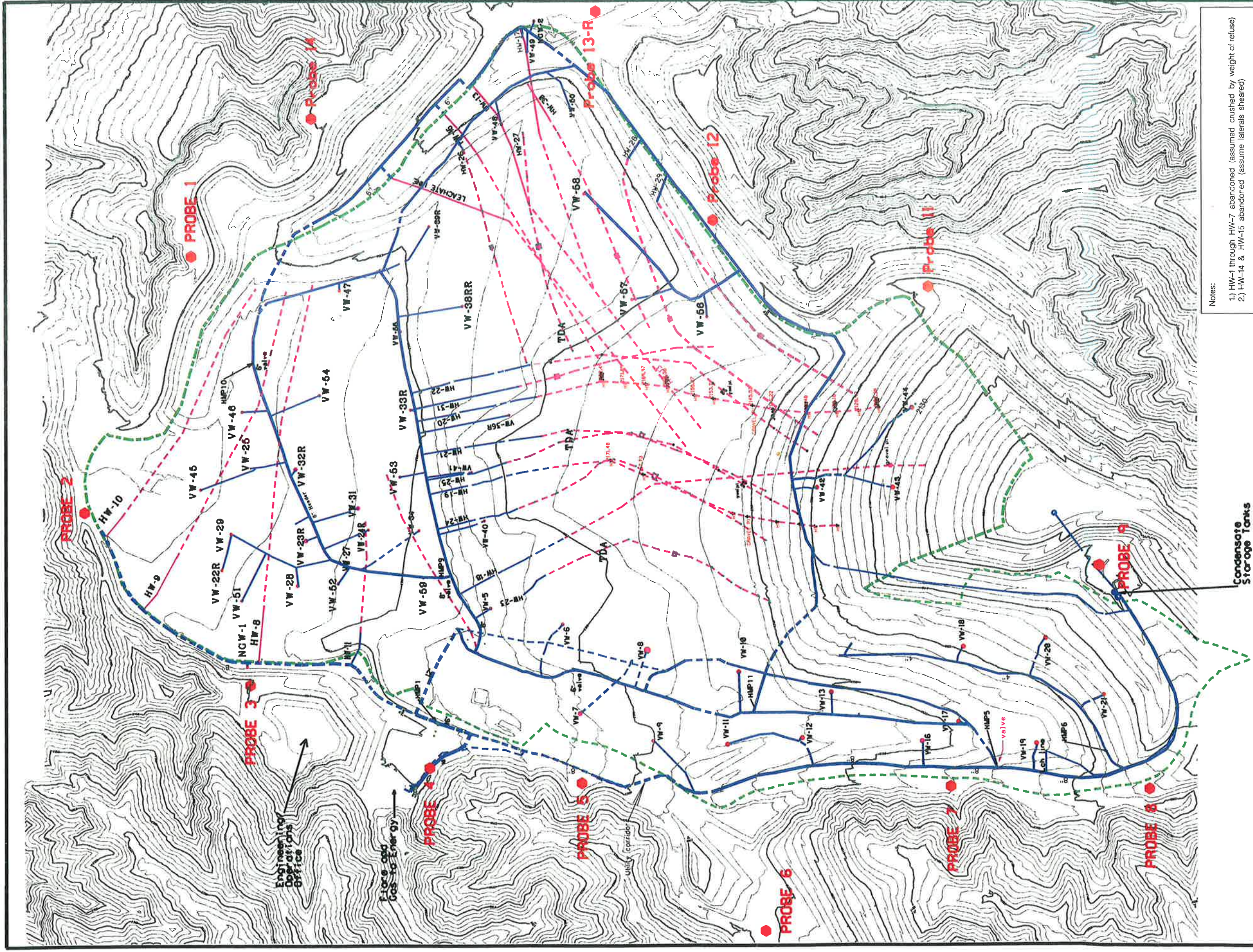
Riverside County
Waste Management Department
Hans W. Kernkamp, General Manager/Chief Engineer

G2

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Sanitary Landfills

Project Vicinity
Maps

SCALE:	NTS
SERVER:	waste-riv-8
DIRECTORY:	environ\sites\badlands\air\gassystem
DIRECTORY:	2011\PWC Exp. FY11-12 through FY13-14
FILE:	Vicinity maps G2 11-12.dgn
SHEET	2 OF 9



Notes:

- 1) HW-1 through HW-7 abandoned (assumed crushed by weight of refuse)
- 2) HW-14 & HW-15 abandoned (assume laterals sheared)

Vertical Well	●
Horizontal Well	- - -
Property Boundary (outside the map)	- - - - -
Footprint	- - - - -
HDPE Header	—
Probe	⬢



NO.	REVISIONS	BY	APPROVED	DATE

DESIGNED BY: ATL
 DRAWN BY: ATL
 CHECKED BY: MDH
 DATE: May 20, 2011
 DATE OF PHOTO: 05/20/11
 PENQUINE: laser



100% WASTE MANAGEMENT DEPARTMENT LOGO

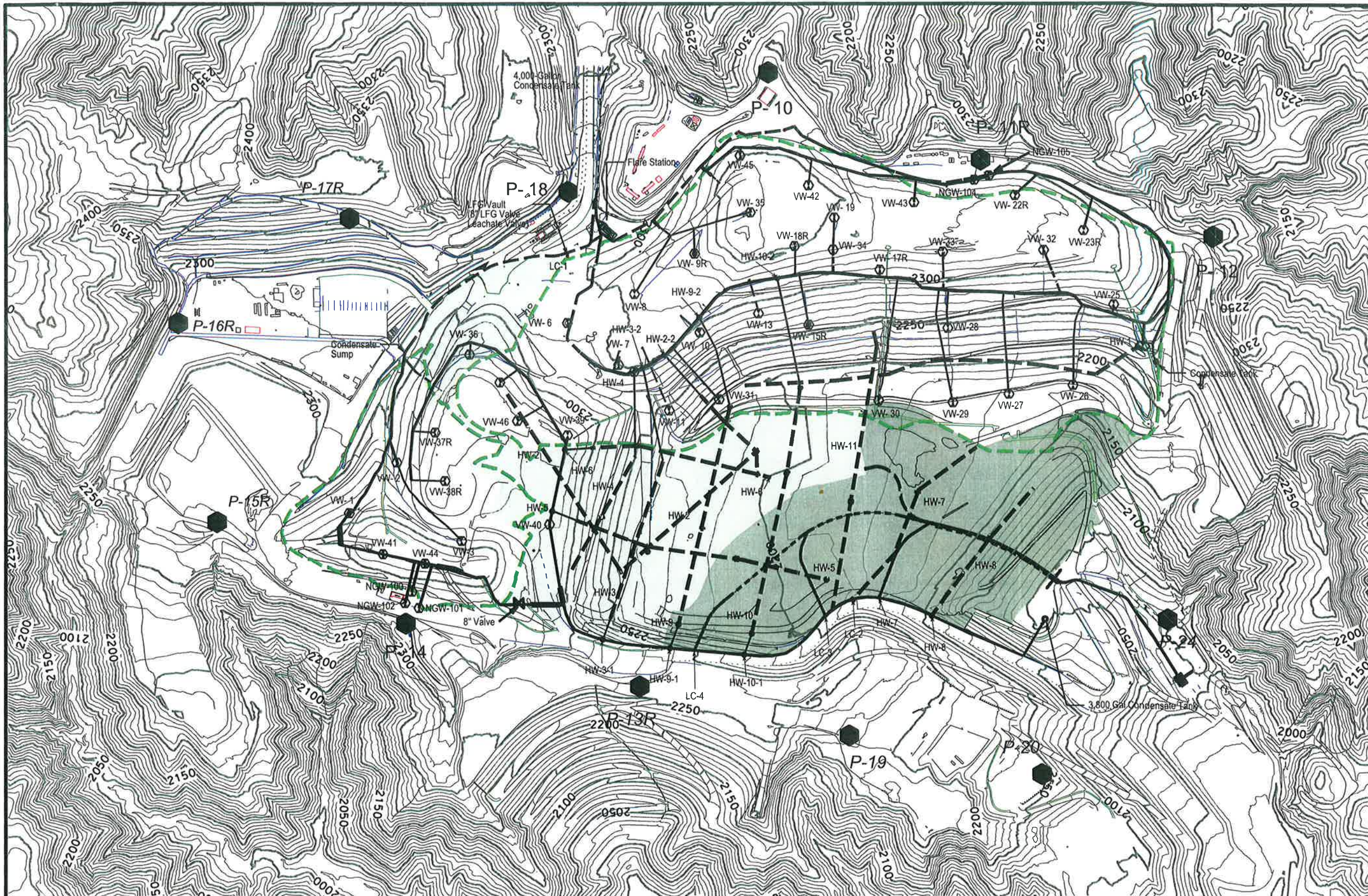


G3

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands and Lamb Canyon Landfills

Badlands Landfill III Site Map

SCALE: 1" = 300'
 SERVER: waste-iv-8
 DIRECTORY: environ\sites\badlands\air\gasystem
 DIRECTORY: 2011\PMC_LFG_Exp_FY11-12 through FY13/14
 FILE: b1site map 0411.dgn
 SHEET: 3 OF 9



Legend

- Phase I Existing Unlined Area - 74 acres
- Phase II Existing Lined Area - 50 acres
- Existing horizontal well
- lateral pipe (above ground)
- lateral pipe (buried)
- 8-inch header pipe (above ground)
- 8-inch header pipe (buried)
- Subgrade header crossing
- Vertical gas well
- Multi-level probe



NO.	REVISIONS	BY	APPROVED	DATE	DESIGNED BY:	TE
					DRAWN BY:	TE
					CHECKED BY:	MDH
					DATE:	MARCH 11, 2011
					DATE OF PHOTOGRAPHY:	NA
					PENQUICK:	laser

Riverside County
Waste Management Department

Scale: 1" = 400'

Datum is mean sea level. Contour interval is 5 feet.

G 4

Construction of Landfill Gas Collection System Expansions for Fiscal Year 2011/2012 through Fiscal Year 2013/2014 at the Badlands & Lamb Canyon Sanitary Landfills
Lamb Canyon Landfill III Site Map

SCALE: 1" = 400'
SERVER: waste-riv-8
DIRECTORY: environ\slites\badlands\lri\gassystem
DIRECTORY: 2011\WC LFG Exp FY10-11 Through FY13/14
FILE: lc site map 0411 all.dgn
SHEET: 4 OF 9



Riverside County
Waste Management Department

Hans W. Kernkamp, General Manager-Chief Engineer

Digital Appendix B
SCAQMD Permit to Operate
Badlands and Lamb Canyon Landfills

Digital Appendix C
Stormwater Pollution Prevention Plan (SWPP)
Badlands and Lamb Canyon Landfills

Digital Appendix D
Riverside County Hazardous Materials
Business Emergency Plans (BEP)
Badlands and Lamb Canyon Landfills

Digital Appendix E
Riverside County Spill Prevention, Control,
And Countermeasure (SPCC)
Badlands and Lamb Canyon Landfills