TECHNICAL PROVISIONS

FOR

DAILY COVER EXCAVATION AND ON-CALL SITE IMPROVEMENTS

AT THE

BADLANDS AND LAMB CANYON SANITARY LANDFILLS

SEPTEMBER 2018

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SECTION 1 - GENERAL

1.1 Introduction

These Technical Provisions are for the excavation, hauling, and stockpiling daily cover material and optional on-call site improvements at the Badlands Landfill (BA) and Lamb Canyon Landfill (LC) in Riverside County, California. This project is designated as "Daily Cover Excavation and On-call Site Improvements at the Badlands and Lamb Canyon Sanitary Landfills" (Project).

The main item of work required by this Project shall include excavation of a minimum of 150,000 and up to 240,000 cubic yards of daily cover material at Badlands to include hauling and stockpiling this excavated material within the designated stockpile locations and limits as shown on the Project Drawings. This work shall be completed within a one-year period from issuance of the Notice to Proceed, during which the contractor shall be required to excavate a maximum of 240,000 cubic yards of material at Badlands in six separate excavation events of 25,000 to 40,000 cubic yards each. The County will contact the Contractor approximately every two months to schedule and coordinate each daily cover excavation event. Prior to each daily cover excavation event, the County will provide specific details to the Contractor regarding the quantity of material to be excavated, location and limits of the excavation and stockpile areas, and current site conditions that may impact the Contractor's operation. The daily cover excavation bid item shall also include all overhead and administration costs for the non-optional items, except mobilization and demobilization as stated in SECTION 3 -MOBILIZATION AND DEMOBILIZATION and SECTION 14 -. Optional on-call bid items of work include but are not limited to: placement of engineered fill, subgrade preparation, earthen berms, silt fences, fiber rolls, concrete or asphalt structures, rock or base roads, refuse excavation, litter removal, 25-foot tall litter fence, construction of percolation basin, and greenwaste application. Typical sections for each optional on-call item and estimated areas of installation are as shown in the Project Drawings. The County shall provide a minimum of one week written advance notice for the intent to begin construction of optional on-call items and a 24-hour final written confirmation. The items will be requested primarily in preparation for rain events in the forecast or as a result of rain-related damage where repairs or new drainage construction is required. Optional on-call items may also be utilized to either adjust or augment the existing surface drainage system as the landfill is filled and topography changes and other items as directed by the County.

Optional on-call bid items shall be utilized at the sole discretion of the County as they are subject to circumstances encountered in the field. Contractor will not be compensated in any way for optional on-call bid items that are not used on the Project.

The County has estimates of total in place quantities for each optional on-call drainage item. However, the final quantity is dependent on an as-need basis. The estimated quantity is for bidding purposes only and actual quantities may vary.

For optional on-call bid items that are utilized, if the final quantity is within 50% to 150% of the estimated quantity, the Contractor shall be paid based upon the unit price stated in each bid item for each optional on-call bid item. For any portion of the final quantity that is greater than 150% of the estimated quantity the contractor shall be paid based upon a contract unit price mutually agreed upon by the County and Contractor. If the final quantity is between 0 and 50%, the Contractor shall be paid based upon a contract unit price mutually agreed upon by the County and Contractor. In no event shall the Contractor be entitled to be paid any different amount based upon the contract documents, Standard Specifications, Greenbook, CalTrans Requirements, or any other source. The County shall request the optional on-call bid items by providing exact material and dimensional details for each item for each request within the set range of materials and dimensions listed in the Contract Documents. If County requests optional on-call bid items outside of the range of dimensions or materials detailed in the Contract Documents, the work shall be executed under Authorized Time and Materials per SECTION 14 - .

All work to be implemented under this contract shall consist of furnishing equipment, superintendence, labor, skills, materials, and all other items necessary for the execution of the Project and shall conform to the Contract Documents for this Project.

The Contractor shall be aware that the BA and LC landfills 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 abide by the landfill site rules (Appendix B) or the directions of the County at all times throughout the duration of the Project.

1.2 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.

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.

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.

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

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.

1.3 Summary of Work

The work to be performed by the contractor under this contract includes furnishing all labor, materials, vehicles, tools, equipment, power, and incidentals necessary for the construction of the Project. The items of work to be performed shall conform to all of the Contract Documents, including but not limited to the General Provisions, Project Drawings, Referenced Specifications and Documents, and these Technical Provisions.

The major features of the work to be performed shall include, but are not limited to:

A. Provide and implement a Site Safety Plan per Section 1.6.1

B. Implement Storm Water Pollution Prevention Plan per Section 2

C. Earthwork per Section 4 of these Technical Provisions (excavation, hauling, and stockpiling daily cover material as shown on the Project Drawings and as directed by the County)

D. Optional On-call bid items per Section 5-13 of these Technical Provisions (Typical sections as shown in the Project Drawings and locations as directed by the County)

1.4 Referenced Specifications and Documents

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

Standard Specifications

The term Standard Specifications is a direct reference to the publication entitled "Standard Specifications for Public Works Construction" (2015 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."

State Standard Specifications
The "State Standard Specifications" are the Standard Specifications of the State of California, Department of Transportation, 2015 edition.

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

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

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

1.5 General Scope Of Work

This project is formatted to meet strict State and Federal NPDES requirements for landfills as administered by the California Regional Water Quality Control Board (CRWQCB), the California Department of Resources Recycling and Recovery (CalRecycle), the Riverside County Department of Environmental Health - Local Enforcement Agency (LEA) and other regulatory agencies. The major features of the work to be performed shall include but are not limited to:

ITEM No.	ITEM OF WORK	SECTION No.
1	Prepare and Implement Site Specific SWPPP for Dirt Haul	SECTION 2 -
2	Badlands Excavation, Hauling, and Stockpiling Daily Cover Material including Overhead and Administration Costs	SECTION 4 -
	Optional On-Call Items	
3	Refuse Excavation and Haul to Active Face	SECTION 4 -
4	Engineered Fill	SECTION 4 -
5a	Construct 1' Tall Earthen Berms with Engineered Fill	SECTION 4 -
5b	Construct 2' Tall Earthen Berms with Engineered Fill	SECTION 4 -
6	Furnish and Install Fiber Rolls	SECTION 5 -
7	Furnish and Install S-Fence	SECTION 6 -
8	4" Thick Asphalt Drainage Structures	SECTION 7 -
9	4" Thick Reinforced Shotcrete Drainage Structures	SECTION 8 -
10	Furnish and Install Crushed Miscellaneous Base	SECTION 9 -

11	Furnish and Install Class II Base	SECTION 9 -
12	Furnish and Install Class III Base	SECTION 9 -
13	Furnish and Install 2"-4" Rock	SECTION 9 -
14	Furnish and Install 3"-6" Rock	SECTION 9 -
15	Greenwaste Slopes and Benches	SECTION 10 -
16	Litter Removal	SECTION 11 -
17	25' Tall Litter Fence	SECTION 12 -
18	Construct 4" Thick Reinforced Concrete Slab Within Existing Basin	SECTION 8 -
19	Construct Shotcrete Access/Drainage Ramp	SECTION 8 -
20	Construct Asphalt Pad and Miscellaneous Structures	SECTION 7 -
21	Construct Reinforced Shotcrete Drainage and Miscellaneous Structures	SECTION 8 -
22	Construct Shotcrete Stairway and Railing	SECTION 8 -
23	Construct Percolation Basin and Appurtenances	SECTION 14 -
24	Authorized Time and Material	SECTION 15 -

1.6 Notice To Proceed

Within five (5) business days of the award of contract by the Riverside County Board of Supervisors, or sooner, the Contractor shall submit all of the following items:

A. Performance Bond and Payment Bond (Instructions to Bidders)
B. Required Certificates of Insurance (General Provisions Section 8.3.)
C. Contractor project specific Public/Site Safety Plan (Technical Provisions Section 1.6.1)
D. Project Specific SWPPP Supplements (Technical Provisions Section 2.1)

Also within five (5) business days of the award of contract by the Riverside County Board of Supervisors, the County will hold a mandatory pre-construction meeting (Technical Provisions Section 1.6.2) to be attended by the Contractor.

The County will not issue the Notice to Proceed before the Contractor submits the Performance Bond, Payment Bond, Certificates of Insurance, Public/Site Safety Plan, and Project Specific SWPPP Supplements, and attends the mandatory pre-construction meeting.

After receipt of the Public/Site Safety Plan, and Project Specific SWPPP Supplements, the County will review them and provide appropriate comments. The Contractor will be required to address all comments from the County and resubmit within five (5) business days.

1.6.1 SITE SAFETY PLAN

Prior to delivering equipment to the construction site, the Contractor shall submit a Site Safety Plan for each site 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 and hauling 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 comply with all applicable health and safety regulations. The Contractor shall take proper safety and health precautions to protect the work, the public, and the County employees. The Contractor shall provide adequate number of portable toilets for its staff within the project's staging area. These portable toilets shall be equipped with secondary containment structures and tie-downs shall be supplied so as to prevent the displacement of the portable toilets during high winds. All sanitary facilities shall include no less than twice-per-week servicing. The Contractor shall provide fire extinguishers and first-aid kits within the vicinity of their work area to provide adequate protection to all personnel anticipated to be onsite. A fire extinguisher shall also be maintained in the construction area at all times. The Contractor shall be responsible for providing all items necessary for health and safety, including but not limited to dust control and personal protective equipment, in accordance with applicable Federal and State regulations.

The Public/Site Safety Plan shall include procedures that address traffic control for approaching, crossing, or traveling along public and landfill access roads between the Offsite Water Source, Equipment Storage/Staging Area, Crushing and Pulverizing Area, Construction Areas and Designated Stockpile according to the California Manual on Uniform Traffic Control Devices (MUTCD) 2014 Edition Revision 3, and as directed by the County. During the period of construction, landfill operations will be conducted in, but not limited to the following areas: the active face and the designated stockpile area. The Public/Site Safety Plan shall include procedures for addressing traffic control along, but not limited to the following project areas: the top deck, construction areas and designated stockpile area. The Public/Site Safety Plan will state that all construction traffic shall not exceed 15 miles per hour when traveling on landfill site access roads used by the public. Public/Site Safety Plan and traffic control plans shall specify County Agencies' right of way for access to haul roads and to Offsite Water Source. Landfill Operation haul roads may change during the course of the Project. As such, Contractor shall submit a traffic control plan and obtain County approval prior to utilizing a specific haul route.

The Site Safety Plan shall 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.

Where necessary, trenches, pits, and other excavations shall be properly sloped, sheathed and braced to furnish safe and acceptable working conditions. Any damage that occurs from earth pressures, slides, cave-ins, or other causes due to failure to provide proper sloping, sheathing 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.

Approved personal fall arrest, personal fall restraint or positioning systems shall be worn by those employees whose work exposes them to falling in excess of 7 1/2 feet from the perimeter of a structure, unprotected sides and edges, leading edges, through shaft ways and openings, sloped roof surfaces steeper than 7:12 (horizontal: vertical), or other sloped surfaces steeper than 40 degrees. Particular attention shall be given to relevant Division of Industrial Safety of the State of California. Said Orders are contained in Title 8 of the California Code of Regulations, Chapter 4, and Subchapter 4. Specific reference is made to Article 24 of said Construction Safety Orders.

The Public/Site Safety Plan shall also address procedure and protocol for employee heat illness protection. When the temperature exceeds 80 degrees Fahrenheit in the heat index chart, at minimum, the Public/Site Safety Plan shall guarantee the employee with the following: access to fresh, cool drinking water throughout the day; access to shade for 5 minutes at a time to rest and cool down; training on how to work safely in the heat, including how to call for emergency services if someone is overcome by heat. Particular attention shall be given to relevant Division of Industrial Safety of the State of California. Said Orders are contained in Title 8 of the California Code of Regulations, Chapter 4, Subchapter 7, and Group 2. Specific reference is made to Article 10 of said Construction Safety Orders, Section 3395 Heat Illness Prevention.

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

The Contractor shall 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.

1.6.2 PRE-CONSTRUCTION MEETING

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

During the pre-construction meeting, the Contractor shall be issued four complete copies of the Contract Documents (which includes four full-sized sets of Project Drawings and

four half-sized sets of Project Drawings). Digital information of the Project Drawings will be made available upon written request from the Contractor. The cost of any additional copies requested shall be deducted from payment to the Contractor.

1.7 Precedence of Contract Documents

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

A. Permits from other agencies as may be required by law
B. Technical Provisions
C. General Provisions
D. Project Drawings (specific details supersede general plan)
E. Standard Drawings
F. Standard Specifications
G. State Standard Specifications

1.8 Working Day Definition

Unless otherwise approved in writing by the County, 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 3:30 PM, including half hour for lunch break, Monday through Friday.

1.9 Holidays

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

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

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

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

1.10 Time of Completion and Liquidated Damages

The Contractor shall complete each daily cover excavation event of 25,000 to 40,000 cubic yards at Badlands within twenty (20) consecutive working days. Upon written notification of a new daily cover excavation event, the contractor shall have five (5) business days to begin daily cover excavation work.

For optional on-call items, the County shall provide a minimum of one week written advance notice for the intent to begin construction and a 24-hour final written confirmation. Without final 24-hour written notification by the County, the work cannot proceed. The number of working days for optional on-call items is to be provided at the time of one week notice. The County may schedule optional on-call bid items to be constructed at both sites simultaneously and the County may schedule optional on-call bid items simultaneous to daily cover excavation events.

In case the daily cover excavation work called for and all the conditions and requirements of the Contract Documents are not completed within the number of working days specified above, liquidated damages of **Five Thousand Dollars ($5,000)** per day for each additional working day required to properly complete the work 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. Liquidated damages for optional on-call bid items shall be as negotiated by the County prior to start of the work.

1.11 Survey Control of Work

The County surveyors will establish external primary survey control points on firm ground outside the limits of the work to be used throughout the construction period for the Contractor's work. Survey control is shown on the Project Drawings. In addition, the County surveyors will make verification surveys as various stages of the work are completed and survey for preparation of pay quantities. The Contractor's surveyor is responsible for setting line and grade for the earthwork and any other related construction activities. The Contractor's surveyors are also responsible for ensuring that all construction conforms to the requirements of the Contract Documents.

1.12 Tests and Inspections

The Contractor shall comply with requests by the County to alter the work sequence 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.

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 Contractor's Qualifications

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

1. Within the last five years, the Contractor shall have successfully completed at least two mass earthwork excavation projects each with a minimum quantity of 250,000 cubic-yards in comparable topographic features as exist at the project sites (that is, with canyons and valleys, and not just flat terrain).
2. Within the last five years the Contractor and/or subcontractor shall have successfully completed an earthwork construction project(s) with at least 10,000 cubic-yards of engineered fill including soil material processing, placement, compaction, and grading per plan.
3. Within the last five years, the Contractor and/or subcontractor shall have successfully completed a construction project(s) with at least 3,000 square feet of reinforced shotcrete drainage structures.
4. Within the last five years, the Contractor and/or subcontractor shall have successfully completed a construction project(s) with installation of at least 30,000 square feet of asphalt concrete structures.
5. Within the last five year, the Contractor and/or subcontract shall have successfully completed a construction project with at least 10,000 tons of CMB, class-II, class-III, or a combination there of including placement, compaction and grading.

With the submittal of the Bid Proposal, the Contractor shall submit for approval by the County documented evidence of satisfaction of the aforementioned qualification.

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.

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

The Contractor shall demonstrate that their 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 their bid response.

1.15 Contractor's Responsibilities

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

A. Applicable health and safety regulations. All activities shall be conducted in such a manner as to avoid hazards and injury or damage to any person or properties.

B. Transportation and access conditions

C. Availability of utilities

D. Surface and subsurface conditions

E. Location, availability, and condition of construction materials

F. Climate

G. On-site soil characteristics of soil to be used in construction, including but not limited to size and type variation, location of excavation and stockpile areas, etc.

H. General construction conditions at the site

I. The Contractor shall submit and adhere to the Storm Water Pollution Prevention Plans (SWPPP) for BA and LC where applicable to prevent erosion and control sediment from excavation areas

J. Spill prevention, proper clean-up and disposal of contaminants, and handling/storage of hazardous materials delivered to or produced on-site from the Contractor's operation

K. 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.

L. The Contractor shall maintain internal access roads utilized by the Contractor during the Project. The Contractor shall not use existing paved roadways or those used for daily landfill traffic.

M. The Contractor shall adhere to the posted speed limits within the landfill sites.

N. The Contractor shall continuously develop and maintain a reasonably graded surface within the Project excavation and stockpiling areas in order to maintain positive drainage condition and prevent ponding.

O. At the end of each 25,000 to 40,000 cubic yards of excavation, the ground shall be smoothed and graded to drain by the Contractor as required by the Contract Documents and as directed by the County.

P. The Contractor shall be aware that the County and its representatives will conduct periodic inspections. The Contractor shall allow access to work areas as requested by the County or its representatives.

Q. Prior to the start of work, or at any other time during the project as reasonably requested by the County, the Contractor shall meet with the County to understand all County operations in progress at LC and BA and the Contractor shall take these County concurrent operations into consideration in performance of the work.

R. Excavation and stockpile areas shall be constructed in accordance with the following design parameters:

   a. Contractor shall excavate material and construct the stockpile within the limits shown in the Project Drawings.

   b. Surfaces of flat areas shall be graded to ensure positive drainage with a minimum grade of 3 percent and finish-graded with a motor grader or approved equal.

   c. Finished side slopes shall be constructed to an inclination not steeper than 1.5:1 (H:V) or as directed otherwise by the County.

   d. Slope height between intermediate benches (or access roads) must not exceed 40 feet for excavation areas.

   e. Total stockpile height must not exceed 25 feet measured vertically from the surrounding landfill grades.

   f. Access roads or benches shall have a minimum width of 15 feet and shall provide access to the top deck of the stockpiles.

   g. Final surface areas shall be finished by track walking (side slope) or smooth graded (flat areas) and left in a uniformly graded condition to prevent or minimize erosion.

Until County final acceptance of the completed work in each excavation event, the Contractor shall retain full responsibility for the work.

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

1.16 Environmental Requirements

The Contractor shall at all time keep the sites neat, tidy, and free of refuse 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) for both Badlands and Lamb Canyon Sanitary Landfills as applicable. 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. Upon award of Contract, the Department shall provide Contractor with a digital copy of the BEP for both BL and LC Sanitary Landfill and up to four (4) hard copies upon request.

Any accidental spills or leaks 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 the Contractor's subcontractors or suppliers. The Site Safety Plan, required under Section 1.15 shall include the procedure the Contractor shall follow in the event there is a spill. The County may require documentation showing proper containment, removal, and disposal of any toxic materials or contaminated soil that the Contractor has introduced or produced on site.

The Contractor shall comply with and supplement, if necessary, the Riverside County Hazardous Materials Business Emergency Plan for Badlands and Lamb Canyon Sanitary Landfills. Contractor may also have to submit a Hazardous Material Business Emergency Plan (HMBEP); it shall be through the California Environmental Reporting System (CERS). The CERS online system can be viewed at the following link: https://cers.calepa.ca.gov/. Once the Contractor has submitted their HMBEP online, they shall provide a copy to the County as part of the Public/Site Safety Plan. 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 Sanitary Landfill, including but not limited to the submittal of a Business Emergency Plan and performance of required inspections, if the Contractor's work requires the onsite storage of petroleum products (as defined in the SPCC Plan) or if the Contractor stores petroleum waste products onsite. Upon award of Contract, the Department shall provide Contractor with a digital copy of the SPCC Plan for the Badlands and Lamb Canyon Sanitary Landfill and up to four (4) hard copies upon request.

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

1.17 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:

1.17.1 NOTIFICATION TO SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT (SCAQMD) UNDER RULE 403, FUGITIVE DUST CONTROL

The Contractor is responsible for implementing the necessary mitigation measures to ensure compliance with regulatory thresholds relating to air quality including but not limited to SCAQMD Rule 403 Fugitive Dust Control Requirements (Appendix A). The County shall have the authority to immediately suspend all construction operations if, in the County's opinion, the Contractor fails to adequately provide for dust control.

The Contractor shall file Form 403-N with the SCAQMD for the construction operation under this contract The Contractor shall provide a copy of the filed Form 403-N for the project to the County prior to commencement of project construction.

In compliance with the requirement of Section (e)1(E) of Rule 403, as amended on June 3, 2005, the Contractor shall identify a SCAQMD-certified dust control supervisor on the project site, or available on-site within 30 minutes, during project work hours.

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

1.17.2 COMPLIANCE WITH CARB OFF ROAD DIESEL VEHICLE REGULATIONS

Landfill operations at Department sites, including BA and LC, are subject to the requirements of the California Code of Regulations (CCR), Title 13, Section 2449, which are enforced by the California Air Resources Board (CaARB). The objective of this regulation is to reduce emissions of diesel particulate matter (PM), oxides of nitrogen (NOx) and other criteria pollutants from in-use diesel-fueled vehicles. Therefore, to ensure compliance with the cited regulations, Contractor must provide proof of compliance with the "CaARB In-Use Off-Road Diesel Vehicle Regulations" currently in effect to include the following:

- Proof of reporting their fleet into CaARB's Diesel Off-road On-line Reporting System (DOORS)
- Proof of compliance with CaARB performance requirements specific to fleet size (Fleet Compliance Snapshot)
- Written Idling Policy
- Requirement for ARB Equipment Identification Number (EIN) labeling on all vehicles

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

1.17.3 STATE WATER QUALITY CONTROL BOARD'S NATIONAL POLLUTION DISCHARGE AND ELIMINATION SYSTEM (NPDES) PERMIT

The County complies with the State NPDES through regular inspections, monitoring, and implementation of Best Management Practices (BMPs) as described in the BA and LC Storm Water Pollution Prevention Plans (SWPPP). The Contractor shall submit a SWPPP pursuant to the Industrial General Permit (IGP), effective July 1, 2015. In order to comply with the requirements of the IGP and the sites' SWPPP, the contractor shall be required to implement minimum BMPs within the excavation and stockpile areas as directed by the County. Any material needed for the BMPs will be provided and installed by the Contractor. This material will include but not limited to fiber rolls, sand bags, and silt fence.

1.18 Equipment Staging Area

An area for the storage of the Contractor's equipment at each site is delineated on the Project Drawings. The staging area shall be accessible to the County so that they may verify the presence and condition of equipment being stored. The stored equipment shall be placed in accordance with the Project Drawings 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 ensure 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.

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

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

1.19 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 and overtime hourly wages paid as defined in Section 7.3.1.1. shall be the percentages that are in effect at the time of the award of contract, as published by the California Department of Transportation Division of Construction in the document titled "Labor Surcharge and Equipment Rental Rates". These labor surcharge percentages shall be utilized throughout the entire duration of the contract.

1.20 Suspension and Resumption of Operations

The Contractor shall suspend construction operations when, in the County's opinion, the conditions for such operations are unsatisfactory due to rain, wind, or any other 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 as directed by the County at the Contractor's expense.

1.21 Diversion and Control of Water

It is anticipated that nuisance or other water, such as rainfall or surface water run-off, may be encountered within the construction site during the period of construction under this contract. The Contractor, by submitting a bid, will be held to have investigated the risks arising from such waters and to have made this bid in accordance therewith. The Contractor shall construct, and maintain all temporary diversion and protective works to divert run-off around the work areas and material storage areas, and to protect persons and property downstream of the work. The County may require the Contractor to implement additional protection measures. Excavation and stockpile areas shall be graded and properly maintained to provide adequate drainage at all times.

The Contractor shall provide berms or other measures as necessary and/or required to prevent run-off from flowing onto completed areas and to avert erosion.

All nuisances or other water shall be disposed of at the Contractor's expense, in a manner that will not damage public or private property, create a nuisance or health menace, and comply with all applicable regulations. The Contractor shall furnish, install, and operate pumps, hoses, pipes, or other equipment of a sufficient capacity to keep all construction excavations free from water until the excavation is backfilled. Water, if odorless and uncontaminated, may be discharged in a manner approved by the County. When required by the County, a means of desilting the water before discharging it shall be provided. Work shall be suspended when the site is wet, muddy, or in any other condition that interferes with proper operation and construction procedures.

The County has a National Pollutant Discharge and Elimination System (NPDES) permit for storm water associated with industrial activity (under which construction activities are covered) and has developed a SWPPP for BA and LC. The Contractor shall comply with all the provisions of each site's SWPPP. The Contractor shall assist and cooperate with County personnel in fulfilling the provisions for construction monitoring requirements.

Payment for complying with this section relating to storm water shall be included in the various items of work, and no additional compensation shall be allowed.

1.22 Dust Abatement

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 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 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.

1.23 Water Supply

The Contractor shall have the option to establish a water source for its operation, or may elect to draw water from the County's offsite water towers at both sites provided that the contractor provides and implements any necessary measures to prevent track-out and drainage issues resulting from its operation. The preventative measures and maintenance of the water tower area may include but not be limited to re-grading the area to ensure positive drainage, furnishing and installing new rock material, cleaning rumble rack sections, and street sweeping if deemed necessary by the County. The County's off site water tower at BA is located at Theodore Street in the City of Moreno Valley, approximately one and half (1.5) miles west of the entrance to the

landfill site, as shown on the Project Drawings. The County's off site water tower at LC is located at 1st Street in the City of Beaumont, approximately three (3) miles north of the entrance to the landfill site, as shown on the Project Drawings. The Contractor shall provide all labor and equipment to collect, load, transport, apply, and dispose water as necessary for dust control, excavation, grading, and other project purposes. Contractor's use of water and/or tower shall not impact landfill operations. Water shall be clean and free from objectionable deleterious amounts of acids, alkalis, salts, or organic materials.

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 Protection of Adjacent Landfill Operations

The Contractor shall be aware that both BA and LC 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 (Appendix - B) or the directions of the County.

The Contractor must obtain in advance the County's written approval for the locations and construction of temporary haul roads. No Contractor's equipment shall be allowed to travel on internal paved access roads or other roads designated for landfill traffic; therefore, all access roads that are proposed to be used by the Contractor's equipment will need to be prepared and maintained by the Contractor and must be pre-approved by the County in writing.

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

END OF SECTION

SECTION 2 - PREPARE AND IMPLEMENT NPDES STORMWATER POLLUTION PREVENTION PLAN

2.1 General

This section covers the preparation and implementation of a project-specific Storm Water Pollution Prevention Plan (SWPPP) by the Contractor as required by the State of California and this contract for construction activities at each site. The SWPPP shall, to the extent feasible, implement and maintain all of the following minimum BMPs to reduce or prevent pollutants in stormwater discharging from project areas of construction:

A. Good Housekeeping
B. Preventative Maintenance
C. Spill and Leak Prevention and Response
D. Material Handling and Waste Management
E. Erosion and Sediment Controls
F. Employee Training Program
G. Quality Assurance and Record Keeping

The SWPPP shall also identify additional site-specific Best Management Practices (BMPs) planned for use on the project at each site where work occurs, and stipulate schedules for ongoing monitoring and maintenance of those BMPs.

After notification of award and prior to the start of any work, the Contractor shall prepare and submit a satisfactory Schedule of Values for all Storm Water Pollution Prevention work. The Schedule of Values will establish unit prices for individual items of work and will form the basis for payment of contract work and will be used to establish payment for any extra work. An acceptable form for the Schedule of Values, representing the minimum level of detail required to quantify the scope of work is included in the Measurement and Payment of this section.

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

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

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

2.2 Execution

The County complies with the State NPDES through regular inspections and monitoring and implementation of best management practices for each site. The County site-specific SWPPP for the Badlands Landfill is available for reference at the Landfill and can be provided digitally upon award of the Contract. After notification of award and prior to start of any work, the Contractor shall prepare and submit to the County a project-specific Storm Water Pollution Prevention Plan (SWPPP) that addresses construction activities at each site and outlines procedures to reduce pollutants (directly or indirectly related to the Contractor's activities) in storm water runoff.

At a minimum, the Contractor will be required to provide street sweeping on paved portions of any haul routes as often as reasonably required by the County. For all street sweeping, vacuuming, and the stabilized construction access, Contractor shall reference the guidelines described in California Stormwater BMP handbook.

2.3 Measurement and payment

The Schedule of Values will establish unit prices for individual items of work and will be the basis for payment of contract work and will also be used to establish payment for any extra work. An acceptable form for the Schedule of Values, which represents the minimum level of detail required to quantify the scope of work is located at the end of this section. The Contractor's Schedule of Values MUST include at a minimum, Items No.1-5. The Contractor shall have the option to add or modify any of the BMP measures, Schedule of Value Item No.s 1-5 of the sample schedule, on

the submitted schedule to meet the requirements for items specified in the contractor's submitted SWPPP. The total cost for the items specified on the contractor's submitted Schedule of Values must match the lump sum bid price in the Contractor's proposal for **Bid Item No. 1 – "Prepare and Implement Site Specific SWPPP for Dirt Haul".** Unit prices shall be based on the costs associated with the preparation, supply, installation, and maintenance of the various items where applicable.

Payment for Schedule of Value Items No. 1 "Prepare, Implement, and Maintain SWPPP Plan" shall be according to the following schedule (also refer to table below):

A. Upon acceptance by the County of the written plan the Contractor will receive 20% of the lump sum bid item. After complete implementation of all initial field measures required by the plan and these Technical Provisions, the Contractor will receive 30% of the lump sum bid item.

B. Contractor will be paid the remaining 50% of the lump sum bid item in progress payments to be estimated based on the remaining number of working days in the contract. Any change to the number of working days will not result in an adjustment to the total lump sum price, as provided in the Schedule of Values.

WORK ITEM COMPLETED	PERCENTAGE OF SCHEDULE OF VALUES ITEM NO. 1 AND NO. 2 TO BE PAID
Acceptance by the County of the written plan	20%
Completed implementation of all initial field measures required by the plan and these Technical Provisions.	30%
Ongoing review and updating of the written plan. Submittal of the required inspection and other documentation. Field compliance with the terms and conditions of the plan and these Technical Provisions.	Remaining 50% to be paid in progress payments throughout project duration

Payment for the other SWPPP related items (BMPs) on the Schedule of Values shall be at the unit price as shown on the Schedule as they are installed. Payment shall be full compensation for the supply, installation and maintenance of each BMP measure. The Contractor shall submit a written plan/drawing showing the quantities and locations of the proposed BMP installations as part of the SWPPP and for the County's approval. Quantities of installed BMPs shall not exceed the quantity shown on the Schedule of Values without prior written authorization by the County. The Schedule of Values is **NOT** to be used as the basis for payment for optional on-call bid items such

as silt fence (S-Fence) and fiber rolls. Those items shall be paid under their respective contracted bid item unit price.

Storm Water Pollution Prevention

Schedule of Values (Sample)

No.	Quantity	Units	Description	Unit Cost	Total Cost
1	1	Lump Sum	Prepare, Implement, and Maintain SWPPP Plan		
2	Contractor to provide quantity _____	Linear Feet	Install and Maintain Gravel Bag Check Dam per Caltrans Detail SC-4		
3	Contractor to provide quantity _____	Linear Feet	Install and Maintain Fiber Roll per Caltrans Detail SC-5		
4	Contractor to provide quantity _____	Linear Feet	Install and Maintain Silt Fence per Caltrans Detail SC-1		
5	Contractor to provide quantity _____	Each	Install and Maintain Stabilized Construction Entrance/Exit per Caltrans Detail TC-1		
TOTAL (must equal lump sum bid amount for Bid Item No. 1 – "Prepare and Implement Site Specific SWPPP for Dirt Haul") **$_____**					

A. The SWPPP associated with optional on-call bid items at BA and LC shall be included in "Authorized Time and Materials" as per SECTION 14 -.

END OF SECTION

SECTION 3 - MOBILIZATION AND DEMOBILIZATION

3.1 General

This contract item shall consist of expenditures for all preparatory work and operations, including but not limited to: those costs necessary for the movement of personnel, equipment, supplies, and incidentals to the project site; and for all other work and operations which must be performed or costs incurred prior to beginning work on the various contract items on the project site as well as the related demobilization costs at the completion of the project. Demobilization shall include but not be limited to cleaning installations and the removal of temporary structures as required by the County. Throughout all phases of construction, including suspension of work and until final acceptance of the project, the Contractor shall keep 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.

3.2 Execution

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, equipment, throughout the duration of construction. All temporary works, such as sanitation facilities, shall fully comply with applicable rules and regulations of governing authorities.

The Contractor shall remove and properly dispose of all refuse from the construction site. 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.

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 1.8 of these Technical Provisions.

3.3 Measurement and Payment

Mobilization and Demobilization costs for daily cover excavation and optional on-call drainage bid items shall be determined for each individual site event and payment shall be executed under Authorized Time and Materials (SECTION 14 -).

END OF SECTION

SECTION 4 - EARTHWORK

4.1 General

This work shall include furnishing all labor, supervision, tools, equipment, and materials necessary to: achieve design grades and elevations for: refuse excavation, constructing earthen berms, engineered fill including bench regrading, and the excavation, hauling, and stockpiling of daily cover material from the designated landfill borrow areas. This work shall include, but is not limited to: clearing, grubbing, excavation, refuse removal and disposal, placing interim cover over exposed refuse, hauling of cover material and placement, subgrade preparation, compaction of engineered fill, and construction of earthen berms to the lines and grades at the locations shown on the Project Drawings and as required by the Contract Documents or as directed by the County.

4.2 Materials

4.2.1 ENGINEERED FILL

Source material for engineered fill shall come from suitable soil excavated by the Contractor for other project bid items, or from designated borrow area for each site, being the Canyon 6 Stockpile area for Badlands and the numbered areas for Lamb Canyon, as shown in the project Drawings. Not until source material from excavation operations on this project is exhausted shall the Contractor utilize source material from the designated borrow area for the placement of engineered fill. The suitability of all earthen materials shall be subject to the acceptance of the County. Fill materials shall not contain brush, roots, sod, or other deleterious or unsuitable materials; and particle size shall not exceed three (3) inches. Organic material and earthen material particles greater than the specified size shall be deposited in a separate stockpile, as directed by the County. Particles greater than the specified size shall be deposited in the designated borrow area, used as source material for uncontrolled fill, hauled as daily cover or as otherwise directed by the County. Organic material shall be deposited at the landfill working face as directed by the County.

4.3 Execution

4.3.1 EXCAVATION

A. This work may include ripping, breaking, and dozing of materials using standard earthmoving equipment up to and including CAT D-9 with single ripper type equipment. Based on a previous subsurface soil investigation, the material within limits of excavation has been determined to be rippable. In the event non-rippable material is encountered, the Contractor shall immediately notify the County. Prior to the removal of non-rippable material, Contractor and County shall mutually decide upon the most acceptable method of removal for this material. This work shall be considered as extra work and therefore will be paid for in accordance with Section 2.7 of the General Provisions entitled "Extra Work". This item

shall also include keeping excavation areas neat and orderly, and completing the excavation to the satisfaction of the County.

B. Areas of excavation shall be graded to drain at all times and necessary precautions shall be taken to control dust and erosion. The Contractor's access roads shall be maintained as necessary for the Contractor and the County, including landfill operation access. Excavations and Stockpiles shall not be constructed beyond the limits and design parameters stated in these Technical Provisions and Project Drawings, unless otherwise authorized by the County in writing. Unauthorized excavation outside the specified excavation limits shall be immediately corrected by backfilling to grade with engineered fill (as directed by the County) at the Contractor's expense.

C. Excavated material shall be transported and placed by the Contractor in the designated Daily Cover Stockpile locations as shown on the Project Drawings and as directed by the County. Surface drainage shall be maintained at all times in the excavation and stockpile areas. Surfaces of flat areas shall be graded to ensure positive drainage with a minimum grade of three (3) percent and shall be finish-graded with a motor grader or approved equal. Final surface within each and all work areas shall be smooth graded and left in a uniformly graded condition to prevent or minimize erosion.

D. Finished side slopes shall be constructed to an inclination not steeper than 1.5:1 (H:V) or as directed otherwise by the County. Slope height within excavation areas must not exceed 40 vertical feet between intermediate benches (or access roads). Maximum slope height for stockpiles must not exceed 25 vertical feet unless otherwise authorized in writing by the County. Access roads or benches shall have a minimum width of 15 feet and shall provide access to the top deck. The Contractor shall observe excavations and stockpiles on a regular basis for signs of instability. Should signs of instability be noted, the Contractor shall notify the County immediately, and shall undertake remedial measures as soon as practicable, subject to the direction and approval of the County. It shall be the Contractor's responsibility to remove all loose materials from the excavated slopes and to maintain the slopes in a safe and stable condition at all times during progress of the work and during any temporary suspension of the work. Cut slopes shall be left in a clean, safe, and stable condition upon completion of the work.

E. Where necessary, trenches, pits, and other excavations shall be properly sheathed and braced to furnish safe and acceptable working conditions. Any damage occurring from excessive earth pressures, slides, cave-ins, or other causes due to failure to provide proper sheathing or bracing, or through other negligence or fault of the Contractor, shall be repaired by

the Contractor at its 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 California Code of Regulations Subchapter 4, Article 6, Section 1540 "Excavations"; whichever is more restrictive.

F. Contractor shall protect in place any biologically sensitive vegetation as directed by the County and existing gas collection pipes. Contractor shall immediately notify the County if a gas collection pipe is damaged before attempting any repairs. Upon authorization from the County, a gas collection pipe damaged by the Contractor shall be immediately repaired by the Contractor and the cost associated with the repair shall be borne to the Contractor. Any ramps installed over gas collection lines shall first be proposed to and accepted by the County in writing.

4.3.2 ENGINEERED FILL

A. Only suitable material encountered within the excavation areas shall be utilized in the engineered fill areas, and all unsuitable material shall be removed and hauled to the designated borrow area designated on the Project Drawings, or as otherwise directed by the County.

B. The Contractor shall restrict earthwork movement and haul routes to the areas within the Project Limits as shown on the Project Drawings. Any earthwork operations requiring activity outside of the Project Limits shall require a written request and written acceptance to and from the County.

C. Compacted engineered fill is required within the Project Limits, as shown on the Project Drawings or as directed by the County. On-site soil shall be placed and compacted in layers as specified herein. The Contractor shall spread soil evenly by mechanical equipment over the prepared subgrade. The Contractor shall place engineered fill material in thickness of loose lifts no greater than eight inches (8") and compacted lifts no greater than six inches (6"). Each lift shall be spread evenly and compacted to obtain a near uniform condition in each layer. In areas of lift thickness greater than specified herein, the Contractor, prior to construction of additional lifts, must complete re-grading and compacting of the surface to the maximum specified lift thickness. The top of each previously compacted layer shall be scarified so that there is no lamination between layers.

D. Engineered fill material shall be compacted to a minimum of 90% relative compaction, based on the laboratory maximum dry density, determined by ASTM D1557. Engineered fill over cut slopes, or scarified natural steep slopes shall be properly keyed into undisturbed bedrock or firm material in accordance with the Contract Documents and as accepted by the County.

E. All general on-site soil material used for engineered fill shall have a

moisture content between 2% below and 2% above OMC in accordance with ASTM D1557 or as determined by the County. Additional water may need to be added at any time during construction. The moisture content of the engineered fill materials prior to and during compaction shall be uniform throughout each layer of the material.

F. When the moisture content of the fill material is below optimum, water shall be added until the moisture content is within the limits required to assure an adequate bonding and compaction of all fill material. When the moisture content of the fill material is above the specified limits, the fill material shall be aerated by plowing, disking, blading, or other satisfactory methods until the moisture content is acceptable. All plowing, tamping, blending, disking, or air drying of material is considered incidental to the work and no additional compensation will be allowed. Wetting of materials by rain or artificial means to acceptable moisture content will require mixing or air drying to return this material to the required moisture content. Complying with this requirement is considered incidental to the work and no additional compensation will be allowed.

Surfaces of all slopes shall be finished by track walking with Dozer-type equipment or approved equal by the County Representative in the field and left in a uniformly graded condition. Surfaces of flat areas shall be finish graded with a motor grader or approved equal.

4.3.3 SUBGRADE AND FINISHED GRADE PREPARATION

All work areas within the Project Limits shown on the Project Drawings shall be evaluated and accepted by the County to verify satisfactory completion of subgrade preparation including clear and grub work, penetration of the excavation into firm natural soils, and removal of all unsuitable materials.

Unless otherwise noted or required, areas where engineered fill is to be placed, or in other areas where unsuitable materials have been removed and where the surface is judged to be loose or otherwise unsuitable, the subgrade or finished grade shall be prepared as follows:

A. The upper six (6) inches of in-situ material shall be ripped, moisture-conditioned, and re-compacted to a minimum of 90 percent relative compaction, at a moisture content range between 2% below optimum moisture content (OMC) and 2% above OMC in accordance with ASTM D1557 or as determined by the County.

B. The compacted surface shall be scarified to provide a good bond between the foundation material and the subsequent fill material, as appropriate.

C. Areas of hard or dense, natural soil identified by the County shall be left

undisturbed.

4.3.4 EARTHEN BERMS

A. The subgrade for Earthen Berm shall be firm, stable and unyielding, and contain no loose material as determined by the County. The subgrade shall adhere to the elevations and cross sections shown on the Project Drawings or as directed by the County.

B. The Earthen Berm shall be compacted to a minimum of 90% relative compaction.

C. Contractor shall provide moisture conditioning to earthen materials used for berm construction, and shall maintain adequate moisture throughout berm construction as deemed acceptable to the County.

4.3.5 LANDFILL BENCH REGRADING

A. This work shall optimize longitudinal and transverse fall with these bench areas for drainage purposes as provided in the Project Drawings and as directed by the onsite County representative.

B. Areas requiring engineered fill shall be finished as specified in Section 4.3.2.

C. The Contractor shall protect in place gas collection pipes that cross the benches. Contractor shall immediately notify the County if a gas collection pipe is damaged before attempting any repairs. Upon authorization from the County, gas collection pipe damaged by the Contractor shall be immediately repaired by the Contractor and the cost associated with the repair shall be borne to the Contractor.

D. In areas of cut and subgrade preparation, the County may require the Contractor to pothole for gas collection pipes starting at the daylight location of the pipe on the toe side of the bench. If it is determined the work cannot be completed without leaving a 12" buffer for the gas collection pipe, the Contractor shall inform the County immediately and install a deeper trench across the bench at a minimum 8% slope to accommodate the gas collection pipe.

4.3.6 PLACEMENT OF ADDITIONAL COVER ALONG THE TOP DECK

A. This work shall include the placement of an additional six-inches (6") of

cover along the top deck or as directed by the onsite County representative. County may limit the placement of uncontrolled fill to only areas of exposed refuse. Contractor shall tie-in daylight grading from the placement of additional cover to provide positive drainage. When tie-in daylight grading approaches existing gas collection pipes, Contractor shall place uncontrolled fill beneath the existing gas collection pipes and maintain the existing grade for the gas collection lines.

B. The Contractor shall restrict earthwork movement and haul routes to the areas within the Project Limits as shown on the Project Drawings. Any earthwork operations requiring activity outside of the Project Limits shall require a written request and written acceptance to and from the County.

C. Uncontrolled fill material shall be compacted to a minimum of 85% relative compaction, based on the laboratory maximum dry density, determined by ASTM D1557.

D. Surfaces of all slopes shall be finished by track walking with Dozer-type equipment or approved equal by the County Representative in the field and left in a uniformly graded condition. Surfaces of flat areas shall be finish graded with a motor grader or approved equal.

E. Prior to the Contractor commencing excavation in the designated borrow area for source material for uncontrolled fill, the County shall perform a pre-excavation survey of the area and delineate the limits for the area of excavation. Contractor shall immediately contact the County once excavation for uncontrolled fill has been completed so the County may conduct a post-excavation survey. Soil excavated outside the delineated limits designated by the County will not be paid for and the expense due to the work shall be borne by the Contractor.

F. Contractor shall protect in place existing gas collection pipes. Contractor shall immediately notify the County if a gas collection pipe is damaged before attempting any repairs. Upon authorization from the County, gas collection pipe damaged by the Contractor shall be immediately repaired by the Contractor and the cost associated with the repair shall be borne to the Contractor. Any ramps installed over gas collection lines shall first be proposed to and accepted by the County in writing.

4.3.7 REFUSE REMOVAL, DISPOSAL, AND INTERIM COVER

A. Refuse or soil co-mingled with refuse may be encountered during excavation within the limits of the landfill footprint; however, it is possible that refuse may also be encountered in any excavation area within the Project Limits shown on the Project Drawings.

B. The Contractor shall remove interim cover soil, refuse, or soil co-mingled with refuse encountered during excavation from within the Project Limits shown on the Project Drawings.

C. Excavated interim cover soil that does not contain co-mingled refuse or has been deemed suitable by the County may be used as source material for engineered fill and other miscellaneous sources as listed in Section 4.3.1.

D. Contractor shall haul excavated refuse and soil co-mingled with refuse to the landfill working face and cover exposed refuse with one-foot (1') of clean earthen cover material as directed by the County.

E. If the cover material placed over refuse is to act as subgrade for engineered fill, a drainage structure, etc. Contractor shall prepare the cover soil as described in Section 3.2.4.

F. At the end of the workday, Contractor shall cover all refuse surfaces and may not allow refuse surfaces to be exposed overnight. If refuse excavation to design grade has not been completed by the end of the workday, Contractor may cover the refuse surface with: six-inches (6") of cover soil or alternate daily cover including but not limited to: six-inches (6") of process greenwaste material, tarps or approved equal.

G. Recognizing the primary importance of public and landfill worker safety in and adjacent to this area, Contractor shall coordinate proposed haul routes, timing, duration, and other related factors with the County prior to each planned haul sequence to the landfill working face.

H. In the event the County or Contractor suspects any excavation material from the landfill is hazardous (as defined by CalRecycle or the Local Enforcement Agency), the Contractor shall stockpile the suspect material in a location separate from the rest of the excavated material. The Contractor shall immediately notify the County if excavation material is suspected to be hazardous. The County will make the appropriate analyses to determine if the suspected hazardous material is hazardous by CalRecycle or LEA definition. The Contractor shall dispose of determined hazardous material in the hazardous waste disposal site designated by the County. The Contractor shall be compensated for disposal of such hazardous waste. This work shall be considered as extra work and therefore; will be paid for in accordance with Section 2.7 of the General Provisions entitled "Extra Work". (Any hazardous material generated by the Contractor, including but not limited to spills or leaks during routine equipment maintenance or any spills caused by any of the Contractor's subcontractors or suppliers, shall be properly disposed of at the Contractor's expense as stated in the Contract Documents.)

I. The County is able to excavate refuse at Badlands Landfill per their Title V Permit obtained from South Coast Air Quality Management District (SCAQMD). The Contractor must place refuse within the limits of the landfill footprint as shown on the Project Drawings; and the Contractor shall also comply with all requirements of the SCAQMD permit conditions (i.e., daily cover, transportation, dust suppression, etc.) at any time refuse is encountered. The requirements of SCAQMD Title V Permit Rule 1150 Landfill Excavation Management Plan and associated conditions are included in Appendix C. The Contractor shall address this work in the Site Safety Plan submittal Section 1.15. The County will provide required personnel to monitor the activities in accordance with the SCAQMD Title V Permit.

4.4 Measurement And Payment

A. The last available ground topography for the sites were generated from a combination of an aerial flight survey completed in late 2015 and a conventional ground survey method completed in April 2018. Due to the ongoing landfill operations, this composite ground topography will not reflect the actual field conditions at the time of award of this contract. Because of this, and since the ongoing landfill activities within the project limits will continue up to the award of this contract and issuance of the Notice to Proceed, all earthwork quantities in the "Contractor's Proposal" are only estimates which have been primarily determined by using the aforementioned composite ground topography. However, in order to generate an updated ground topography contour map which will be used as the base map (or pre-construction ground) for this project, the County plans to perform an updated ground survey within any disturbed areas immediately before the issuance of

the Notice to Proceed and the commencement of this project. This survey will be used to generate an updated ground topography contour map (pre-construction ground contours) that will be used to determine the final pay quantities for all applicable bid items.

B. Unless otherwise stated, the final measurement of all earthwork quantities for the various layers shall be calculated to the nearest cubic yard or the nearest square foot based only upon comparison of pre-construction and post-construction surfaces of the project work. These surfaces shall be established by a combination of conventional ground surveying done by the County and aerial flight surveys of the project work area. Unless otherwise stated, the surface for any layer which will be covered by subsequent layers shall be established by ground surveying. The surface for any layer which will not be covered shall be established by aerial flight survey. Final volumetric calculation of earthwork quantities for payment purposes shall then be performed by the County based upon the resulting Digital Terrain Models (DTM) using the triangle volume method. It should be noted that different methods may be used by the County for determining quantities for progress payments. However, the earthwork quantities used for progress payments will be adjusted at the completion of the project based upon the final measurement method stated in this paragraph.

C. Allowable deviation from design grades shown on the Project Drawings shall be ± 0.10 feet on all benches, access roads, and subgrades within the project limits at each site; + 0.10 feet for additional cover over exposed refuse and ± 0.25 feet for all remaining areas within the project limits. Limits for measurement of the excavations and fills shall be to the lines and grades as shown on the Project Drawings or as directed by the County. No additional compensation will be given for deviations above the lines and grades shown on the Project Drawings or as directed by the County, even if within the allowable tolerance. No additional compensation will be given for removal and re-compaction of material that does not meet the specifications described in this section.

D. No additional compensation will be allowed for removal, reprocessing, or re-compaction of material not meeting the requirement of the Contract Documents. No payment shall be made for excavation or fill outside the limits as shown on the Plans.

E. **The measurement of the final quantity for Bid Item No. 2 "Excavation, Hauling, and Stockpiling Daily Cover Material including Overhead and Administration Costs"** shall be based only on the total excavation quantity as determined by comparing the pre and post construction ground surfaces within the borrow area of the designated borrow area limits in the project. The pre-construction ground surface shall be established by a combination of conventional ground survey and aerial flight survey, and the post-construction

ground surface for this work shall be established by a combination of conventional ground surveying and/or aerial flight survey. **Payment** for excavation and transportation of material to the landfill operation for daily cover shall be made based on the unit price per cubic yard for excavation, as stated in the Contractor's Proposal, **Bid Item No. 2** and shall constitute full compensation to the Contractor for all work related to the excavation and transportation of daily cover including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; excavating, hauling, loading, and any other requirements by the Contract Documents for the transportation of daily cover from the designated borrow area to the landfill operation area and for all overhead and administration costs.

F. **The measurement of the final quantity for Optional Bid Item No. 3 "Refuse Excavation and Haul to Active Face"** shall be determined in the refuse excavation area by comparing the County-surveyed initial encountered refuse surface and the County-surveyed refuse excavation final surface within the approximate limits as shown on the Project Drawings. The Contractor, therefore, shall notify the County as soon as refuse is encountered during excavation and in writing a minimum of two (2) days prior to excavation within the known landfill footprint limits as shown on the Project Drawings. Contractor shall allow two (2) working days for the County to complete necessary survey work. Establishing these surfaces and measuring the final quantity shall be performed by the County pursuant to the aforementioned method of calculation. **Payment** for refuse excavation and disposal shall be at the contract unit price per cubic yard as stated in **Optional Bid Item No. 3,** and shall constitute full compensation to the Contractor for all work related to refuse excavation and disposal (within the designated active landfill unit area) including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; performing pioneering, clearing, grubbing; grading, re-grading, excavating, over-excavating, placing a minimum of one-foot (1') of clean interim cover over the exposed refuse surfaces, shaping, preparing, compacting, hauling, loading, Contractor surveying, compliance with all regulatory permits and conditions (including the SCAQMD Title V Permit Rule 1150 Landfill Excavation Management Plan), construction of temporary haul roads for refuse excavation and disposal in accordance with the Contract Documents.

G. **The measurement of the final quantity for Optional Bid Item No. 4 "Engineered Fill"** shall be based on comparison of the original ground surface (pre-construction ground) and/or County-surveyed excavated subgrade surface and the County-surveyed ultimate surface or filled subgrade surface. The Contractor shall allow two (2) working days for the County to complete necessary surveying work. Establishing these surfaces and measuring the final quantity shall be performed by the County pursuant to the aforementioned method of calculation. **Payment** for excavation, subgrade preparation and placement of engineered fill shall be made based on the unit price per in-place

cubic yard, as stated in the Contractor's Proposal, for **Optional Bid Item No. 4,** and shall constitute full compensation to the Contractor for all work related to the excavation, transportation, and preparation of material including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; excavating, hauling, loading, moisture conditioning, compacting, grading, shaping, and any other requirements by the Contract Documents. This item may include bench regrading or other grade preparation unrelated to surface drainage requirements already included in other bid items.

H. **The measurements of the final quantity for Optional Bid Items No. 5a "Construct 1' Tall Earthen Berm with Engineered Fill" and No. 5b "Construct 2' Tall Earthen Berm with Engineered Fill"** shall be determined by the County based on field measurements of the axial length (linear feet) of the earthen berm constructed at the location and to the dimensions shown on the Project Drawings. **Payment** for the construction of earthen berm shall be at the contract unit price per linear foot as stated in the Contractor's Proposal, **Optional Bid Items No. 5a and No. 5b** and shall constitute full compensation to the Contractor for all work related to the construction of earthen berms in the project including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; excavating, hauling, loading, moisture conditioning, compacting, grading, shaping, surveying, construction of temporary haul roads, and any other requirements by the Contract Documents for the construction of earthen berms.

I. The Contractor is notified that shrinkage of fill materials is expected and the Contractor's unit price shall take into consideration additional material required (due to shrinkage) to complete Engineered Fill Work in accordance with the Contract Documents.

END OF SECTION

SECTION 5 - FIBER ROLLS

5.1 General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for the construction of fiber rolls at locations shown on the Project Drawings or as directed by the County.

5.2 Submittals

The Contractor shall submit product data sheet, and manufacturer's application instructions for all materials to the County for approval.

5.3 Materials

A. Fiber roll shall be a manufactured roll of rice or wheat straw, wood excelsior, or coconut fiber encapsulated within a photodegradable plastic or biodegradable jute, sisal, or coir fiber netting. The netting shall have a minimum durability of one year after installation. The netting shall be secured tightly at each end of the roll. Rolls shall be between 0.6 feet and 1 foot in diameter. Rolls between 0.6 feet and 0.8 feet in diameter shall have a minimum weight of 1.17lb/ft and a minimum length of 18 feet. Rolls between 0.8 feet and 1 foot in diameter shall have a minimum weight of 3.3lb/ft and a minimum length of 9 feet.

B. Wood stakes shall be a minimum of ¾" x ¾" x 24" in size and shall be untreated fir, redwood, cedar, or pine and cut from sound timber. They shall be straight and free of loose or unsound knots and other defects which would render them unfit for the purpose intended.

5.4 Execution

Fiber rolls shall be installed as follows:

A. Furrows shall be constructed to a depth between 2" and 4", and to a sufficient width to hold the fiber roll. Adjoining fiber rolls shall be overlapped between 6" to 12". Stakes shall be installed 2 feet apart along the length of the fiber rolls and stopped at 1 foot from each end of the rolls. Stakes shall be driven to a maximum of 2" above, or flush with the top of the rolls.

B. The bedding area for the fiber rolls shall be cleared of obstructions including rocks, clods and debris greater than 1" in diameter before installation.

C. Fiber rolls shall be placed along the edges of drainage structures, parallel to contours along decks and along the toe of slopes as shown on the Project Drawings.

D. Fiber rolls shall be installed before application of other erosion control or soil stabilization materials in the same area.

5.5 Measurement and Payment

The measurement of the final quantity for Optional Bid Item No. 6 "Furnish and Install Fiber Rolls" shall be determined by the County based on field measurements of the axial length (linear feet) of fiber rolls installed at the locations specified by the County and to the dimensions shown on the Project Drawings. Joining and overlapping of rolls will not be measured, and the roll will be measured as a single installed roll. **Payment** for the fiber rolls shall be at the contract unit price per linear foot as stated in the Contractor's Proposal, **Optional Bid Item No. 6** shall constitute full compensation to the Contractor for all work related to the supply and installation of fiber rolls in the project including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; excavating, hauling, loading, stake anchors, and any other requirements by the Contract Documents for the supply and installation of fiber rolls.

END OF SECTION

SECTION 6 - SILT FENCE

6.1 General

The work covered by this section shall consist of furnishing all necessary labor, materials, equipment, tools, and supervision for the installation of High-Density Polyethylene (HDPE) silt fence including sandbag checkdams at the locations indicated on the Project Drawings or as directed by the County.

6.2 Submittals

The Contractor shall submit product data sheet, and manufacturer's application instructions for all materials to the County for approval.

6.3 Materials

A. The HDPE silt fence shall consist of an HDPE outer jacket with an integrated particle filter. HDPE silt fence shall be a minimum of 20" in height and come in sections of 7-feet in length. The HDPE silt fence shall be S-Fence, SF20, as manufactured by ERTEC Environmental Systems or approved equal.

B. Steel stakes shall be a minimum of 1.5" (width) x 24" (height) x 3/8" (thick) in size or approved equal.

C. Sandbags shall be Duraskrim 8BBR ultra violet resistance or approved equal. Sandbags shall be filled with clean soil and shall not contain brush, roots, sod, or other deleterious or unsuitable materials.

6.4 Execution

HDPE Silt fence shall be installed as follows:

A. Contractor shall furnish and install the HDPE Silt fence in strict conformance with the manufacturer's instructions, Contract Documents, or as directed by the County.

B. Contractor shall excavate anchor trenches in accordance with the Project Drawings and as specified in the manufacturer's instructions.

C. Contractor shall install the HDPE silt fence in slot against the downstream side of the trench wall and backfilled to grade level.

D. Contractor shall provide a minimum of 4-inch overlap between adjacent HDPE silt fence sections. Steel stakes shall be installed on the downstream side of each overlap. Additional stakes shall be installed at the middle of each section. Contractor shall use zip-ties, bailing wires or approved equal to attach the silt fence to the steel stakes.

E. HDPE silt fence shall be placed along the edges of drainage structures as shown on the Project Drawings.

F. Sandbag checkdams shall consist of a total of four (4) sandbags stacked two high as shown in the Project Drawings or as directed by the County. Sandbags checkdams shall be placed behind all installed S-fences and spaced every 25' or as directed by the County.

6.5 Measurement and Payment

The measurement of the final quantity for Optional Bid Item No. 7 "Furnish and Install S-Fence" shall be determined by the County based on field measurements of the axial length (linear feet) of silt fence installed at the locations and to the dimensions shown on the Project Drawings. Joining and overlapping of HDPE silt fence sections will not be measured. **Payment** for the HDPE silt fence shall be at the contract unit price per linear foot as stated in the Contractor's Proposal, **Optional Bid Item No. 7** and shall constitute full compensation to the Contractor for all work related to the supply and installation of HDPE silt fence in the project including but not limited to: furnishing all labor, supervision, materials, tools, equipment, excavating and backfilling trenches, hauling excavated material, steel stake anchors, installing silt fences, sandbag checkdams, and any other requirements by the Contract Documents for the supply and installation of HDPE silt fence.

END OF SECTION

SECTION 7 - ASPHALT STRUCTURES

7.1 General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for the construction of Asphalt Concrete (A.C.) Structures which shall include, but is not limited to: drainage channels, swales, bench crossings, cross gutters, lined earthen berms, and flat pads. The work shall include subgrade preparation and installation of A.C. pavement to the specified lines and grades and at the locations shown on the Project Drawings, as required by the Contract Document, and as directed by the County.

7.2 Submittals

A. The Contractor shall submit Certificates of Compliance for bituminous materials used in asphalt concrete pavement and asphaltic emulsion mixes proposed for this project. The certificates shall be signed by the manufacturer of the materials and shall state that materials involved shall comply in all respects with the requirements of these specifications.

B. The Contractor shall prepare and submit a mix design to the County for review and approval at least 24 hours prior to beginning placement of asphalt concrete pavement for each mix design incorporated for use in this project.

C. Each and every asphalt concrete load ticket shall be submitted to the County by the Contractor at the point of delivery. The plant shall supply delivery ticket for each load of asphalt. Delivery tickets shall show following:

i. Name of plant
ii. Serial number
iii. Date and truck number
iv. Name of Contractor
v. Name and location of job
vi. Specific designation of asphalt in conformance with that required in job specification
vii. Amount of asphalt in tons
viii. Time loaded

7.3 Materials

A. Asphalt concrete pavement shall consist of hot mineral aggregate uniformly mixed with hot bituminous material.

B. Asphalt paving material for Asphalt Drainage Structures, consisting of the drainage channels, dikes, and lined berms, shall be D1-PG 70-10, and shall conform to Part 2, Sections 203-6 and 400-4 of the Standard Specifications.

C. Asphalt pavement materials for roads shall be C1 PG70-10 and shall conform to Part 2, Sections 203-6 and 400-4 of the Standard Specifications.

D. Tack Coat: Tack Coat shall conform to Section 302-5.4, "Tack Coat" of the Standard Specifications and shall be PG 70-10 paving asphalt, or SS-1h emulsified asphalt applied at the rates as specified.

7.4 Execution

A. The Contractor shall arrange and conduct a pre-job paving meeting no later than 24 hours prior to the scheduled paving date. The General Contractor, the Paving Subcontractor and County personnel shall attend this meeting. Discussion topics shall include Contractor-proposed: paving machine and asphalt roller equipment spread, methodology for paving pass sequence, paving pass widths, longitudinal joint locations, and traffic control plan implementation and maintenance specific to each paving operation.

B. Contractor shall remove the existing hardscape sections where applicable and salvage material, as directed by the County as part of T&M bid item.

C. The subgrade for asphalt drainage structures in this project, prepared either by excavation or engineered fill, shall conform to the locations and cross sections as shown on the Project Drawings or as directed by the County. Where the structures are in native cut, the upper six (6) inches of subgrade shall be compacted to a minimum of 90 percent (or as otherwise noted on the Project Drawings) of the maximum density as determined per ASTM D1557. This shall be achieved by scarifying the exposed surface to a depth of six (6) inches and re-compacting. For areas requiring engineered fill, the finished subgrade shall be firm and suitable for placement of asphalt pavement, and shall be compacted to a minimum of 90 percent (or as otherwise noted on the Project Drawings) of the maximum density within the upper one foot, as determined by ASTM D1557.

D. Asphalt shall be applied in 2" thick lifts.

E. Prior to pavement application, surface preparation shall consist of cleaning the underlying course of foreign or objectionable matter with power blowers or brooms where necessary. A tack coat shall be applied to the areas receiving pavement in accordance with Section 302-5.4, "Tack Coat" of the Standard Specifications.

E. The Contractor shall be solely responsible for protection of completed areas against detrimental effects. Recondition, reshape, and re-compact areas damaged by rainfall, or other weather conditions.

F. Distribution and spreading shall conform to the requirements of Section 302-5.5, "Distribution and Spreading" of the Standard Specifications. All transitions and edges shall be feathered to conform to the existing surface and

provide a smooth transition. The Contractor shall install 2"x4" wooden headers using 12"-2"x4" stakes set a maximum of 6-foot on center at all locations where the vertical edges of new asphalt pavement are not in contact with an existing pavement or permanent structures. Wooden headers shall remain in place upon completion of work.

G. Rolling shall conform to the requirements of Section 302-5.6, "Rolling" of the Standard Specifications. Hand and mechanical tampers will not be permitted for compaction of road way section.

7.5 Measurement and payment

A. **The measurement of the final quantity for Optional Bid Item No. 8 "4" Thick Asphalt Drainage Structures"** shall be based on the final in-place square footage of ground covered with Asphalt Drainage Structures within the limits specified in the Project Drawings and as directed by the County. The area of the final surface shall be verified by the County based on conventional ground surveying. Quantity shall be calculated based on the "true" area and to the nearest square foot utilizing digital terrain modeling method. **Payment** for the Asphalt Drainage Structures shall be at the contract unit price per square foot, as stated in the Contractor's Proposal, **Optional Bid Item No. 8.** Each and every Asphalt Concrete load ticket shall be delivered to the County by truck drivers at the point of delivery.

B. **The measurement of the final quantity for Optional Bid Item No. 20 "Construct Asphalt Pad and Miscellaneous Structures"** shall be based on the pertinent details required by the Contract Documents as verified by the County through field measurements of these structures. Payment for the A.C. Drainage Structures shall be at the contract unit price per ton, as stated in the Contractor's Proposal, Optional Bid Item No. 20. The total tonnage shall be based on the submitted asphalt concrete truck delivery tickets. Each and every Asphalt Concrete load ticket shall be submitted to the County by the Contractor on the day of delivery.

C. Payment quantities for all Asphalt Concrete Structures shall be based upon the specified limits and dimensions on the Project Drawings, adjusted by the amount of any change ordered by the County. Payment for all Asphalt Concrete Structures shall include subgrade preparation and removing existing hardscape applicable as specified in the Contract Documents and indicated in the Project Drawings. No payment will be made for any asphalt placed outside the specified limits and dimensions unless otherwise ordered in writing by the County. Payment shall include full compensation for furnishing all labor, material, tools, equipment, and incidentals, and for doing all the work related to and involved in constructing the Asphalt Concrete Structures completed in place.

END OF SECTION

SECTION 8 - CONCRETE AND SHOTCRETE DRAINAGE STRUCTURES

8.1 General

The work covered by this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for the construction of concrete and shotcrete structures which includes: bench crossings, downdrains, drainage swales, spillways, lined slopes and berms, basin slab, stairways and railings. The work shall include but not be limited to grading, excavation, subgrade preparation, and construction of the concrete/shotcrete structures to the elevations, lines and grades and at the locations shown on the Project Drawings or as directed by the County including:

a. Prepare subgrade for concrete/shotcrete drainage structures
b. Supply and install welded wire mesh reinforcement
c. Supply, install, and finish air-placed concrete (shotcrete)
d. Supply and apply concrete curing compounds
e. Excavate or backfill any necessary soil to achieve finished elevations adjacent to the concrete/shotcrete drainage structures.

8.2 References

Reference Standards and Specifications: The following standards and specifications, including documents referenced therein, form part of these Technical Provisions and are incorporated herein by reference.

American Society for Testing Materials (ASTM)

A615 Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement
C33 Standard Specification for Concrete Aggregates
C94 Standard Specification for Ready Mixed Concrete
C131 Standard Test Method for Resistance to Degradation of Small Size Coarse Aggregate by Abrasion and Impact in the Los Angeles Machine
C150 Standard Specification for Portland Cement
D1557 Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort
D1751 Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction

8.3 Submittals

A. Mix design and certifications:
The Contractor shall submit a mix design and certifications to the County for review and acceptance at least two (2) weeks prior to beginning placement of concrete for each mix design incorporated for use in this project.

B. Concrete delivery load tickets

Each and every concrete load ticket shall be delivered to the County by truck drivers at the point of delivery. The mix plant shall supply delivery ticket for each batch of concrete. The Contractor shall submit delivery tickets to the County. Delivery tickets shall show following:

A. Name of ready-mix batch plant
B. Serial number
C. Date and truck number
D. Name of Contractor
E. Name and location of job
F. Specific classes or designation of concrete in conformance with that required in job specification
G. Amount of concrete
H. Time loaded
I. Type, name, and amount of admixtures used
J. Amount and type of cement
K. Total water content
L. Water added by receiver of concrete with his or her signature initials

C. Concrete reinforcing steel
The Contractor shall provide mill certificates to the County for approval prior to delivery of material to the job site.

D. Concrete curing compounds
The Contractor shall submit the manufacturer's product data and installation instructions.

8.4 Materials

A. The Contractor shall adhere to Stormwater Best Management Practice (BMP) WM-8 – Concrete Waste Management as published by the California Stormwater Quality Association and implement in their project-specific SWPPP. This will include but not limited to the installation and removal of onsite temporary concrete washout facilities. Contractor shall provide application of this BMP at the direction of, and location(s) directed by, the County. Contractor shall not begin pouring concrete for the construction of any drainage structure until an onsite temporary concrete washout facility is verified by the County. Any cost associated with the canceling of a concrete order due to the lack of an onsite temporary concrete washout facility shall be at the expense of the Contractor.

B. Portland Cement Concrete (PCC) for bench crossings and the spillway shall be Class 560-C-3250 in conformance with Section 201-1 of the Standard Specifications.

C. Portland Cement Concrete material for downdrains, lining of slopes, and drainage swales shall be Class 650-D-3250P (Shotcrete) in conformance with

Section 201-1 of the Standard Specifications and shall be air-placed with a 4-inch maximum slump in conformance with sub-section 303-2.1.3 Method B (Shotcrete) of the Standard Specifications.

D. Shotcrete shall consist of concrete or mortar pneumatically applied onto surface. Shotcrete shall be applied by the wet-mix (shotcrete) process and the Contractor, subject to County approval, may have the option to cast-in place structural concrete in accordance with this specification in lieu of shotcrete. The substitution of shotcrete for cast-in-place structural concrete will not warrant additional compensation.

E. Concrete coarse aggregate shall conform to ASTM-C33-86, "Specification for Concrete Aggregates" requirements, and also meet the requirements of Section 201-1.2.2, "Aggregates" of the standard specifications, or nonconforming aggregate which by test or actual service produces concrete of required strength and conforms to local governing codes. Aggregates shall be uniformly graded and conform to ASTM C-131 Test Grading C.

F. Fine aggregates shall conform to ASTM-C33-86, "Specification for Concrete Aggregates" requirements, and also meet the requirements of Section 200-1.5.3, "Sand for Portland Cement Concrete" of the Standard Specifications.

G. The Contractor shall not use calcium chloride or fly ash and related materials. The County does not require admixtures; however, if the Contractor proposes admixtures, they shall conform to SIKA Chemical Corp.'s "Plastiment", or approved equal, and shall be applied in accordance with manufacturer's directions and also conform to Section 201-1.2.4, "Chemical Admixtures" requirements of the standard specifications. Any Admixture proposal shall be approved by the County. Upon review of any proposed admixture, the County may accept or reject any proposal.

H. Reinforcing steel (rebar) for bench crossings shall be Grade 60 and shall conform to Part 2, sub-section 201-2.2.1 of the Standard Specifications and also conform to ASTM A 615-89, "Specification for Deformed & Plain Billet-Steel Bars for Concrete Reinforcement" requirements. Reinforcing steel shall be free of rust, scale, or other bond-reducing coatings.

I. Welded Wire Reinforcement (WWR) for downdrains and drainage swales shall conform to sub-section 201-2.2.3 of the Standard Specifications. The gage of the wire and dimensions of the mesh are specified in the Project Drawings. If deemed to be more efficient, Contractor may use the reinforcing steel (rebar) equivalent in lieu of WWR for the reinforcement of shotcrete downdrains not warranting additional compensation.

J. Fiber Reinforcement for Class 650-D-3250P and Class 650-E-3250P concrete items shall conform to sub-section 201-2.3 Type III of the Standard

Specifications.

K. Type II white-pigmented curing compound for concrete/shotcrete structures shall conform to sub-section 201-4.1.1 of the Standard Specifications.

L. If patching is necessary and approved by the County, a bonding agent such as Weld-Crete as manufactured by Larsen Products, or approved equal, shall be used.

M. Pipe railing and components including top rails, mid-rails, bottom rails, posts, and connections shall be made of either aluminum, galvanized steel or approved equal material with a manufactured applied anodized finish or powder coat finish. The railing shall be free from surface blemishes and any railing sections with visible pitting, seam marks, roller marks, stains, discolorations, or other imperfections shall not be acceptable.

N. Internal connection splices, base plates, screws, fasteners, and anchors shall be in accordance with the manufacture's recommendation for aluminum or galvanized steel multi-line pipe railing systems.

O. Railing system joint construction welds shall be Type 1 or 2 in accordance with Voluntary Joint Finish Standards developed by the National Ornamental & Miscellaneous Metals Association (NOMMA).

P. Pipe railing including top rails, mid-rails, bottom rails, and posts shall be schedule 40, with a pipe diameter size of 1.25" (O.D. of 1.66").

Q. Railing concrete post footings shall be constructed in accordance with the manufacture's installation instructions and recommendations.

R. Pipe railing system shall be engineered, designed, fabricated, and installed to withstand the following structural loads without exceeding the allowable design working stress of the materials for railing system, anchors, and connections.

   a. Top-rail of rail system: Capable of withstanding a uniform load of 50 pounds per lineal foot applied horizontally at right angles to the top rail.

   b. Infill area of Rail system: Capable of withstanding a concentrated load of 25 pounds per square foot applied horizontally at right angles over the entire tributary area, including openings and spaces between rails. Reactions due to this load need not to be combined with those loads on the top-rail of railing system.

   c. Handrail: The mounting of handrails shall be such that the completed handrail and supporting structure are capable of withstanding a concentrated load of 200 pounds applied in any direction at any point on the handrail. These loads shall not be assumed to act cumulatively with those loads on the infill area of the railing system.

8.5 Execution

A. The subgrade for concrete/shotcrete structures shall be prepared either by excavating or filling, and shall conform to lines, grades, and cross sections and be located as shown on the Project Drawings or as directed by the County.

Where the structures are in native cut, the upper six (6) inches of subgrade shall be compacted to a minimum of 90% of the maximum density as determined per ASTM D1557. This shall be achieved by scarifying the exposed surface to a depth of six (6) inches and re-compacting this earthen section as required by the Specifications. For areas requiring engineered fill, the finished subgrade shall be firm and suitable for placement of concrete/shotcrete structures, and shall be compacted to a minimum of ninety-percent (90%) of the maximum density as determined per ASTM D1557. Clearing, grubbing and excavation for the concrete/shotcrete structures shall comply with the provisions of Section 300-7 of the Standard Specifications. Any excess soil material resulting from excavation shall be hauled to and stockpiled adjacent to the landfill working face as directed by the County. No additional compensation will be providing for hauling of excess soil material.

B. Forms and ground wires for shotcrete drainage structures shall be installed in accordance with sub-section 303-2.7 of the Standard Specifications. Ground wires shall be placed at approximately 5-foot intervals.

C. Welded wire mesh shall be spliced not less than two meshes. Mortar blocks with wire ties, or other mean acceptable to the County shall be used to secure the reinforcement firmly in position.

D. Contractor shall notify County site personnel at least one day prior to delivery of concrete/shotcrete materials to the Badlands or Lamb Canyon Landfill for each day of delivery. Delivery trucks shall access work areas by using access routes approved in advance by the County.

E. Contractor shall saw-cut existing hardscape surfaces where shown on the Project Drawings or as directed by the County so as to provide a competent edged surface for placement of adjacent Concrete/Shotcrete Drainage Structures.

F. Concrete placement for shotcrete drainage structures shall be in accordance with Part 3, Section 303-2.1 of the Standard Specifications. Nozzle shall be directed in such a manner as to result in minimum rebound of the shotcrete. The velocity of the material as it leaves the nozzle shall maintained uniform and at a rate determined for the given job conditions.

G. Concrete mixing shall comply with Section 201-1.4 of the Standard Specifications. Materials that have been mixed for more than 90 minutes shall not be used.

H. Concrete for the bench crossings shall be placed in accordance with Sections 303-5.2 and sub-sections 303-5.1.1, 303- 5.3, 303-5.4.1, 303-5.4.2, 303-5.5.4, 303-5.5.5, 303-5.6, 303-5.7 and 303-5.8 of the Standard Specifications.

Concrete shall be installed and finished to provide positive drainage towards downstream drainage structures.

I. Shotcrete lining along sideslopes shall be applied at a minimum thickness of 2 inches along the required sideslopes from the toe to the hinge of slope.

J. Type II white-pigmented curing compound shall be applied to all concrete structures in accordance with the requirements of sub-sections 201-4.1.2 and 303-1.10 of the Standard Specifications.

K. Weakened plane joints for PCC structures shall be installed perpendicular to the water flow direction at ten (10) foot intervals along the water flow direction as directed by the County. Depth of joint shall be one (1) inch.

L. Open joints shall be constructed using a suitable material that is subsequently removed. PCC corners shall not be chipped or broken when removing material. Reinforcement shall not be extended through an open joint. Joint filler shall be placed in position before PCC is placed. Joints shall be filled with mastic to prevent the passage of concrete. PCC edges at joints shall be finished using an edger.

M. When drainage structures and adjoining drainage structures are constructed on multiple pours, Contractor shall utilize a construction joint with adjoining steel dowel between the construction joint. Steel dowel shall adhere to Section 201-2.2.1 of the Standard Specifications.

N. Reinforcing steel shall be placed in accordance with Section 303-1.7 of the Standard Specifications.

O. After the shotcrete has been placed as nearly as practicable to the required depth, the surface shall be checked with a straightedge, and any low spots or depressions shall be brought to grade by placing additional shotcrete in such a manner that the finished surface will be reasonably smooth and uniform for the type of work involved. Loose areas of shotcrete shall be removed and replaced by the Contractor at the Contractor's expense.

P. As deemed necessary by the County, sets of three (3) test cylinders of PCC being placed will be cast and tested by the County. One (1) of the test cylinders shall be tested at 7 days for 70 percent of project-specified design strength. The remaining two cylinders shall be tested at 14 days and 28 days (for full design strength) respectively. PCC compressive strength testing shall be per ASTM C39 and ASTM C31. The cylinders shall be paid for by the County.

Q. Contractor shall collect and retain possession of each and every concrete/shotcrete load ticket at the time of material delivery to the project

site. Contractor shall present a complete set of daily load tickets to the County on the day concrete/shotcrete material(s) is placed.

R. The railing system or approved equal including top-rails, mid-rails, bottom-rails, posts, connections, fasteners, anchors, baseplates and all related components shall be installed in accordance with the latest edition of the CBC, manufacturer's instructions, and all other applicable codes and regulations regarding aluminum or galvanized steel multi-line pipe railing systems or approved equal.

8.6 Measurement and payment

A. **The measurement of the final quantity for Optional Bid Item No. 9 "4" Thick Reinforced Shotcrete Drainage Structures"** shall be based on the final in-place square footage of ground covered with Shotcrete Drainage Structures within the limits specified in the Project Drawings and as directed by the County. The area of the final surface shall be verified by the County based on conventional ground surveying. Quantity shall be calculated based on the "true" area and to the nearest square foot utilizing digital terrain modeling method. **Payment** shall be made, after acceptance, at the contract unit price per square foot as stated in the Contractor's Proposal, **Optional Bid Item No. 9**. Payment shall constitute full compensation to the Contractor for all work related to the construction of shotcrete drainage structures including but not limited to all labor, supervision, materials, tools, and equipment necessary to install shotcrete drainage structures, subgrade preparation, over-excavation, formwork, reinforcing steel, shotcrete, finishing, and curing compound in accordance with the Contract Documents. No additional compensation shall be given for shotcrete drainage features placed outside the specified limits and dimensions unless otherwise ordered in writing by the County. No additional compensation will be given for hauling of excess soil material leftover during subgrade preparation.

B. **The measurement of the final quantity for Optional Bid Item No. 18 "Construct 4" Thick Reinforced Concrete Slab Within Existing Basin"** shall be based on the cubic yards for Reinforced Concrete Slab within the limits specified in the Project Drawings and as directed by the County. The total cubic yardage shall be based on the submitted concrete truck delivery tickets. **Payment** shall be made, after acceptance, at the contract unit price per cubic yards as stated in the Contractor's Proposal, **Optional Bid Item No. 18** Payment shall constitute full compensation to the Contractor for all work related to the construction of reinforced concrete slab including but not limited to all labor, supervision, materials, tools, and equipment necessary to install reinforced concrete slab, subgrade preparation, over-excavation, formwork, reinforcing steel, shotcrete, finishing, and curing compound in accordance with the Contract Documents. No additional compensation shall

be given for reinforced concrete structures placed outside the specified limits and dimensions unless otherwise ordered in writing by the County. No additional compensation will be given for hauling of excess soil material leftover during subgrade preparation.

C. **The measurement of the final quantity for Optional Bid Item No. 19 "Construct Shotcrete Access/Drainage Ramp"** shall be based on the final in-place cubic yards of shotcrete placed along the existing access/drainage ramp within the limits specified in the Project Drawings and as directed by the County. The total cubic yardage shall be based on the submitted concrete truck delivery tickets. **Payment** shall be made, after acceptance, at the contract unit price per cubic yard as stated in the Contractor's Proposal, **Optional Bid Items No. 19**. **Payment** shall constitute full compensation to the Contractor for all work related to the construction of shotcrete access/drainage ramp including but not limited to all labor, supervision, materials, tools, and equipment necessary to install shotcrete ramp structure, subgrade preparation, excavation and salvage of existing asphalt grinding/base material, over-excavation, formwork, reinforcing steel, shotcrete, finishing, and curing compound in accordance with the Contract Documents. No additional compensation shall be given for shotcrete applied outside the specified limits and dimensions unless otherwise ordered in writing by the County.

D. **The measurement of the final quantity for Optional Bid Item No. 21 "Construct Reinforced Shotcrete Drainage and Miscellaneous Structures"** shall be based on the cubic yards for Reinforced Shotcrete Drainage and Miscellaneous Structures work within the limits specified in the Project Drawings and as directed by the County. The total cubic yardage shall be based on the submitted concrete truck delivery tickets. **Payment** shall be made, after acceptance, at the contract unit price per cubic yards as stated in the Contractor's Proposal, **Optional Bid Item No. 21**. **Payment** shall constitute full compensation to the Contractor for all work related to the construction of shotcrete drainage and miscellaneous structures including but not limited to all labor, supervision, materials, tools, and equipment necessary to install shotcrete structures, subgrade preparation, over-excavation, formwork, reinforcing steel, shotcrete, finishing, and curing compound in accordance with the Contract Documents. No additional compensation shall be given for reinforced shotcrete structures placed outside the specified limits and dimensions unless otherwise ordered in writing by the County. No additional compensation will be given for hauling of excess soil material leftover during subgrade preparation.

E. **The payment for Optional Bid Item No. 22 "Construct Shotcrete Stairway and Railing"** shall be made, after acceptance, at the Lump Sum price as stated in the Contractor's Proposal, **Optional Bid Items No. 22** to construct shotcrete stairways and railings within the limits specified in the

Project Drawings and as directed by the County. Payment shall constitute full compensation to the Contractor for all work related to the construction of shotcrete stairway and railing including but not limited to all labor, supervision, materials, tools, and equipment necessary to install shotcrete stairway, subgrade preparation, over-excavation, formwork, reinforcing steel, shotcrete, finishing, curing compound, and galvanized steel or aluminum railing system in accordance with the Contract Documents. No additional compensation shall be given for shotcrete applied outside the specified limits and dimensions unless otherwise ordered in writing by the County.

There shall be no additional payment to the Contractor for the installation of keyways adjacent to existing PCC structures. Compensation for the installation of keyways for Concrete Drainage Structures shall be considered as included in the various other contract bid items of work.

END OF SECTION

SECTION 9 - AGGREGATE BASE

9.1 General

The work covered by this section shall consist of furnishing all necessary labor, materials, equipment, tools, and supervision for construction and installation of aggregate base features including but not limited to roads and equipment and vehicle crossings. The work shall include, but is not limited to aggregate base road subgrade preparation and construction of the aggregate base features at the locations shown on the Project Drawings or as directed by the County.

9.2 Submittals

A. The Contractor shall submit Certificates of Compliance for aggregate base materials used in this project. The certificates shall be signed by the manufacturer of the materials and shall state that materials involved shall comply in all respects with the requirements of these specifications.

B. The Contractor shall submit to the County gradation test reports before delivery of aggregate base materials to the project site. The Contractor shall obtain the County's approval of the aggregate base material and material source in advance of the use of such materials in the work.

9.3 Materials

A. Material for the Class II Aggregate Base and Crushed Miscellaneous Base (CMB) shall conform to the following gradation per Section 26-1.02B of the State Standard Specifications for 3/4" maximum particle size:

Sieve Size	Percentage Passing Sieve
1 inch	100
No. 4	35-60
No. 30	10-30
No. 200	2-9

B. Material for the Class III Aggregate Base shall conform to the following gradation per Section 26-1.02C of the State Standard Specifications for 1 – ½" maximum particle size:

Sieve Size	Percentage Passing Sieve
1 inch	100

No. 4	25-60
No. 30	10-35
No. 200	3-15

C. Material for Crushed Miscellaneous Base shall consist of any combination of the following: broken stone, crushed gravel, natural rough surfaced gravel, sand, and processed reclaimed asphalt concrete or Portland Cement concrete.

D. Material for 2" to 4" Aggregate Rock shall consist entirely of crushed rock greater than two inches in size but smaller than four inches.

E. Material for 3" to 6" Aggregate Rock shall consist entirely of crushed rock greater than three inches in size but smaller than four inches.

F. All aggregate must be clean and consist of materials as described in the State Standard Specifications Section 26-1.02A.

G. Aggregate base shall be mixed in a stationary or traveling plant. Proportion aggregates by weight or volume in quantities to meet the project-specified requirements for the aggregate base material. Incorporate, during the mixing operation, water in quantities sufficient to provide the necessary moisture content for the specified compaction. Mixing operations shall produce satisfactory uniform blending and the method of discharging into trucks shall not produce segregation. Placing aggregate base shall be in accordance with Section 301-2.2, "Spreading" of the Standard Specifications. The Contractor shall not process or drag base material to which may cause the segregation or loss of gradation of the base material.

9.4 Execution

A. Subgrade preparation and aggregate base placement operations (adding water, spreading and compacting) shall be performed in accordance to Section 26 of the State Standard Specifications.

B. Subgrade for the aggregate base roads shall be compacted to a minimum of 90 percent relative compaction (or as otherwise noted on the Project Drawings) as determined by ASTM D1557.

C. Subgrade and finished road surfaces within the grading limits shall be graded to ensure positive drainage towards drainage structures as shown on the Project Drawings.

D. Placing aggregate base shall be in accordance with Section 301-2.2, "Spreading" of the Standard Specifications. The Contractor shall not process or drag base material to which may cause the segregation or loss of gradation

of the base material.

E. Place earth or other accepted materials along the edges of the aggregate base material in such a quantity that it will compact to the thickness of the course being constructed. When the aggregate base is being constructed in two or more layers, place material to the width of the shoulder to be rolled and compacted simultaneously with the rolling and compacting of each base layer.

9.5 Measurement and Payment

The measurement of the final quantity for Optional Bid Item No. 10 "Furnish and Install Crushed Miscellaneous Base" shall be at the contract unit price per ton as stated in **Optional Bid Items No. 10** and shall constitute full compensation to the Contractor for all work related to the construction of the aggregate base features including but not limited to: subgrade preparation, excavation, hauling and spreading material, compaction, and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing aggregate base features, complete in place, as shown on the Project Drawings or as directed by the County. The total cubic tonnage shall be based on the submitted aggregate base truck delivery tickets. **Measurement and Payment** for the construction of base section, including, but not limited to; excavating existing ground surface, subgrade preparation and compaction, hauling and stockpiling excess material, supplying and installing CMB, compaction, and finish grading shall be made after County acceptance, at the unit price per ton as stated in the Contractor's proposal.

The measurement of the final quantity for Optional Bid Item No. 11 "Furnish and Install Class II Base" shall be at the contract unit price per ton as stated in **Optional Bid Items No. 11** and shall constitute full compensation to the Contractor for all work related to the construction of the aggregate base features including but not limited to: subgrade preparation, excavation, hauling and spreading material, compaction, and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing aggregate base features, complete in place, as shown on the Project Drawings or as directed by the County. The total cubic tonnage shall be based on the submitted aggregate base truck delivery tickets. **Measurement and Payment** for the construction of base section, including, but not limited to; excavating existing ground surface, subgrade preparation and compaction, hauling and stockpiling excess material, supplying and installing Class II base, compaction, and finish grading shall be made after County acceptance, at the unit price per ton as stated in the Contractor's proposal.

The measurement of the final quantity for Optional Bid Item No. 12 "Furnish and Install Class III Base" shall be at the contract unit price per ton as stated in **Optional Bid Items No. 12** and shall constitute full compensation to the Contractor for all work related to the construction of the aggregate base features including but not limited to: subgrade preparation, excavation, hauling and spreading material, compaction, and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing aggregate base features, complete in place, as shown on the Project Drawings or as directed by the County. The total cubic tonnage shall be based

on the submitted aggregate base truck delivery tickets. **Measurement and Payment** for the construction of base section, including, but not limited to; excavating existing ground surface, subgrade preparation and compaction, hauling and stockpiling excess material, supplying and installing Class III base, compaction, and finish grading shall be made after County acceptance, at the unit price per ton as stated in the Contractor's proposal.

The measurement of the final quantity for Optional Bid Item No. 13 "Furnish and Install 2"-4" Rock" shall be at the contract unit price per ton as stated in **Optional Bid Item No. 13** and shall constitute full compensation to the Contractor for all work related to the construction of the aggregate base features including but not limited to: subgrade preparation, excavation, hauling and spreading material, compaction, and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing aggregate base roads and features, complete in place, as shown on the Project Drawings or as directed by the County. The total cubic tonnage shall be based on the submitted aggregate base truck delivery tickets. **Measurement and Payment** for the construction of base section, including, but not limited to; excavating existing ground surface, subgrade preparation and compaction, hauling and stockpiling excess material, supplying and installing 2"-4" rock, compaction, and finish grading shall be made after County acceptance, at the unit price per ton as stated in the Contractor's proposal.

The measurement of the final quantity for Optional Bid Item No. 14 "Furnish and Install 3"-6" Rock" shall be at the contract unit price per ton as stated in **Optional Bid Items No. 14** and shall constitute full compensation to the Contractor for all work related to the construction of the aggregate base features including but not limited to: subgrade preparation, excavation, hauling and spreading material, compaction, and furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in constructing aggregate base roads and features, complete in place, as shown on the Project Drawings or as directed by the County. The total cubic tonnage shall be based on the submitted aggregate base truck delivery tickets. **Measurement and Payment** for the construction of base section, including, but not limited to; excavating existing ground surface, subgrade preparation and compaction, hauling and stockpiling excess material, supplying and installing 3"-6" rock, compaction, and finish grading shall be made after County acceptance, at the unit price per ton as stated in the Contractor's proposal.

END OF SECTION

SECTION 10 - GREENWASTE APPLICATION OVER SLOPES AND BENCHES

10.1 General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision for the spreading of Processed Greenwaste materials within designated areas at the Badlands or Lamb Canyon landfill as shown on the Project Drawings or as directed by the County.

10.2 Materials

A. Processed Greenwaste is defined as greenwaste material which has been ground so that the maximum dimension in any direction is six (6) inches or less. Processed Greenwaste shall be composed of greenwaste material only, free of refuse, and contaminants as solely determined by the Department. Processed Greenwaste shall be procured only from in-County sources.

10.3 Execution

A. The County shall have clean Processed Greenwaste materials delivered to the site, up to 500' from the slopes in which Contractor spreading work shall occur. Contractor may be required to place Processed Greenwaste at any location within the landfill footprint. The Contractor shall provide the equipment and manpower to evenly spread Processed Greenwaste materials in a safe and efficient manner as determined by the County.

B. The County shall have Processed Greenwaste delivered to areas adjacent to, but up to 500' from access benches, decks and to bottoms of slope in quantity, location and frequency agreed upon by County and Contractor. Contractor shall be responsible for pushing or transporting Processed Greenwaste from the delivered location to the hinge and toes of slopes to received application.

C. Processed Greenwaste material shall not be placed or spread over gravel roads or benches, or on hardscape (concrete or asphalt) structures. Any material placed within these areas shall be removed by the Contractor.

D. Contractor shall ensure that three (3) to six (6) inches of Greenwaste material covers designated areas shown on the Project Drawings for each landfill.

E. Greenwaste material shall be spread by use of a manure spreader or similar type of equipment as approved in advance by the County. In no case shall the depth of spread Greenwaste material be less than three (3) inches or greater than six (6) inches in final placed form.

F. Contractor shall apply adequate compaction to the spread greenwaste product as determined by the County, and shall apply adequate water for dust control

purposes.

G. Contractor heavy equipment and vehicles shall travel no closer than ten (10) feet to any environmental structure. Greenwaste material shall be hand-placed within ten (10) feet of environmental structures including but not limited to, above-ground pipe system, wells, bollards, etc. Any material placed on these structures shall be removed by the Contractor. Greenwaste material shall be placed no closer than five (5) feet from vault boxes.

H. The Department may halt and suspend the work of the Provider at any time without notice in order to complete Department business, such as performing landfill operations, site maintenance, or groundwater/gas monitoring work. Theft

I. Provider may stockpile a combined maximum of one hundred (100) tons of Greenwaste materials at any time during spreading operations.

10.4 Measurement and payment

The measurement of the final quantity for Optional Bid Item No. 15 "Greenwaste Slopes and Benches". **Payment** for Processed Greenwaste shall be at the contract unit price per square foot as stated in **Optional Bid Item No. 15** and shall constitute full compensation to the Contractor for all work related to the spreading of Processed Greenwaste on slopes including but not limited to: furnishing all labor, supervision, materials, tools, and equipment; providing dust control, pushing or hauling processed greenwaste up to 500' from stockpile to toe and hinges of slopes receiving application, spreading, shaping, and compacting. All other work required by the Contract Documents to complete the spreading Processed Greenwaste material shall be considered incidental to the work and will not be paid for separately.

END OF SECTION

SECTION 11 - LITTER REMOVAL

11.1 General

The work covered by this section shall consist of furnishing all necessary labor, materials, equipment, tools, and supervision for litter removal and disposal. The work shall include the removal of litter as directed by the County. The work does not include refuse encountered during excavation, for refuse encountered during excavation please see Section 4 in the Technical provisions.

11.2 Materials

"Litter" includes any wind-blown refuse located along the surface or fences of the site within or outside the refuse limits of the Property.

11.3 Execution

A. The County will direct the Contractor on an as needed basis to the areas that require litter removal. Contractor shall provide a minimum of two (2) laborers for litter removal at each requested occurrence. Due to the dynamic nature of the landfill, the location of the active disposal pad may change daily. Contractor shall coordinate with the County for direction as to where to dispose of litter.

B. In the event the County or Contractor suspects any litter material from the landfill is hazardous (as defined by CalRecycle or the Local Enforcement Agency), the Contractor shall stockpile the suspect material in a location separate from the rest of the litter material. The Contractor shall immediately notify the County if litter material is suspected to be hazardous. The County will make the appropriate analyses to determine if the suspected hazardous material is hazardous by CalRecycle or LEA definition. The Contractor shall dispose of determined hazardous material in the hazardous waste disposal site designated by the County. The Contractor shall be compensated for disposal of such hazardous waste. This work shall be considered as extra work and therefore; will be paid for in accordance with Section 2.7 of the General Provisions entitled "Extra Work". (Any hazardous material generated by the Contractor, including but not limited to spills or leaks during routine equipment maintenance or any spills caused by any of the Contractor's subcontractors or suppliers, shall be properly disposed of at the Contractor's expense as stated in the Contract Documents.)

11.4 Measurement and payment

The measurement of the final quantity for Optional Bid Item No. 16 "Litter Removal)" shall be at the contract unit price per hour as stated in **Optional Bid Items No. 16** and shall constitute full compensation to the Contractor for all work related to the

litter removal and disposal but not limited to furnishing all labor, materials, tools, equipment and incidentals, and for doing all the work involved in litter removal and disposal as directed by the County. Contractor shall notify County of start and finish times each day litter removal is performed so that hours can be properly documented. **Measurement and Payment** for the litter removal and disposal shall be made after County acceptance, at the unit price per hour as stated in the Contractor's proposal.

END OF SECTION

SECTION 12 - 25 FOOT TALL LITTER FENCE

12.1 General

This work shall include furnishing all necessary labor, design, supervision, tools equipment, and materials necessary to design and construct the 25-foot tall removable litter fence including but not limited to:

A. Procure the services of a licensed structural engineer in the State of California to perform structural analysis and prepare design calculations, specifications, and construction drawings for the entire litter fence system including but not limited to removable steel pole system foundation, ground anchors, hardware, cables, and litter barrier netting.

B. Excavation and compacted backfill of bore holes.

C. Furnish and install removable steel poles, ground anchors, hardware, cables, and litter barrier netting in accordance with the specifications and drawings provided by the licensed structural engineer and these Contract Documents.

12.2 Submittals

A. Structural Analysis

i. The Contractor shall submit a report that shall include structural design calculations and results of structural analysis for the construction of the removable litter fence. The report shall address project-specific loading for seismic and wind conditions at the Badlands Landfill in accordance with the latest edition of building codes. This report shall be prepared, signed, and stamped by a California Registered Structural Engineer. Structural design calculations shall include, but not limited to: Site specific seismic and wind load calculations for the construction of the removable litter fence. Badlands is located in a high wind area and the removable litter fence shall be designed to withstand wind speeds in excess of 110 mph with a 50% litter coverage on the litter barrier netting.

ii. Foundation analysis and design that allows the steel poles to be removed and relocated if necessary.

iii. Removable steel pole, ground anchors, hardware, cables, and litter barrier netting design.

In addition, the report shall include a Letter of Certification confirming that the removable litter fence meets site loading conditions and building codes as required. Construction Drawings

The structural report shall include a complete set of construction drawings (24" x 36") that shall include, but not limited to:

i. Removable steel pole foundation system

ii. Details for steel poles, ground anchors, hardware, cables, and litter barrier netting, and any other related items required to construct the removable litter fence.

In addition, the following information shall be provided on the drawings: builder and contractor responsibilities, general notes, approval notes, product certification, safety guidelines, removable litter fence description, litter fence loads, drawing index, legend for abbreviations and symbols, title block, revisions, designer name with address and contact information, Contractor name with address and contact information, Riverside County Department of Waste Resources name with address and contact information, sheet numbers, and drawing scale if necessary. These drawings shall be signed and stamped by a California Registered Structural Engineer.

B. Construction Drawings

The structural report shall include a complete set of construction drawings (24" x 36") that shall include, but not limited to:

i. Removable steel pole foundation system

ii. Details for steel poles, ground anchors, hardware, cables, and litter barrier netting, and any other related items required to construct the removable litter fence.

In addition, the following information shall be provided on the drawings: builder and contractor responsibilities, general notes, approval notes, product certification, safety guidelines, removable litter fence description, litter fence loads, drawing index, legend for abbreviations and symbols, title block, revisions, designer name with address and contact information, Contractor name with address and contact information, Riverside County Department of Waste Resources name with address and contact information, sheet numbers, and drawing scale if necessary. These drawings shall be signed and stamped by a California Registered Structural Engineer.

12.3 Materials

The Contractor shall furnish and install removable steel poles, ground anchors, hardware, cables, and litter barrier netting, and other items required to construct the removable litter

fence. These items shall be as specified in the final Structural Analysis Report as accepted by the County.

Unless otherwise specified in the final structural analysis report, the removable litter fence components shall consist of, but not limited to, the following:

A. All hardware and fitting shall be hot-dipped galvanized in accordance with ASTM designation A153 or A123.

B. Steel poles shall be new, minimum 12-inch diameter with a yield stress factor of 66 ksi and coated with black STRYK 5388, FACS Flexible Anti-Corrosion System – 3 coat application, or approved equal. Poles shall be installed 25 feet above ground level with an outrigger at 45 degrees. Steel poles shall be installed a maximum spacing of 50 feet, on–center. The poles shall be supported with native compacted backfill in maximum 6" maximum lifts in a bore hole with a minimum 24" diameter.

C. Ground Anchors, with a minimum 6,000 lb. tensile strength, shall be installed between each steel pole, such that steel poles installed 50 ft. on-center shall be installed 25 ft. from each anchor. Netting shall have a vertical rope sewn into the netting that attaches to the ground anchor. Minimum 20,000 lb. ground anchors shall be installed at each end of a straight line of the litter barrier and at the turning point of the litter barrier.

D. All cables shall equal or exceed the following: 3/8" top, bottom, and middle horizontal cable 1 x 7 galvanized steel strand cable, with a minimum breaking strength of 15,400 lbs. All 5/16" vertical cable shall be 1 x 7 galvanized steel, with a minimum cable breaking strength of 11,200 lbs.

E. Litter Barrier Netting shall be Redden #970 polyester netting or approved equal with minimum 168.4 lb. mesh breaking strength, 1" single bar measure mesh, four needle raschel knotless construction, treated with black resin bonding. Mesh break strength shall be determined per ISO 1806. Netting shall have 3/8" braided dark color perimeter rope, with a minimum 3,500 lbs. breaking strength and snapped to steel cable with 9/32" carabineers on maximum 2' centers. Twine shall be #48 braided polyester twine, minimum 375 lb. tensile strength, treated black. The attachment twine shall continually encompass the netting component and be tied to the rope component via a clove hitch knot +/-6 inches on center, never to exceed 8 inches on center. Horizontal rib lines shall be installed at the point where the outrigger arm meets the vertical pole section. Vertical rib lines shall be installed at each steel pole location and one-half way between each pole at the mid span anchor location. Netting shall be installed per manufacturer's instructions so as to validate warranty. Net will be accompanied with a ten year non pro-rated warranty.

12.4 Execution

A. Construction of the removable 25-foot tall litter fence (foundation, removable steel poles, ground anchors, hardware, cables, and litter barrier netting) shall be in accordance with the Contract Documents and the design details, specifications, and construction drawings included as part of the Structural Analysis Report.

12.5 Measurement and Payment

A. **The measurements of the final quantity for Optional Bid Item No. 17 "25-Foot Tall Litter Fence"** shall be determined by the County based on field measurements of the axial length (linear feet) of removable litter fence installed at the locations and to the dimensions shown on the Project Drawings and Construction Drawings prepared by the licensed Structural Engineer. **Optional Bid Item No. 17** and shall constitute full compensation to the Contractor for all work related to the construction of the removable litter fence in the project including but not limited to: furnishing all labor, supervision, materials, tools, and equipment for the construction of the removable litter fence. **Measurement and Payment** for the removable litter fence shall be at the contract unit price per linear foot as stated in the Contractor's Proposal.

END OF SECTION

SECTION 13 - MISCELLANEOUS CONSTRUCTION ITEMS

13.1 General

The work covered in this section shall consist of furnishing all necessary labor, materials, equipment, tools and supervision to construct miscellaneous items including, but not limited to: removing, salvaging and relocating the bulkhead of the existing skimmer system in the Southwest Sedimentation Basin at Badlands Landfill, demolishing a concrete collar, installation of Reinforced Concrete Pipe (RCP), installation of a concrete collar and installation of a new faircloth skimmer as defined below and as directed by the County.

13.2 Submittals

Prior to delivery of materials, the Contractor shall submit product data sheets, engineered drawings, material specifications and manufacturer's application instructions for all materials to the County for approval.

13.3 Materials

A. Faircloth Skimmer shall be eight inch (8") orifice as manufactured by J.W. Faircloth & Son, Inc. Any additional pipe, glue, hoses, couplings required to complete installation of the 8" skimmer shall be per manufacturer's recommendations.

B. RCP shall consist of eighteen inch (18") diameter tongue and groove (T&G) reinforced concrete pipe that shall conform to Class IV 2000 D and be in accordance to Standard Specification Section 207-2. A certificate of compliance shall be provided to the County stating that the materials furnished simply in all respects with Standard Specifications Section 207-2. The RCP shall be fabricated by Rinker Material Products or approved equal.

C. Concrete material for the concrete collar that secures the CMP elbow to the RCP shall be Class 520-C-3250 and shall confirm to the Standard Specifications Section 201-1.1.2.

13.4 Execution

13.4.1 EXCAVATION

A. Pursuant to Section 6500 of the Labor Code, prior to commencing the excavation of a trench five feet (5') in depth or greater and into which a person will be required to descend, the Contractor shall first obtain a permit to do so from the State of California Department of Industrial Relations, Division of Occupational Safety and Health.

B. The subgrade for installation of CMP and RCP shall be prepared by excavating engineered fill to the line, grade and cross section shown on the Project Drawings. The trench for RCP shall be excavated in

accordance with State Standard Plan A62DA dated November 17, 2006 - Type II Installation. The trench shall provide a minimum clear distance of six (6) inches between the outside of the pipe and the side of the excavation for each side of the pipe. Prior to installing RCP, the center three (3) inches of the subgrade shall be softened by scarifying or other means to a depth of three (3) inches.

C. Excavation for the installation of the CMP elbow shall be carefully made by using both mechanical means and shovels in order that the structure may be positioned in-place on a firm, stable and unyielding surface with minimal resultant voids under the structure. The width of excavation for CMP shall provide a minimum clear distance of six (6) inches between the outside of the pipe and the side of the excavation for each side of the pipe.

13.4.2 DEMOLITION

A. Contractor shall demolish and remove existing concrete collar. Demolished concrete shall be hauled to the Site's Wet Weather Pad or an area designated by the County for recycling and reuse.

13.4.3 INSTALLATION

A. Contractor shall protect in place, remove, salvage and reinstall as needed all appurtenances currently installed as part of the Southwest Sedimentation Basin skimmer system including but not limited to skimmer, couplings, CMP bulkhead and elbow, flex hose, RCP, and valves.

B. RCP installation shall be performed in accordance with Standard Specifications sub-section 306-7.3.2.1 Tongue and Groove Self-Centering Joints. RCP installed along curves shall have one or both ends beveled or be pulled to provide a smooth curve.

C. A new CMP elbow shall be installed if existing elbow is unsalvageable during concrete collar removal. CMP collar and bulkhead shall be installed in accordance with Standard Specifications Section 306-7.6.

D. Existing bulkhead shall be welded to the top of the CMP section around entire perimeter so as to create a water-tight seal. Welding shall conform to Section 304-1.9 of the Standard Specifications.

E. Concrete collar shall be installed in accordance with Standard Specifications Section 303-1.

13.4.4 BACKFILL

A. Contractor shall conduct trench backfill operations with due caution and care to prevent damage to the Southwest Sedimentation Basin Skimmer System.

B. Backfill of trench for RCP shall be in accordance with Standard Specifications Section 306-12.

13.5 Measurement and Payment

A. **Measurement and Payment for "miscellaneous construction items"** including demolition of concrete collar, salvaging, removing, and welding the bulkhead and CMP elbow, installation or RCP, concrete collar and Faircloth Skimmer shall be made after County acceptance. Unless otherwise negotiated by the County and Contractor, the cost of all work performed by the Contractor to construct miscellaneous construction items will be on an "Authorized Time and Material" basis and will be computed in the manner described in Section 7.3. of the General Provisions in the Contract Documents, and the compensation thus provided shall be full payment to the Contractor related to the authorized time and material work. When submitting Contractor T&M the contractor shall also submit subcontractor and vendor invoices.

END OF SECTION

SECTION 14 - PERCOLATION BASIN

14.1 General

At the County's request the Contractor may be required to implement additional improvements at Lamb Canyon Sanitary Landfill that include the construction of a Percolation Basin and Appurtenances. If the County elects to authorize this optional work, the Contractor will be notified in writing by the County within the first ten (10) business days after the issuance of Notice to Proceed. This work shall include, but is not limited to: excavation and preparing final surface grades for percolation basin; furnishing and installing rock drainage layers; furnishing and installing 16 oz. geotextile layer; furnishing and installing two precast drop inlet structures; constructing reinforced concrete transition drainage structures; furnishing and installing two 24" HDPE pipe culverts; and construction of aggregate base roadway.

The work covered by this Section shall consist of furnishing all necessary labor, materials, equipment, tools, and supervision for the construction of the Percolation Basin and it appurtenances. The work shall include subgrade preparation and construction of the Percolation Basin and all its appurtenances at the locations shown on the Project Drawings or as directed by the County.

14.2 Submittals

Prior to delivery of materials, the Contractor shall submit product data sheet, engineered drawings, material specifications and manufacturer's application instructions for all materials to the County for approval. Submittals for reinforced concrete and aggregate base materials shall be in accordance with Sections 8.3 and 9.2 , respectively.

14.3 Schedule of Values

After notification of award and prior to the start of any work, the Contractor shall prepare and submit a satisfactory Schedule of Values for all percolation basin work. The Schedule of Values will establish unit prices for individual items of work and will form the basis for payment of contract work and will be used to establish payment for any extra work. An acceptable form for the Schedule of Values, representing the minimum level of detail required to quantify the scope of work is included at the end of this Section.

The quantities for the schedule of values work items in the Contract Documents are only estimates and may be individually increased, decreased, or deleted at the County discretion. The County will inform the Contractor within ten (10) business days of issuance of the Notice of Proceed of this Optional Bid Item and its respective quantities that will be implemented as part of the Contract.

14.4 Materials

14.4.1 ROCK LAYERS

A. Rock material to be used within the percolation basin and above the geotextile layer (1-foot thick layer) shall conform to the following gradation:

Sieve Size	Percentage Passing Sieve
1 inch	90-100
¾ inch	30-60
½ inch	0-20
No. 4	0-5

B. Rock material to be used within the percolation basin and under the geotextile layer (9-foot thick layer) and within the percolation trenches shall consist of washed Crushed Aggregate Base consisting entirely of crushed rock greater than 3 inches in size but smaller than 6 inches.

14.4.2 16 OZ. GEOTEXTILE

The geotextile material shall be a new, high quality product designed and manufactured specifically for the purposes of this project. Its suitability and durability for this type of work shall have been adequately demonstrated by prior applications. The geotextile shall be 100 percent polyester or polypropylene, needle-punched, and non-woven. Geotextile rolls shall be shipped and stored in opaque and watertight wrappings. The geotextile fabric installation shall be performed under the ongoing observation of the County and according to the Contract Documents. The manufacturer's certification shall demonstrate that the geotextile meets or exceeds the following Minimum Average Roll Values MARV (in the weakest principal Direction):

Property	Unit	Test Method	Value 16 oz.
Mass per unit Area	oz./sy	ASTM D5261	16
Apparent Opening Size	US Std. Sieve	ASTM D4751	70-140
Permittivity	sec^{-1}	ASTM D4491	0.7
Puncture Resistance	lbs	ASTM D4833	170
Static Puncture Strength	lbs.	ASTM D6241	900

Trapezoidal Tear Strength	lbs	ASTM D4533	145
Grab Tensile/Elongation	lbs/%	ASTM D4632	320/50
UV Resistance – 70% Strength Retained	hrs.	ASTM D4355	500

14.4.3 PRECAST DROP INLET

The drop inlet structures shall be precast. The substitution of cast-in-place units for precast will not warrant additional compensation. The precast drop inlet structures shall conform to ASTM C478 with the additional requirement that the cement used shall be Type IIA per ASTM C150. Frames and grates shall withstand H20 loading requirements and be hot-dip galvanized steel. Precast drop inlet, frames, and grates shall be as manufactured by Jensen Precast or approved equal. Mark date of manufacture and trademark of manufacturer shall be clearly labeled on precast units.

14.4.4 24" HDPE DRAINAGE PIPE

A. HDPE pipes shall be sized as shown on the Project Drawings and described in these specifications. Twenty-four-inch (24") nominal diameter pipes shall have a design working pressure of 160 psi or greater at 73.4°F and an SDR of 11 or less.
B. Pipe material shall be of ultra-high molecular weight, high-density polyethylene conforming to ASTM 3350 Cell Classification PE 345434C through 355434C, manufactured from PE 3408 resin.
C. The material shall exceed 1,500 hours on environmental stress crack resistance (ESCR) with no failures and no indication of stress crack initiation, as determined by ASTM D1693, Condition C. Certified laboratory test results documenting cell classification, melt flow index, and tensile strength of actual pipe to be used on the project shall be submitted to the County for approval prior to delivery.

Additional, nominal, engineering design specifications required are:

Property	Unit	Test Method	Value
Elongation at Break	%	ASTM D638	600-900
Modules of Elasticity	psi	ASTM D882	>100,000
Impact Strength	N/A	ASTM D256	no break
Resin Density	Gm/cm^3	ASTM D1505/D792	0.95-0.96
Melt Index	gm/10 min	ASTM D1238*	0.11**
Hardness	shore "D"	ASTM D2240	62-65

* Perform test at 216 kg/190oC

** Average melt index value with a standard deviation of 0.01

D. The HDPE pipe shall be homogeneous throughout, and shall be free of visible cracks, holes, foreign inclusions, or other defects. Any pipe with nicks, scrapes, or gouges deeper than 5% of the nominal wall thickness shall be rejected. Pipe material shall be uniform in color, capacity, density, and other physical properties.

E. The following shall be continuously printed on the pipe:

   i. Name and trademark of the pipe manufacturer

   ii. Nominal pipe size

   iii. Standard dimension ratio (SDR)

   iv. The letters HDPE, followed by the hydrostatic design basis in 100's of psi

   v. Manufacturing standard reference (e.g. ASTM D-3035 or ASTM F-714)

   vi. A production code from which date and place of manufacture can be determined

F. HDPE fittings shall be molded from polyethylene compound having a cell classification equal to or exceeding the compound used in the pipe or shall be manufactured using polyethylene compound having a cell classification equal to or exceeding the cell classification of the pipe as specified herein.

14.4.5 AGGREGATE BASE ROADWAY

Materials utilized for the aggregate base roadway section shall be in accordance with SECTION 9 -AGGREGATE BASE and applicable details from the Project Drawings.

14.5 Execution

A. The Contractor shall prepare the subgrade for the percolation basin by excavation to the grades indicated on the Project Drawings. This work may include ripping, breaking, and dozing of materials using standard earthmoving equipment up to and including CAT D-9 with single ripper type equipment. This item shall also include keeping excavation areas neat and orderly, and completing the excavation to the satisfaction of the County.

B. Excavated material shall be transported and placed by the Contractor in the designated stockpile as directed by the County. Surface drainage shall be maintained at all times in the excavation and stockpile areas. Surfaces of flat areas shall be graded to ensure positive drainage in accordance with the Project Drawings and finish-graded with a motor grader or approved equal. Final surface areas shall be finished by track walking and left in a uniformly graded condition to prevent or minimize erosion.

C. The Contractor shall excavate the percolation trenches to the dimension stated in the Project Drawings and shall be immediately backfilled with rock material as specified in the Project Drawings. No personnel shall be allowed to enter the trench at any time. Percolation trench shall be excavated in such a manner as to ensure that trench sidewalls will be stable under all working conditions. The percolation trench shall be constructed in conformance with CAL-OSHA

standards. All excavations shall be barricaded in conformance with Cal/OSHA standards. Prior to excavation, Contractor shall acquire and submit an exemption letter or trenching permit from CAL-OSHA and comply with Labor Code Section 6705, Excavation Plans for Worker Protection. If shoring/bracing is proposed, the Contractor's design and installation of shoring/bracing shall be in compliance with CAL-OSHA standards.

D. The Contractor shall furnish and install the rock and drainage layers in accordance with the Contract Documents and at the location specified in the Project Drawings or as directed by the County.

E. The Contractor shall furnish and install the 16 oz. geotextile layer material at the specific locations shown on the Project drawings. The geotextile shall be laid smooth without wrinkles or folds on the prepared subgrade in the direction of the construction traffic. Adjacent geotextile rolls shall have a minimum 12-inch overlap. Aggregate base is to be place in the direction in which the geotextile was laid out, to aid in tensioning. Equipment should not be allowed onto uncovered geotextile material. To avoid damaging the geotextile, a minimum of six (6) inches of aggregate base on top of the geotextile shall be placed before tracked equipment can be allowed on top of the geotextile.

F. The Contractor shall saw cut and remove the existing reinforced concrete drainage channel section and remove the underlying material in order to install the precast drop inlet structures and all the necessary piping required at the locations shown in the Project Drawings or as directed by the County.

G. The 24" HDPE piping and fittings shall be laid, assembled, and installed in strict conformance with the Manufacture's specifications and at the lines, grades, and at locations as shown on the Project Drawings and/or as directed by the County.

H. Maximum acceptable tolerances for positioning of the pipe shall be 0.05 feet vertically and 0.5 feet horizontally. All pipes must be placed to promote positive drainage along the entire length. Low areas where liquids may collect are not acceptable.

I. HDPE pipe lengths, fittings, and flange connections to be joined by thermal butt-fusion shall be of the same type, grade, and class of HDPE compound, and shall be supplied from the same raw material supplier. Butt-fusion of pipes and fittings shall be performed in accordance with the pipe manufacturer's recommendations for equipment and technique. Jointing can be performed inside or outside of the work area, at the Contractor's discretion.

J. Before covering the pipes, the pipe shall be surveyed by the County's surveyors for verification of alignment and proper drainage. Solid HDPE pipe shall be tested by the Contractor (Air Test) for any leaks as directed by the County.

K. Pipe and fittings shall be held firmly in position and protected from damage while the trench is being backfilled. All pipe and fittings shall be kept clean during the progress of the work. Any pipe that becomes either partially or fully clogged or damaged before final acceptance, shall be cleaned, repaired, or replaced to the satisfaction of the County, by the Contractor, at the expense of the Contractor.

L. The precast drop inlet structure shall be set level and flush with the surrounding reinforced concrete section to ensure positive drainage into the drop inlet and shall be installed in accordance with the Manufacturer's recommendations and

applicable details in the Project Drawings. Any broken reinforced concrete adjacent to the drop inlet shall be repaired by the Contractor as directed by the County.

M. The construction of the reinforced concrete transition drainage structures shall be in accordance with SECTION 8 -CONCRETE AND SHOTCRETE DRAINAGE STRUCTURES and applicable details in the Project Drawings.

N. The construction of the aggregate base roadway shall be in accordance with SECTION 9 -AGGREGATE BASE and applicable details in the Project Drawings.

14.6 Measurement and Payment

The Schedule of Values will establish unit prices for individual items of work and will be the basis for payment of contract work and will also be used to establish payment for any extra quantities. The acceptable form for the Schedule of Values, which represents the minimum level of detail required to quantify the scope of work is located at the end of this section. The Contractor's submitted Schedule of Values MUST include unit prices for Items No.1 through No. 7. The total cost for the items specified on the contractor's submitted Schedule of Values must match the lump sum bid price in the Contractor's proposal for **Optional Bid Item No. 23 – "Construct Percolation Basin and Appurtenances"**.

As stated above, the quantities for the schedule of value work items for Optional Bid Items No. 23 are only estimates and are subject to change and may be individually increased, decreased, or deleted at the County discretion. The unit prices stated in the Contractor's Proposal for each item of work will be the basis for payment of the actual work performed by the Contractor and will also be used to establish payment for any extra work.

The **Measurement** of the excavation and final grading for the percolation basin **Optional Bid Item No. 23-1 "Excavation and Final Grading"** shall be based only on the total material removed as determined by comparing the pre and post construction ground surfaces within the specified percolation basin removal limits in the project. The pre-construction ground surface shall be established by conventional ground survey prior to commencement of work, and the post-construction ground surface for this work shall be established by ground surveying after the completion of excavation and final grading. **Payment** for the earthwork within the percolation basin shall be at the contract unit price per cubic yard as stated in the Contractor's Proposal, **Optional Bid Item No. 23-1** and shall constitute full compensation to the Contractor for all work related to the excavation and final grading for the percolation basin in the project including but not limited to: furnishing all labor, supervision, materials, tools, equipment, removal of material, hauling material to designated stockpile, establishing finish grade in accordance with the Project Drawings, and any other requirements by the Contract Documents for the exaction of the percolation basin.

The **Measurement** of the final quantity for **Optional Bid Item No. 23-2 "Furnish & Install 1' Thick Rock Layer (1" Max Particle Size)"** shall be determined by the County

based on the total tonnage quantity of crushed rock furnished and installed by the Contractor. Payment for furnishing and installing this rock layer shall be made based on the unit price per tons for the crushed rock, as stated in the Contractor's Proposal, **Optional Bid Item No. 23-2** and shall constitute full compensation to the Contractor for all work related to furnishing and installing the 1" max particle size rock layer. The total tonnage shall be based on the submitted rock truck delivery tickets. Each and every rock load ticket shall be submitted to the County by the Contractor on the day of delivery.

The **Measurement** of the final quantity for **Optional Bid Item No. 23-3 "Furnish & Install 9' Thick Rock Layer (3" – 6" Max Particle Size)"** shall be determined by the County based on the total tonnage quantity of 3" to 6" max particle size rock furnished and installed by the Contractor. **Payment** for furnishing and installing this rock layer shall be made based on the unit price per tons for the 3" to 6" max particle size rock, as stated in the Contractor's Proposal, **Optional Bid Item No. 23-3** and shall constitute full compensation to the Contractor for all work related to furnishing and installing the 3" to 6" max particle size rock layer. The total tonnage shall be based on the submitted rock truck delivery tickets. Each and every rock load ticket shall be submitted to the County by the Contractor on the day of delivery.

The **Measurement** of the final quantity for **Optional Bid Item No. 23-4 "Furnish & Install 16 oz./sy Geotextile Layer"** shall be based on the final in-place square footage of ground covered with material placed within the limits specified in the project and after it has been installed and verified by the County. The area of the final surface shall be verified by the County based on conventional ground surveying. Quantity shall be calculated to the nearest square foot utilizing digital terrain modeling methods. **Payment** shall be made, after acceptance, at the unit price per square foot, as stated in the Contractor's Proposal, **Optional Bid Item No. 23-4**. Payment shall constitute full compensation to the Contractor for all work related to the furnishing and installation of geotextiles as required by the Contract Documents. No additional compensation shall be given for any geotextile waste materials (trimming of rolls, seam overlaps, patches, or related items).

The **Measurement** and **Payment** for the Precast Drop Inlet Structures shall include, but not limited to; furnishing all labor, materials, tools, equipment, and incidentals for precast drop inlet, galvanized steel frame and grates, connections, water stop, hardware, trench floor mortar, concrete collars, concrete encasement, waterproofing joints, and all other appurtenances, shall be made after County acceptance, at the unit price for each unit installed at the locations and in conformance with the details shown of the Project Drawings and as required by the Contract Documents. Payment for precast drop inlet structures and all related works shall be based upon the contract unit price per each unit as stated in the Contractor's proposal **Optional Bid Item No. 23-5a – "Furnish and Install Precast Drop Inlet Structure (4' Wide)"** and **Bid Item No. 23-5b – "Furnish and Install Precast Drop Inlet Structure (12' Wide)"**

The **Measurement** and **Payment** for the 24" HDPE pipe for the culvert, including, but not limited to; trench excavation, subgrade preparation, coring, backfill, bedding materials, HDPE pipe boots, concrete encasement, pipe fittings, gaskets, waterstop, smooth exterior cylinder wall adapters, concrete collars, connections, cleanouts, vaults, and testing of pipe culvert shall be made after County acceptance, at the unit price per lineal feet of pipe culvert as stated in the Contractor's proposal **Optional Bid Item No. 23-6 – "Furnish & Install 24" Diameter HDPE Pipe Culvert and Accessories".**

The **Measurement and Payment** for the construction of 2-inch Thick CMB over 4-inch Thick Crushed Aggregate Base (2" to 4" rock) roadway, including, but not limited to; over-excavation, subgrade preparation, supply and place 2-inch thick CMB material, supply and place 4-inch thick Rock (2" to 4"), compaction, and finish grading shall be made after County acceptance, at the unit price per square foot (true area including slope surface area) as stated in the Contractor's proposal **Optional Bid Item No. 23-7 – "Construct Aggregate Base Roadway, 2" Thick CMB Layer Over 4" Thick Rock (2" to 4") Layer.**

The **Measurement** of the final quantity for **Optional Bid Item No. 23-8 "Construct Reinforced Concrete Transition Drainage Structures"** shall be based on the pertinent details required by the Contract Documents as verified by the County based on field measurements and quantity shall be calculated to the nearest square foot. **Payment** for the construction of the reinforced concrete transition structures shall be at the contract unit price per square feet as stated in the Contractor's Proposal, **Optional Bid Item No. 23-8** and shall constitute full compensation to the Contractor for all work related to the construction of the reinforced concrete structures in the project including but not limited to: furnishing all labor, materials, tools, equipment, subgrade preparation, and incidentals, and for doing all the work involved in constructing the reinforced concrete structures, complete in place, as shown on the Project Drawings or as directed by the County.

ITEM NO.	ITEM OF WORK	UNIT	QUANTITY	UNIT COST	TOTAL COST
1	Excavation and Final Grading	CY	10,000		
2	Furnish & Install 1' Thick Rock Layer (1" Max Particle Size)	Tons	600		
3	Furnish & Install 9' Thick Rock Layer (3"-6" Max Particle Size)	Tons	8,500		
4	Furnish & Install 16 oz./sy Geotextile Layer	SF	9,000		
5a	Furnish & Install Precast Drop Inlet Structure (4' wide)	EA	1		
5b	Furnish & Install Precast Drop Inlet Structure (12' wide)	EA	1		
6	Furnish & Install 24" Diameter HDPE Pipe Culvert and Accessories	LF	75		
7	Construct Aggregate Base Roadway, 2" Thick CMB Layer over 4" Thick Rock (2" to 4") Layer	SF	11,000		
8	Construct Reinforced Concrete Transition Drainage Structures	SF	200		
TOTAL (must equal lump sum bid amount for Optional Bid Item No. 26 - "Construct Percolation Basin and Appurtenances")					$_____

END OF SECTION

SECTION 15 - AUTHORIZED TIME & MATERIALS WORK

15.1 General

Payment for "Authorized Time and Materials" shall be made when prior written authorization and approval has been provided to the Contractor by the County. Payment for all mobilization/demobilization and SWPPP associated with the optional on-call bid items shall be included in "Authorized Time and Materials". Payment for other items which may be included in "Authorized Time and Materials" include but are not limited to: Bollards, Asphalt Lined Diversion Berms, Concrete Headwalls, Endwalls, and Wingwalls, Aggregate Equipment Crossings, Constriction and/or Repair of 20- mil LDPE Drainage Channels, Asphalt Road Repair, Type A and/or D Asphalt Concrete Dikes, 12"-36" CMP and RCP Culverts and Overslope Drains, 12"-36" HDPE Culverts and Overslope Drains, Grouted Riprap Channels, Masonry Splash Walls, Repair of Eroded Slopes, Rough Grading, Thermoplastic Striping, and AC Speed Bumps.

Authorized Time and Materials may be used by the County for work that has been negotiated between the County and the Contractor. Use of Authorized Time and Material allocation will be at the sole discretion of the County. All or any portion of the allocation amount may be deleted from the Contract. The County shall have the right to add work of a different character or function, and have the Contractor perform such added work when such work is considered by the County to be appurtenant to the satisfactory completion of the project.

The Contractor shall provide a rate schedule for all labor and equipment that may reasonably be anticipated for use during the project. Labor rates shall be consistent with those required by the prevailing wage rate requirements of the Contract and shall reflect all benefits and employer costs. Once the labor and equipment rates have been approved by the Project Manager, they will become the basis for compensation for any Time and Material work requested by the County. If Contractor is already onsite for the contracted work, then Contractor shall not charge Authorized Time and Materials for Foreman's work truck.

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

Unless otherwise negotiated by the County and Contractor, the cost of all work performed by the Contractor on an "Authorized Time and Material" basis will be computed in the manner described in Section 7.3. of the General Provisions in the Contract Documents, and the compensation thus provided shall be full payment to the Contractor related to the authorized time and material work. When submitting Contractor T&M the contractor shall also submit Subcontractor and Vendor invoices.

END OF SECTION

BADLANDS AND LAMB CANYON SANITARY LANDFILL

CONSTRUCTION PLANS FOR DAILY COVER EXCAVATION & ON-CALL SITE IMPROVEMENTS

SEPTEMBER 2018

PREPARED BY
DEPARTMENT OF WASTE RESOURCES
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MORENO VALLEY, CALIFORNIA 92553
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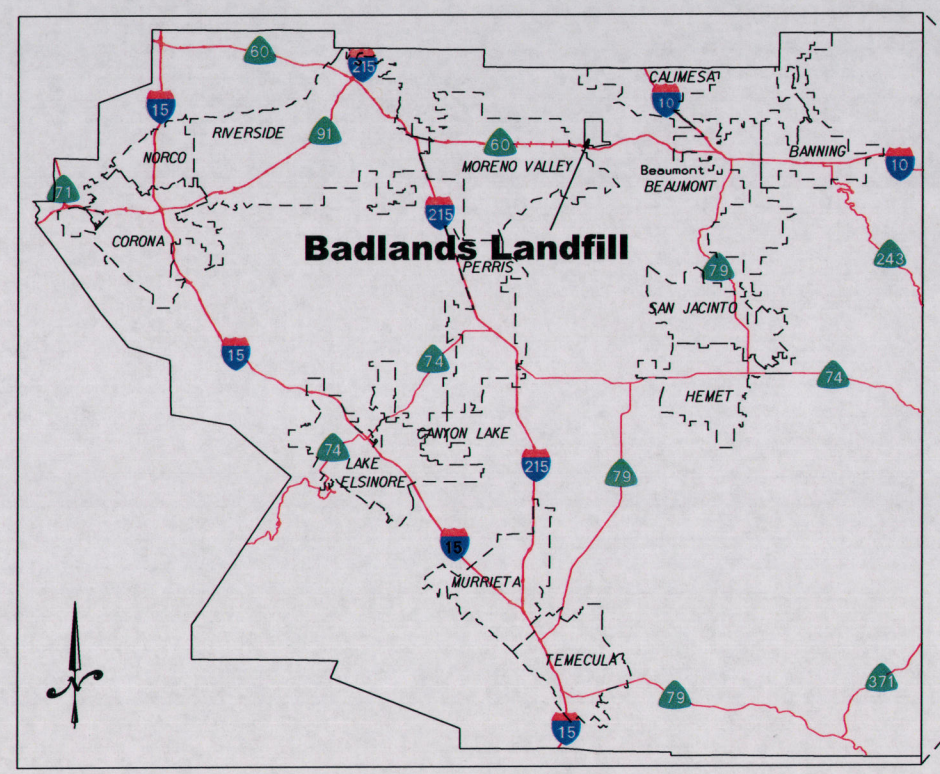
RIVERSIDE COUNTY
DEPARTMENT OF
WASTE RESOURCES

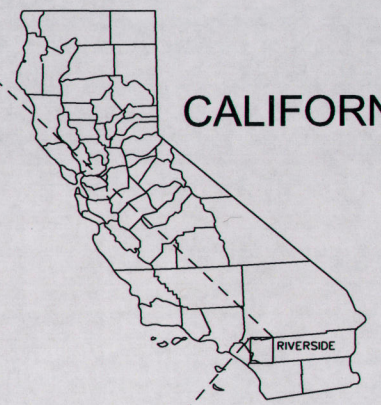
DEPARTMENT OF WASTE RESOURCES

APPROVED: _____
Hans Kemkamp, General Manager - Chief Engineer, R.C.E. 45868 Exp. 12/31/2018

RECOMMENDED: _____
Joseph R. McCann, Assistant Chief Engineer, R.C.E. 51694 Exp. 6/30/2018

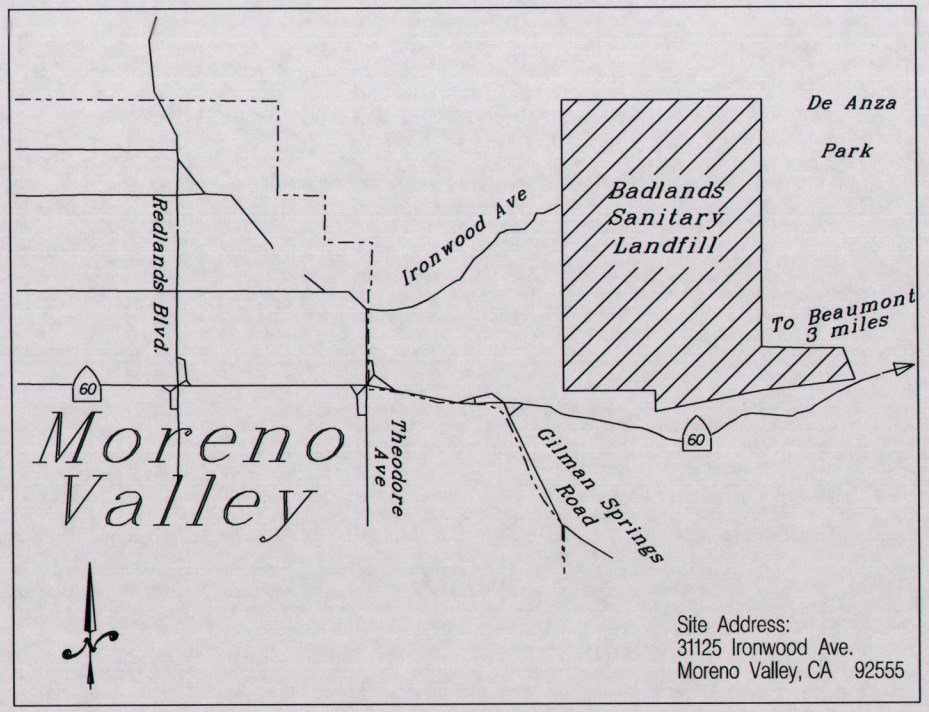
RECOMMENDED: _____
Andrew Cortez, Principal Engineer, R.C.E. 62528 Exp. 12/31/2018





LOCATION MAP

N.T.S.



VICINITY MAP

N.T.S.

FILL PATTERNS

- Asphalt
- Concrete
- Refuse
- Competent Subgrade
- Rip Rap
- Class II Base
- 1"-Minus Protective Cover Soil (PCS)
- Soil Cement

DETAIL CALLOUTS

A / 4 — Detail Number / Sheet Number

CONSTRUCTION NOTE CALLOUTS

4

LEGEND

- Landfill footprint (unlined)
- Landfill footprint (lined)
- Topo Contours (April 2018 & July 2018)
- Property line
- Grade break
- 1.5:1 Gradient & Direction
- Flow Line / Flow Direction
- MLP-18 Gas probe (protect in place)
- LC-9 Ground water well (protect in place)
- GW-11 Existing landfill gas collection system (protect in place)
- Paved Surface
- Top / Toe Slope
- 3590 Existing surveying control points (protect in place)
- Fiber Roll
- Existing access road
- Gas line (above ground)
- Gas line (buried)
- Refuse Fill Limits
- K-Rail
- Gabion Basket
- Welded Wire Fabric

ABBREVIATIONS

AB	Aggregate Base
AC	Asphalt Concrete
APPROX.	Approximate
BC	Begin Curve
C	Cut
℄ or CL	Center Line
CMP	Corrugated Metal Pipe
CO	Clean out
DIA	Diameter
E	Easting
EC	End Curve
EL	Elevation
EOP	Edge of Pavement
Exist.	Existing
F	Fill
℄ or FL	Flow Line
GB	Grade Break
Hor.	Horizontal
HP	High Point
ID	Inside Diameter
INV	Invert
LF	Linear Feet
L	Length
N	Northing
NAD	North American Datum
NTS	Not To Scale
PI	Point of Intersection
POC	Point on Curve
ℙ or PL	Property Line
PVI	Point of Vertical Intersection
R	Radius
RC	Reinforced Concrete
RCE	Registered Civil Engineer
RCFC	Riverside County Flood Control
STA	Station
TOE	Toe of Slope
TS	Top of Slope
TYP	Typical
Vert.	Vertical

INDEX OF DRAWINGS

SHEET	FILE NAME	TITLE	SCALE
1	S01_Title.dgn	Title Sheet	NTS
2	S02_BA Index Legend and Vicinity Map.dgn	Badlands Index, Legend, & Vicnity Map	NTS
3	S03_BA Site Map.dgn	Badlands Site Map	1"=450'
4	S04_Construction Details.dgn	Construction Details	NTS
5	S05_Construction Details.dgn	Construction Details	NTS
6	S06_25' Litter Fence Details	25' Foot Tall Litter Fence Alignment A & Details	NTS
7	S06_25' Litter Fence Details	25' Foot Tall Litter Fence Alignment B & Details	NTS

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

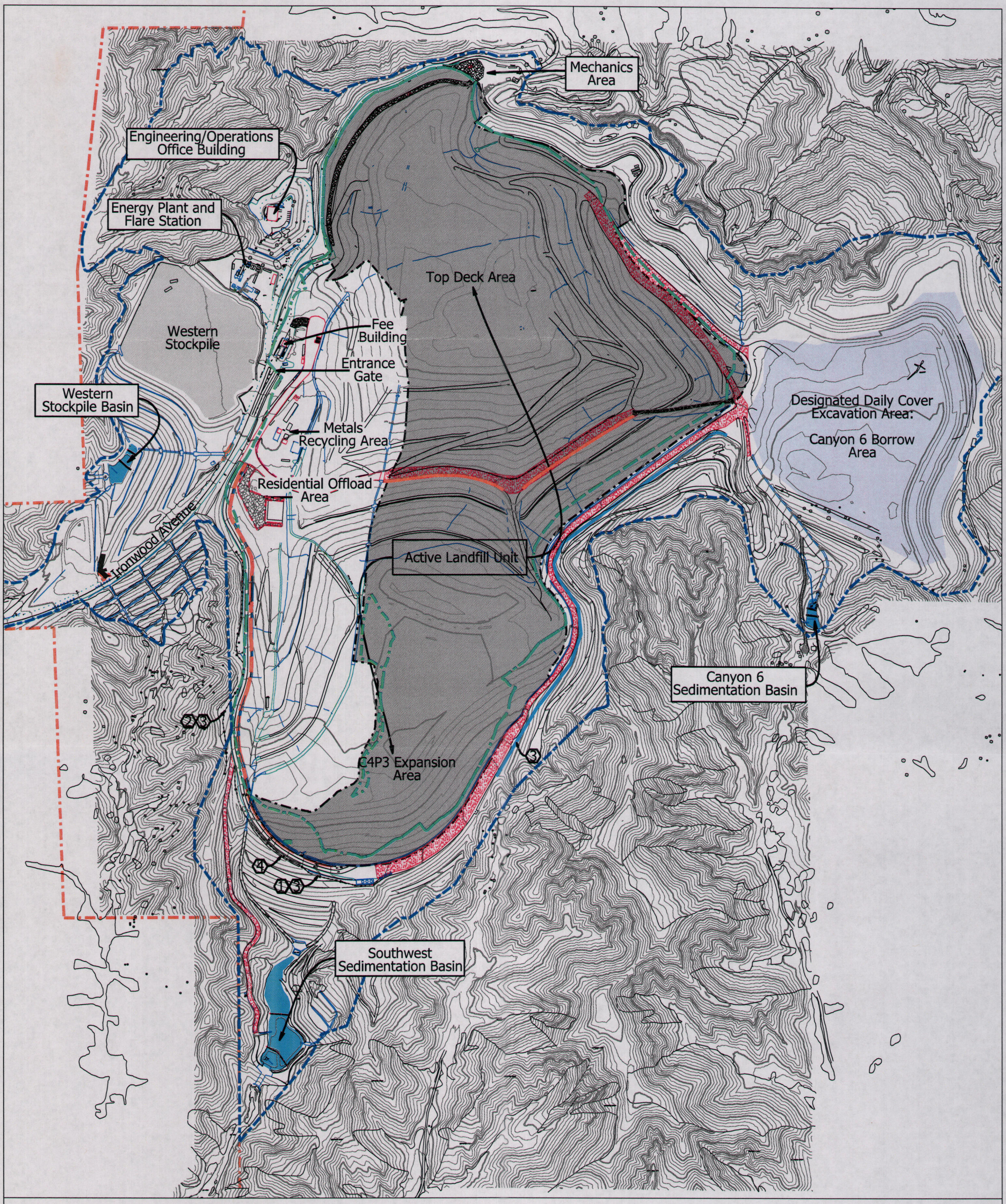
NTS

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
TOPO DATE:	-
SCALE:	NTS
PATH:	-
PATH:	Daily Cover and On-Call Drainage\
PATH/FILE:	Plan Sheets\S03_BA Index Legend and Vicinity Map.dgn

Badlands and Lamb Canyon Sanitary Landfill
Daily Cover Excavation and On-Call Site Improvements
August 2018

Badlands Index, Legend and Vicinity Map

SHEET 2 OF 7



CONSTRUCTION NOTES:

① CONSTRUCT 25' FOOT TALL LITTER FENCE ALIGNMENT "A" IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND SHEET 6.

② CONSTRUCT 25' FOOT TALL LITTER FENCE ALIGNMENT "B" IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND SHEET 7.

③ CONSTRUCT SILT FENCE ACCORDANCE WITH PROJECT SPECIFICATIONS AND DETAIL C ON SHEET 4.

④ REMOVE EXISTING GEOTEXTILE AND EARTHERN BERM, AND TO HAUL EARTHERN MATERIAL TO ACTIVE PAD AS DIRECTED BY COUNTY.

Legend

- Current Contours (10 ft)
- Property Line
- Permitted Disturbance Limits (268 acres)
- Edge of Fill
- Fill Area (150 ac) (LINED AREA / UNLINED AREA)
- Existing Concrete Hardscape
- Existing Asphalt Concrete Hardscape
- Existing Gas Header Pipe
- Existing Soil Cement Road
- Existing Access Road
- Silt Fence

REVISIONS	BY	APPRVD	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

Scale: 1" = 900' (8.5x11), 1"= 450' (11x17)

0 225 450 675 900 1125

Datum is mean sea level. Contour interval is 10 ft.

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
PHOTO DATE:	April, 2018
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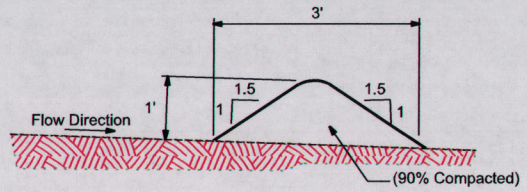
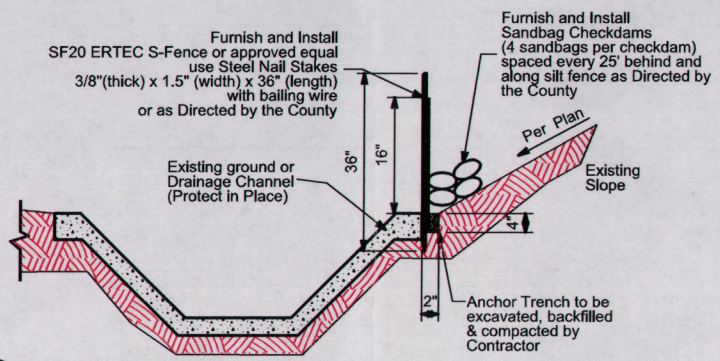
PATH:	Daily Cover Excavation & On Call Site Improvements 2018
PATH:	S05_BA Site Map.dgn
MODEL:	Default

Badlands Site Map



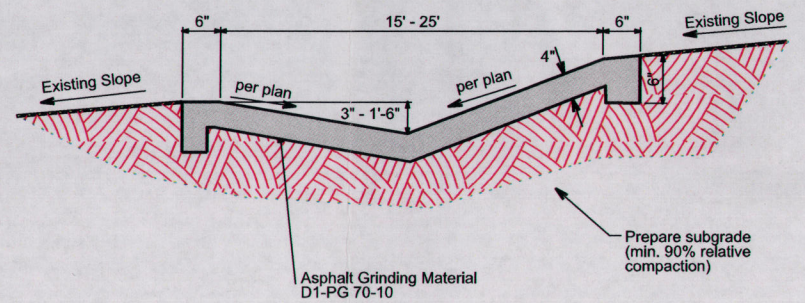
A Diversion Berm Typical Section

Not To Scale



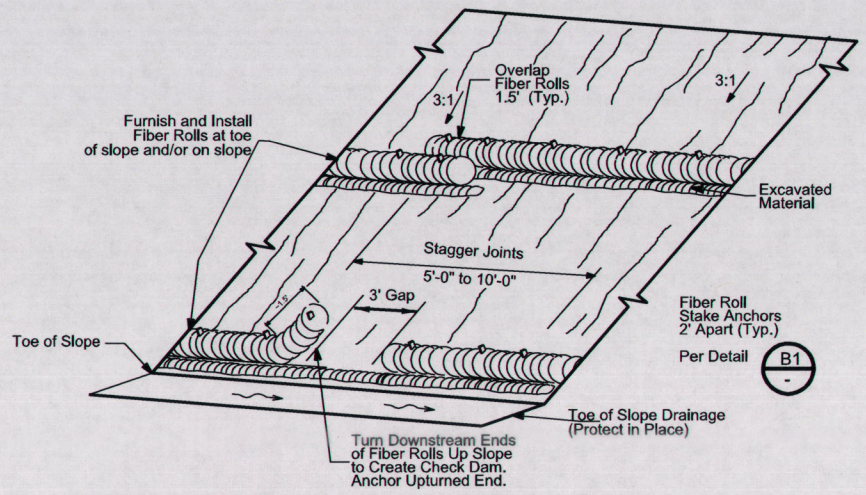
C S–Fence Installation Cross Section

Not To Scale



E Bench Crossing Cross Section

Not To Scale



B Fiber Rolls Installation Detail

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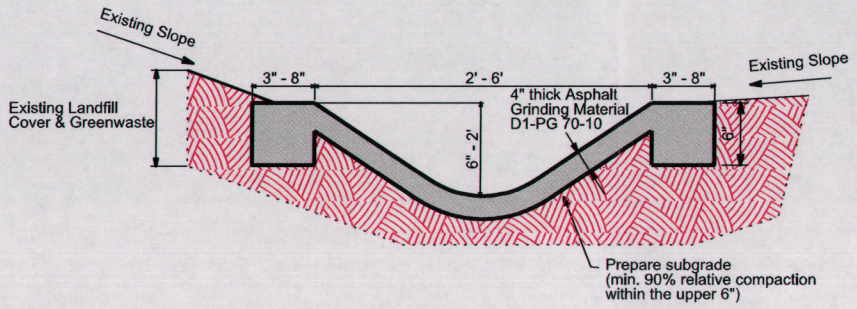

D Asphalt Swale Detail

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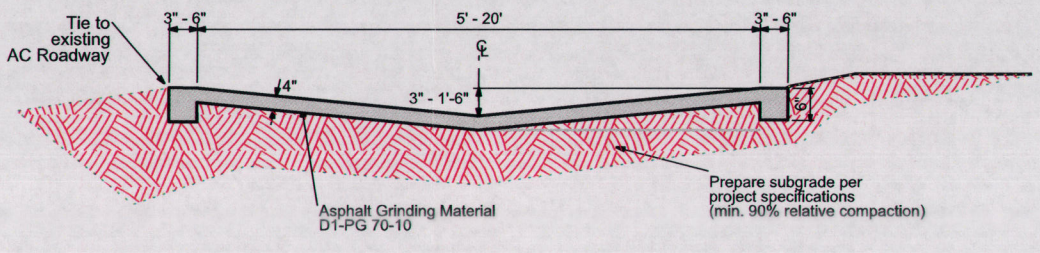
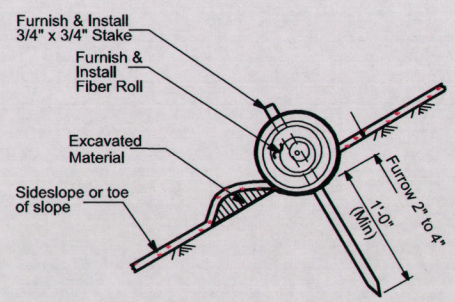


F Asphalt Cross Gutter Cross Section

Not To Scale



B1 Fiber Roll Anchor Detail

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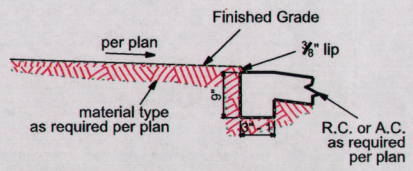


Notes:

1. Material type shall be as required in the specific detail
2. These dimensions shall be utilized unless otherwise specified in the specific details or as requested by the County

G Cut–off Wall Typical Section

Not To Scale

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

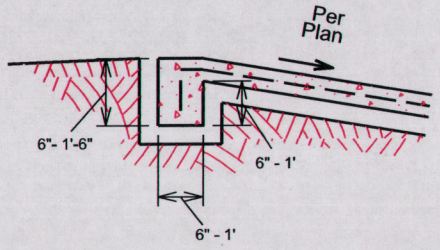
NTS

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
TOPO DATE:	-
SCALE:	NTS
PATH:	T:\sites\Badlands\ Special Projects\
PATH:	Daily Cover and On-Call Drainage\
PATH/FILE:	Plan Sheets\SS6_Construction Details.dgn

Badlands and Lamb Canyon Sanitary Landfill
Daily Cover Excavation and On-Call Site Improvements
August 2018

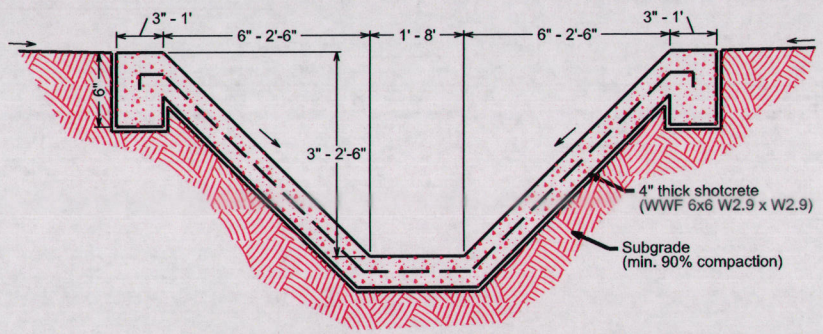
Construction Details

SHEET 4 OF 7



H Bench Crossing Footing

Not To Scale



I Reinforced Shotcrete Swales and Downdrains

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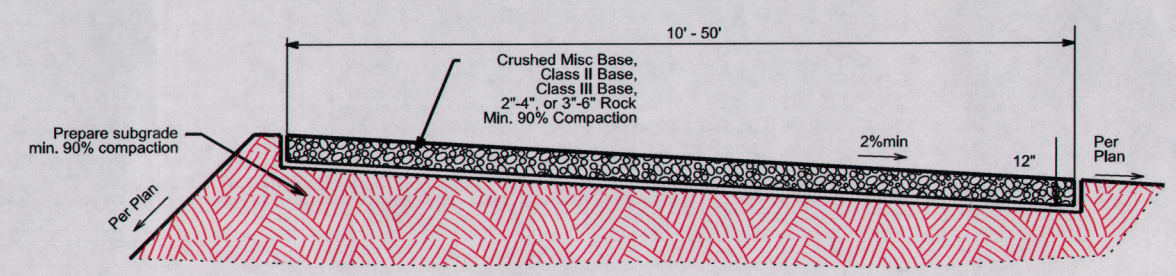
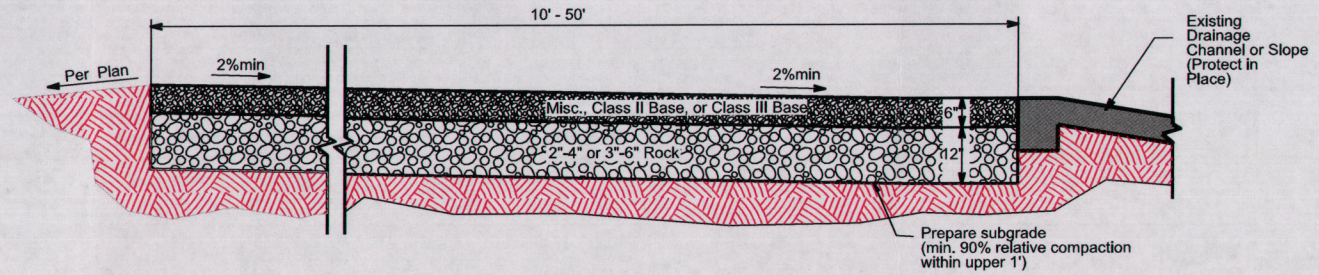


J 12" Thick Aggregate Base Typical Section

Not To Scale



K 18" Thick Layered Aggregate Base Cross Section

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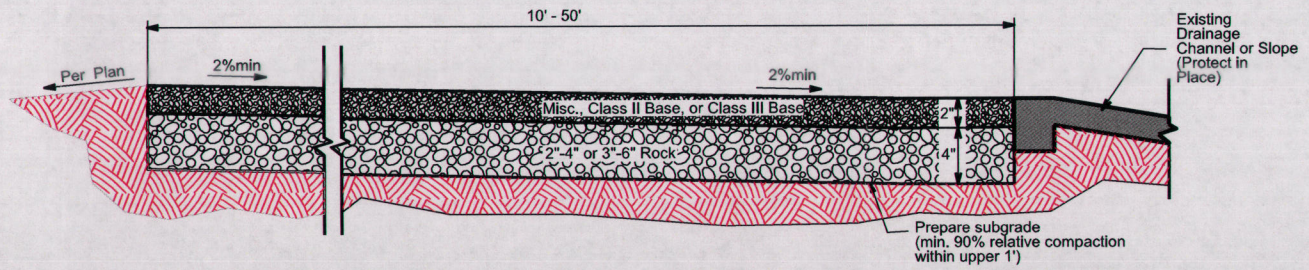

L 6" Thick Layered Aggregate Base Cross Section

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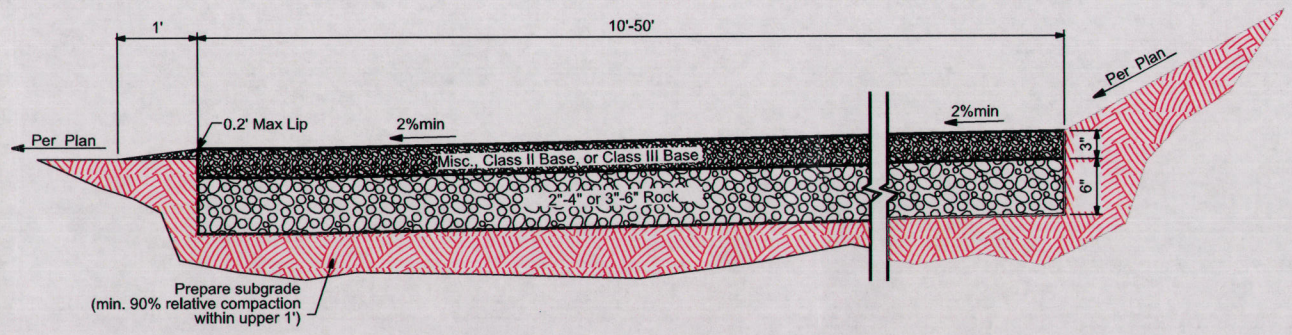


M 9" Thick Layered Aggregate Base Cross Section

Not To Scale

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

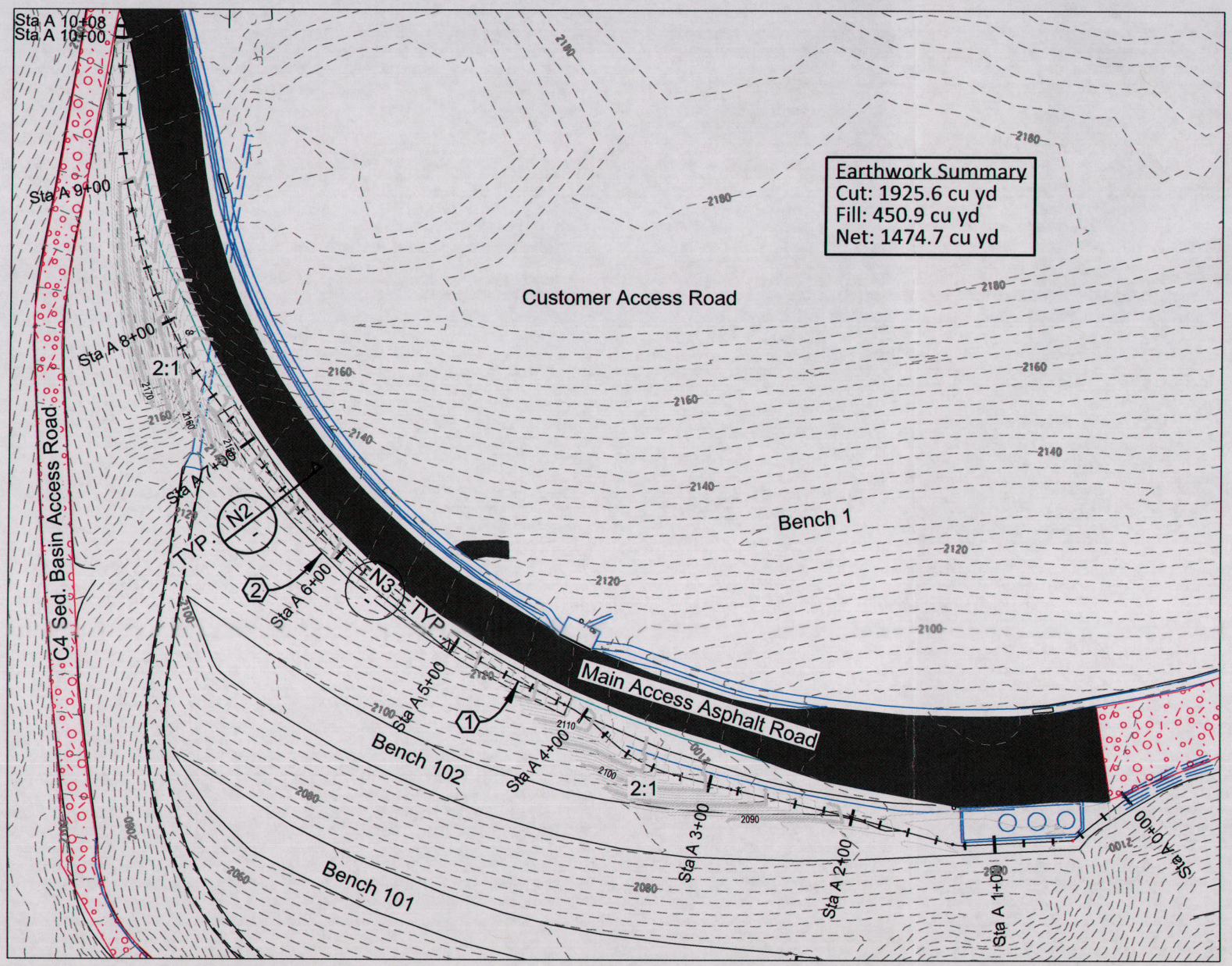
NTS

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
TOPO DATE:	-
SCALE:	NTS
PATH:	T:\sites\Badlands\ Special Projects\
PATH:	Daily Cover and On-Call Drainage\
PATH/FILE:	Plan Sheets\SSF_Construction Details.dgn

Badlands and Lamb Canyon Sanitary Landfill
Daily Cover Excavation and On-Call Site Improvements
August 2018

Construction Details

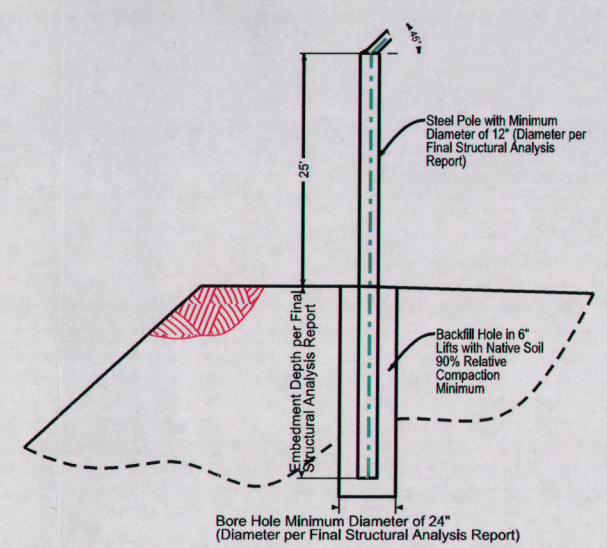
SHEET 5 OF 7



N1 Litter Fence Alignment (Phase A)

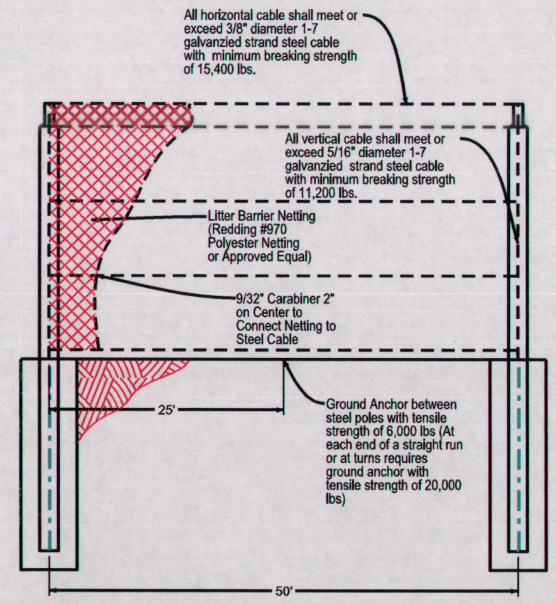
Scale: 1" = 200' (8.5x11), 1" = 100' (11x17)

Scale: 1" = 100'
0 50 100 150 200 250
Datum is mean sea level



N2 Typical Litter Fence Cross Section

Not To Scale



N3 Typical Litter Fence Elevation

Not To Scale

CONSTRUCTION NOTE

1. CONSTRUCT SILT FENCE ALONG FENCE ALIGNMENT AS NOTED ON SHEET 3.
2. REMOVE EXISTING GEOTEXTILE AND EARTHERN BERM, AND TO HAUL EARTHERN MATERIAL TO ACTIVE PAD AS DIRECTED BY COUNTY.

Note:
Unless otherwise specified in the final structural analysis report, the removable litter fence components shall consist of, but not limited to, components noted in the following details N2 and N3.

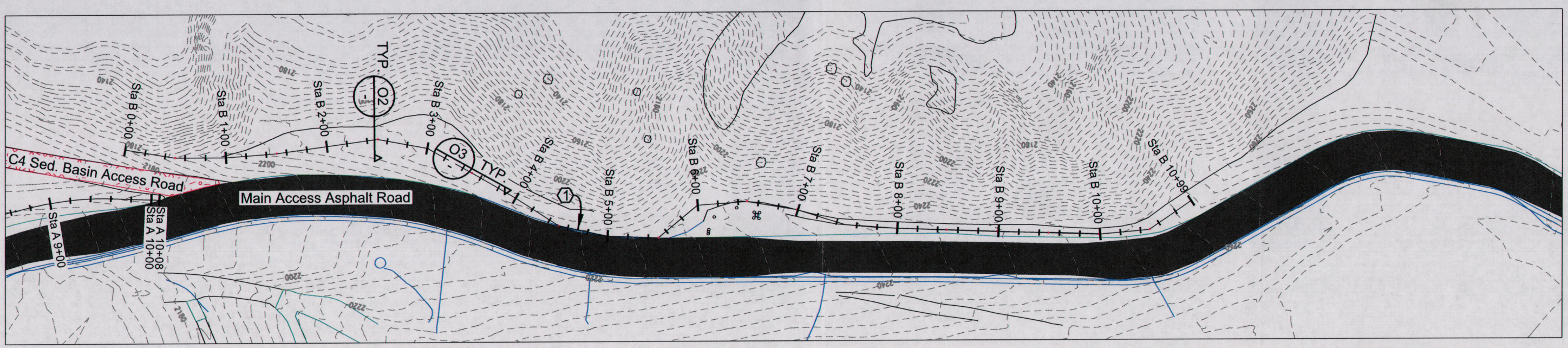
NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES
Hans Kernkamp, General Manager/Chief Engineer
NTS

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
TOPO DATE:	-
SCALE:	NTS
PATH:	T:\sites\Badlands\ Special Projects\
PATH:	Daily Cover and On-Call Drainage\
PATH/FILE:	Plan Sheets\SDB_25' Litter Fence_Details.dgn

Badlands and Lamb Canyon Sanitary Landfill
Daily Cover Excavation and On-Call Site Improvements
August 2018

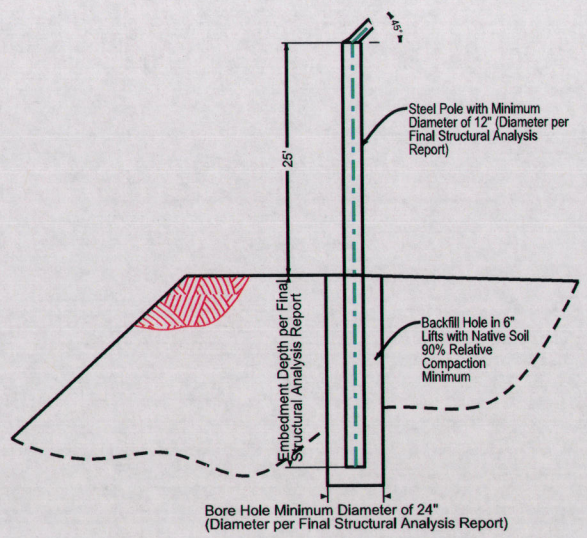
25' Foot Tall Litter Fence Alignment A & Details



O1 Litter Fence Alignment (Phase B)

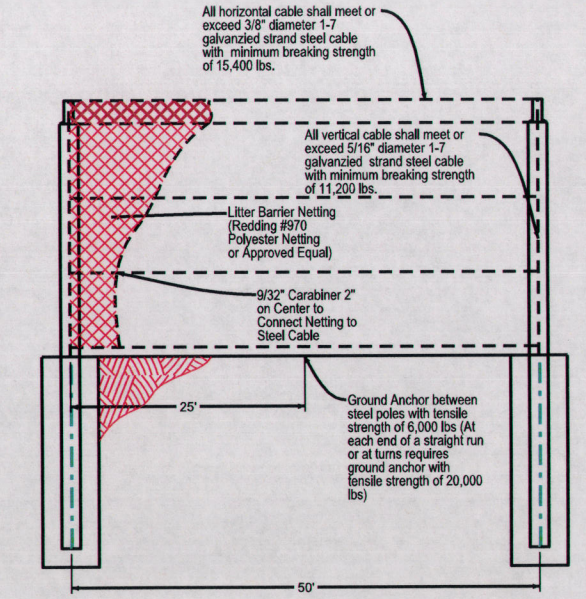
Scale: 1" = 200' (8.5x11), 1" = 100' (11x17)

Scale: 1" = 100'
0 50 100 150 200 250
Datum is mean sea level



O2 Typical Litter Fence Cross Section

Not To Scale



O3 Typical Litter Fence Elevation

Not To Scale

CONSTRUCTION NOTE

1. CONSTRUCT SILT FENCE ALONG FENCE ALIGNMENT AS NOTED ON SHEET 3.

Note:
Unless otherwise specified in the final structural analysis report, the removable litter fence components shall consist of, but not limited to, components noted in the following details O2 and O3.

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES
Hans Kernkamp, General Manager/Chief Engineer
NTS

DESIGNED BY:	PT
DRAWN BY:	PT
CHECKED BY:	MR
DRAWING DATE:	July 2018
TOPO DATE:	-
SCALE:	NTS
PATH:	T:\sites\Badlands\ Special Projects\
PATH:	Daily Cover and On-Call Drainage\
PATH/FILE:	Plan Sheets\508_25' Litter Fence_Details.dgn

Badlands and Lamb Canyon Sanitary Landfill
Daily Cover Excavation and On-Call Site Improvements
August 2018

25' Foot Tall Litter Fence Alignment B & Details

SHEET 7 OF 7

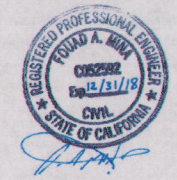
LAMB CANYON SANITARY LANDFILL

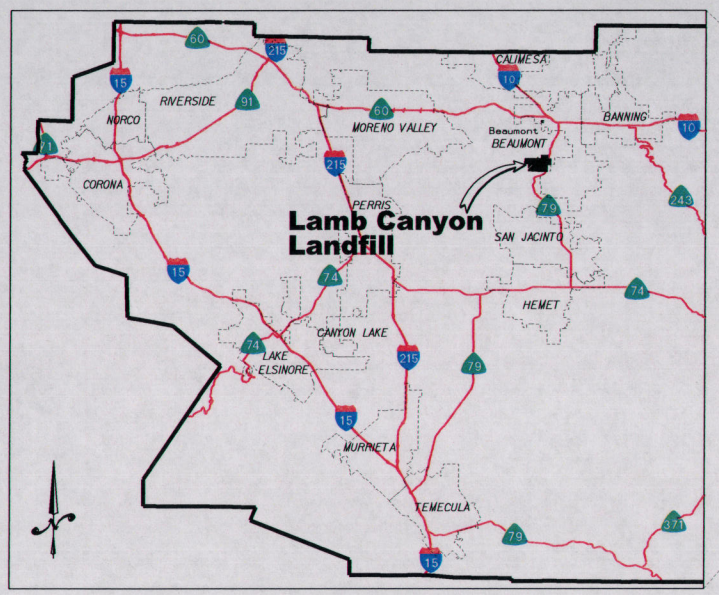
CONSTRUCTION PLANS
FOR
2018 DAILY COVER EXCAVATION &
ON-CALL SITE IMPROVEMENTS

SEPTEMBER 2018

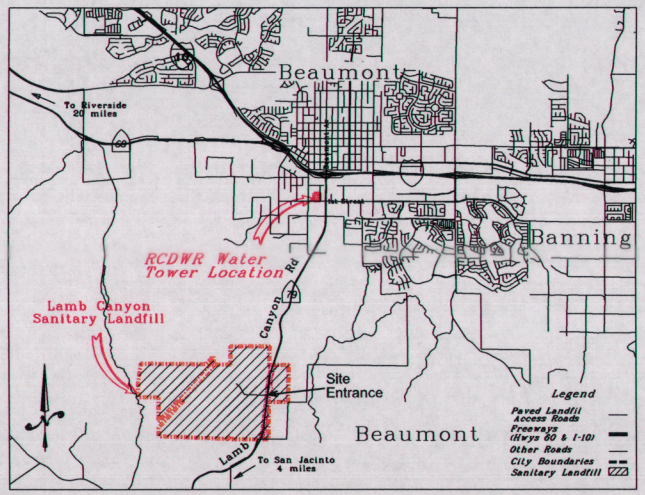
PREPARED BY
DEPARTMENT OF WASTE RESOURCES
HANS KERNKAMP, GENERAL MANAGER/CHIEF ENGINEER
14310 FREDERICK STREET
MORENO VALLEY, CALIFORNIA 92553
TEL. (951) 486-3200 FAX (951) 486-3205

RIVERSIDE COUNTY
DEPARTMENT OF
WASTE RESOURCES





LOCATION MAP
N.T.S.



VICINITY MAP
N.T.S.

FILL PATTERNS

- Asphalt
- Concrete
- Competent Subgrade
- Class II Base
- Greenwaste/Hydroseed
- Refuse

DETAIL CALLOUTS

A / 4 — Detail Number / Sheet Number

CONSTRUCTION NOTE CALLOUTS

(4)

LEGEND

- Landfill footprint (lined)
- Landfill footprint (unlined)
- 2100 — Topo Contours Oct 2015 (areial) & July 2016 (topo)
- PL — Property line
- GB — Grade break
- 1.5:1 — Gradient & Direction
- Flow Line / Flow Direction
- MLP-18 — Gas probe (protect in place)
- LC-9 — Ground water well (protect in place)
- GW-11 — Existing landfill gas collection system (protect in place)
- Paved Surface
- Top / Toe — Slope
- 3590 — Existing surveying control points (protect in place)
- Existing access road
- Gas line (above ground)
- Gas line (buried)
- K-Rail
- Welded Wire Fabric

ABBREVIATIONS

AB	Aggregate Base
AC	Asphalt Concrete
APPROX.	Approximate
BC	Begin Curve
C	Cut
℄ or CL	Center Line
CMP	Corrugated Metal Pipe
CO	Clean out
DIA	Diameter
E	Easting
EC	End Curve
EL	Elevation
EOP	Edge of Pavement
Exist.	Existing
F	Fill
℄ or FL	Flow Line
GB	Grade Break
Hor.	Horizontal
HP	High Point
ID	Inside Diameter
INV	Invert
L	Length
LDPE	Low Density Polyethylene
LF	Linear Feet
N	Northing
NAD	North American Datum
NTS	Not To Scale
PI	Point of Intersection
POC	Point on Curve
ℙ or PL	Property Line
PVI	Point of Vertical Intersection
R	Radius
RC	Reinforced Concrete
RCDWR	Riverside County Department of Waste Resources
RCE	Registered Civil Engineer
RCFC	Riverside County Flood Control
STA	Station
TOE	Toe of Slope
TS	Top of Slope
TYP	Typical
Vert.	Vertical
WRP	Waste Recycle Park

INDEX OF DRAWINGS

SHEET	FILE NAME	TITLE	SCALE
1	LC_2018_Site_Improvements_S1_Title.dgn	Title Sheet	NTS
2	LC_2018_Site_Improvements_S2_Index.dgn	Index, Legend, & Vicinity Map	NTS
3	LC_2018_Site_Improvements_S3_Map.dgn	Site Map of Improvements	1"=350'
4	LC_2018_Site_Improvements_S4_WRP.dgn	Litter Fence and Asphalt Pad Layout	1"=50'
5	LC_2018_Site_Improvements_S5_Basin.dgn	Basin Improvements Layout	1"=15'
6	LC_2018_Site_Improvements_S6_TopDeck.dgn	Drainage System Improvements Layout	1"=100'
7	LC_2018_Site_Improvements_S7-S11_Details.dgn	Construction Details	NTS
8	LC_2018_Site_Improvements_S7-S11_Details.dgn	Construction Details	NTS
9	LC_2018_Site_Improvements_S7-S11_Details.dgn	Construction Details	NTS
10	LC_2018_Site_Improvements_S7-S11_Details.dgn	Construction Details	NTS
11	LC_2018_Site_Improvements_S7-S11_Details.dgn	Construction Details	NTS
12	LC_2018_Site_Improvements_S12-S14_Photos.dgn	Photos of Existing Site Conditions	NTS
13	LC_2018_Site_Improvements_S12-S14_Photos.dgn	Photos of Existing Site Conditions	NTS
14	LC_2018_Site_Improvements_S12-S14_Photos.dgn	Photos of Existing Site Conditions	NTS
15	LC_2018_Site_Improvements_S15_PercBasin.dgn	Percolation Basin Layout	1"=40'
16	LC_2018_Site_Improvements_S16_PercBasin_Details.dgn	Percolation Basin Details	NTS
17	LC_2018_Site_Improvements_S17_PercBasin_Details.dgn	Percolation Basin Details	NTS

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES
Hans Kernkamp, General Manager/Chief Engineer
NTS

DESIGNED BY:	-
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	-
SCALE:	NTS
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PATH:	Drainage Improvements\ Project Drawings\
PATH/FILE:	LC_2018_Site_Improvement_S2_Index.dgn

REGISTERED PROFESSIONAL ENGINEER — TODD A. MINA — C052592 — Exp 12/31/18 — CIVIL — STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation &
On-Call Site Improvements

Index, Legend, and Vicinity Map

SHEET 2 OF 17

CONSTRUCTION NOTES

1. REMOVE AND SALVAGE 4"THICK LAYER OF EXISTING CLASS II BASE MATERIAL AND CONSTRUCT 4" THICK ASPHALT PAD IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS. (BID ITEM NO.20) (EXISTING CONDITIONS SEE PHOTO 1, SHEET 12)
2. CONSTRUCT 25-FOOT TALL STATIONARY LITTER CONTAINMENT FENCE IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS. (BID ITEM NO.17) (EXISTING CONDITIONS SEE PHOTO 2, SHEET 12)
3. CONSTRUCT 4" THICK CRUSHED MISCELLANEOUS BASE (CMB) OVER 6" THICK ROCK (2"-4" ROCK SIZE) ROAD SECTION WITHIN LIMITS SHOWN AND IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS & DETAILS (BID ITEM NO. 10 AND NO. 13) (EXISTING CONDITIONS SEE PHOTOS 6, 7, and 8, SHEET 13)
4. CONSTRUCT 4" THICK ASPHALT DRAINAGE STRUCTURES IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS (BID ITEM NO. 8) (EXISTING CONDITIONS SEE PHOTO 11, SHEET 14)
5. CONSTRUCT EARTHEN DIVERSION BERMS IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND DETAILS (BID ITEM NO.5a & 5b) (EXISTING CONDITIONS SEE PHOTO 11, SHEET 14)
6. RE-GRADE LANDFILL BENCHES TO REESTABLISH CROSS FALL AND PROPER DRAINAGE AND APPLY PROCESSED GREENWASTE SECTION IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.18 AND 24) (EXISTING CONDITIONS SEE PHOTO 10, SHEET 14)
7. CONSTRUCT 4" THICK REINFORCED CONCRETE PAD AND SLOPE PROTECTION IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.18) (EXISTING CONDITIONS SEE PHOTO 3, SHEET 12)
8. REMOVE AND SALVAGE 4"THICK ASPHALT GRINDING/BASE MATERIAL ALONG BENCH. REESTABLISH AND RE-GRADE EXISTING EARTHEN DIVERSION BERM. CONSTRUCT 4" THICK SHOTCRETE DRAINAGE CHANNEL IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.19) (EXISTING CONDITIONS SEE PHOTO 5, SHEET 13)
9. REMOVE EXISTING SHOTCRETE RIP-RAP WITHIN LIMITS SHOWN, CONSTRUCT SHOTCRETE STAIRWAY, AND FURNISH AND INSTALL GALVANIZED ALUMINUM RAILING IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.22) (EXISTING CONDITIONS SEE PHOTO 9, SHEET 14)
10. PLACE ENGINEERED FILL IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS (BID ITEM NO.4)
11. FURNISH AND INSTALL PERCOLATION BASIN AND APPURTENANCES IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS (BID ITEM NO.23)

See Sheet 15
See Sheet 4
See Sheet 6
See Sheet 5

Legend:
- 2100 Dec. 2016 (Aerial), Apr. 2018 (GPS), & Projected Landfill Contours
- Limits of Projected Landfill Contours
- Property Line 1,189 acres
- Phase I (Unlined) (~74 ac)
- Phase 2 (Lined) (~70.6 ac)
- Permitted Disposal Area (144.6 ac)
- Landfill Operations Permit Limit

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

Scale: 1" = 350' (11x17)

0 175 350 525 700 875

Datum is mean sea level.

DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	Dec 2016 Aerial & Apr 2018 topo
SCALE:	1" = 350'
PATH:	Engr\sites\lamb\Spec Prj\ 2018 Site
PATH:	Drainage_Improvements\Project Drawings\
FILE:	LC_2018_Site_Improvement_S3_Map.dgn

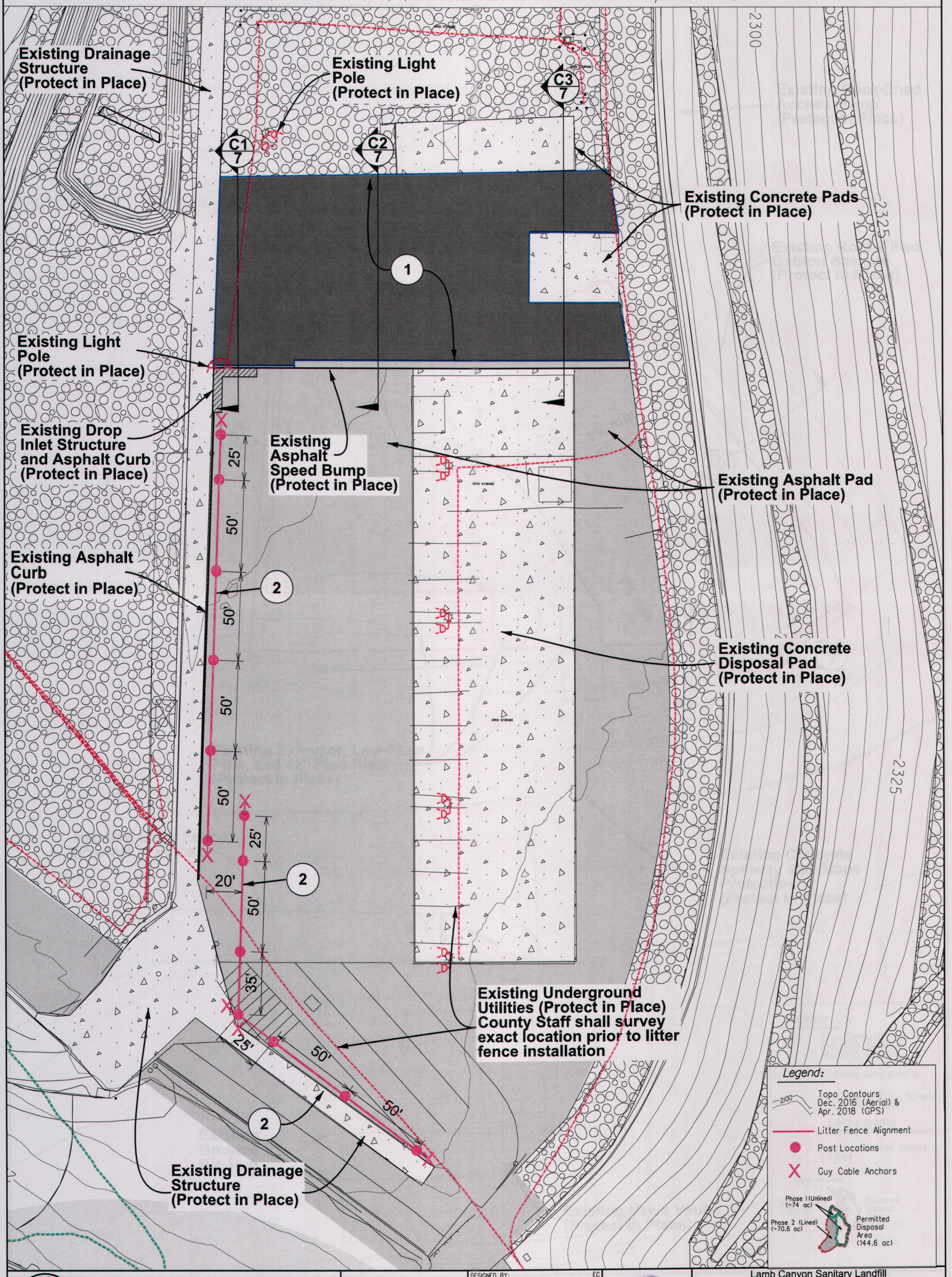
REGISTERED PROFESSIONAL ENGINEER FOUAD A. MINA C052592 Exp 12/31/18 CIVIL STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation & On-Call Site Improvements

Site Map of Improvements

CONSTRUCTION NOTES

1. REMOVE AND SALVAGE 4"THICK LAYER OF EXISTING CLASS II BASE MATERIAL AND CONSTRUCT 4" THICK ASPHALT PAD IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS. (BID ITEM NO.20) (EXISTING CONDITIONS SEE PHOTO 1, SHEET 12)
2. CONSTRUCT 25-FOOT TALL STATIONARY LITTER CONTAINMENT FENCE IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS. (BID ITEM NO.17) (EXISTING CONDITIONS SEE PHOTO 2, SHEET 12)



RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

Scale: 1" = 50' (11x17)

0 25 50 75 100 125

Datum is mean sea level.

DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	Dec 2016 Aerial & Apr 2018 topo
SCALE:	1" = 50'
PATH:	Engr\sites\lamb\Spec Prj\ 2018 Site
PATH:	Drainage_Improvements\Project Drawings\
FILE:	LC_2018_Site_Improvement_S4_WRP.dgn

REGISTERED PROFESSIONAL ENGINEER FOUAD A. MINA C052592 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

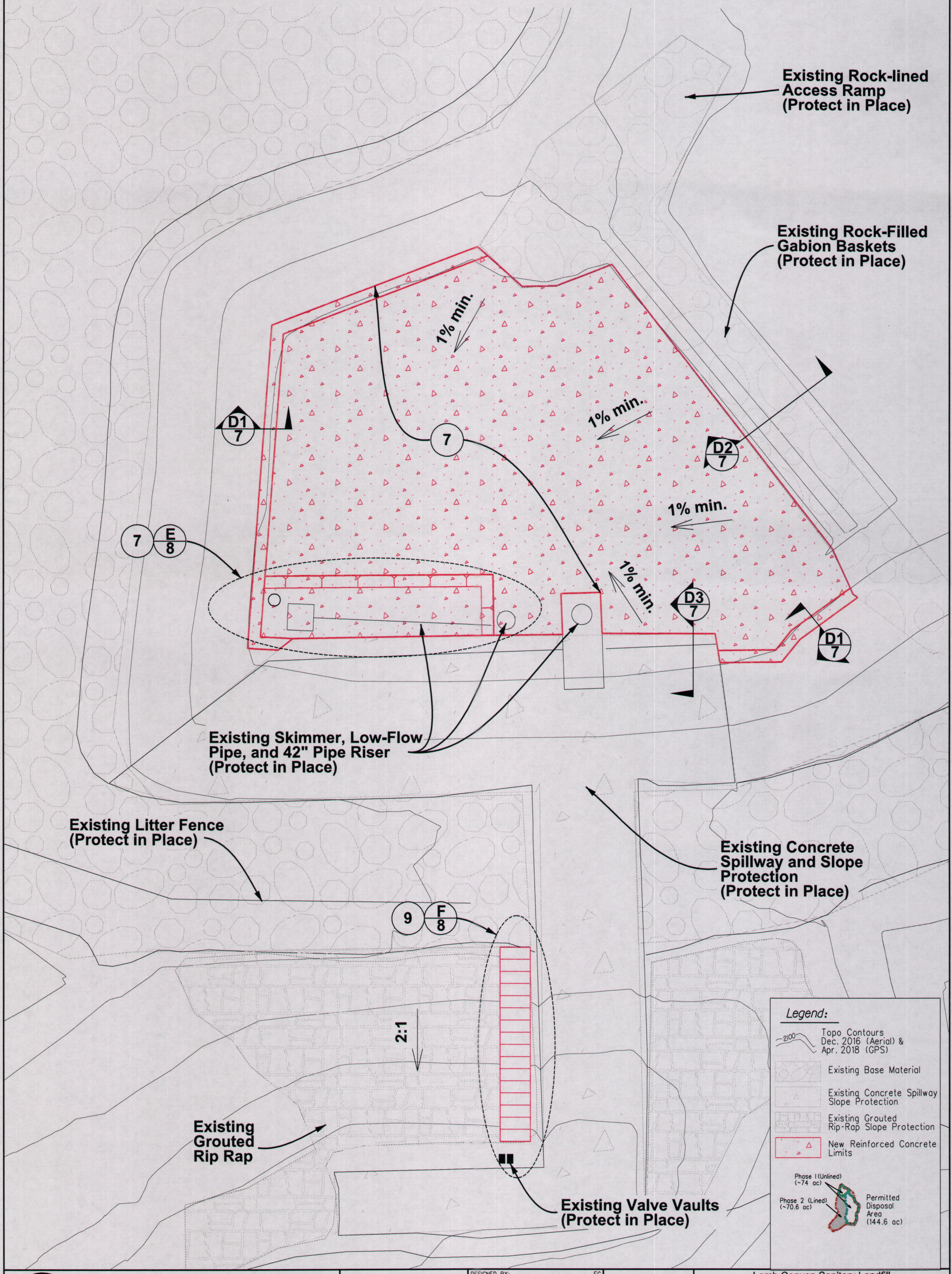
Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation & On-Call Site Improvements

Litter Fence and Asphalt Pad Layout

CONSTRUCTION NOTES

(7) CONSTRUCT 4" THICK REINFORCED CONCRETE PAD AND SLOPE PROTECTION IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.18) (EXISTING CONDITIONS SEE PHOTO 3, SHEET 12)

(9) REMOVE EXISTING SHOTCRETE RIP-RAP WITHIN LIMITS SHOWN, CONSTRUCT SHOTCRETE STAIRWAY, AND FURNISH AND INSTALL GALVANIZED ALUMINUM RAILING IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.22) (EXISTING CONDITIONS SEE PHOTO 9, SHEET 14)



RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

Scale: 1" = 15' (11x17)

0 7.5 15 22.5 30 37.5

Datum is mean sea level.

DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	Dec 2016 Aerial & Apr 2018 topo
SCALE:	1" = 15'
PATH:	Engr\sites\lamb\Spec Prj\ 2018_Site
PATH:	Drainage_Improvements\Project Drawings\
FILE:	LC_2018_Site_Improvement_S5_Basin.dgn

REGISTERED PROFESSIONAL ENGINEER FOUAD A. MINA C052592 Exp. 12/31/18 CIVIL STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation & On-Call Site Improvements

Basin Improvements Layout

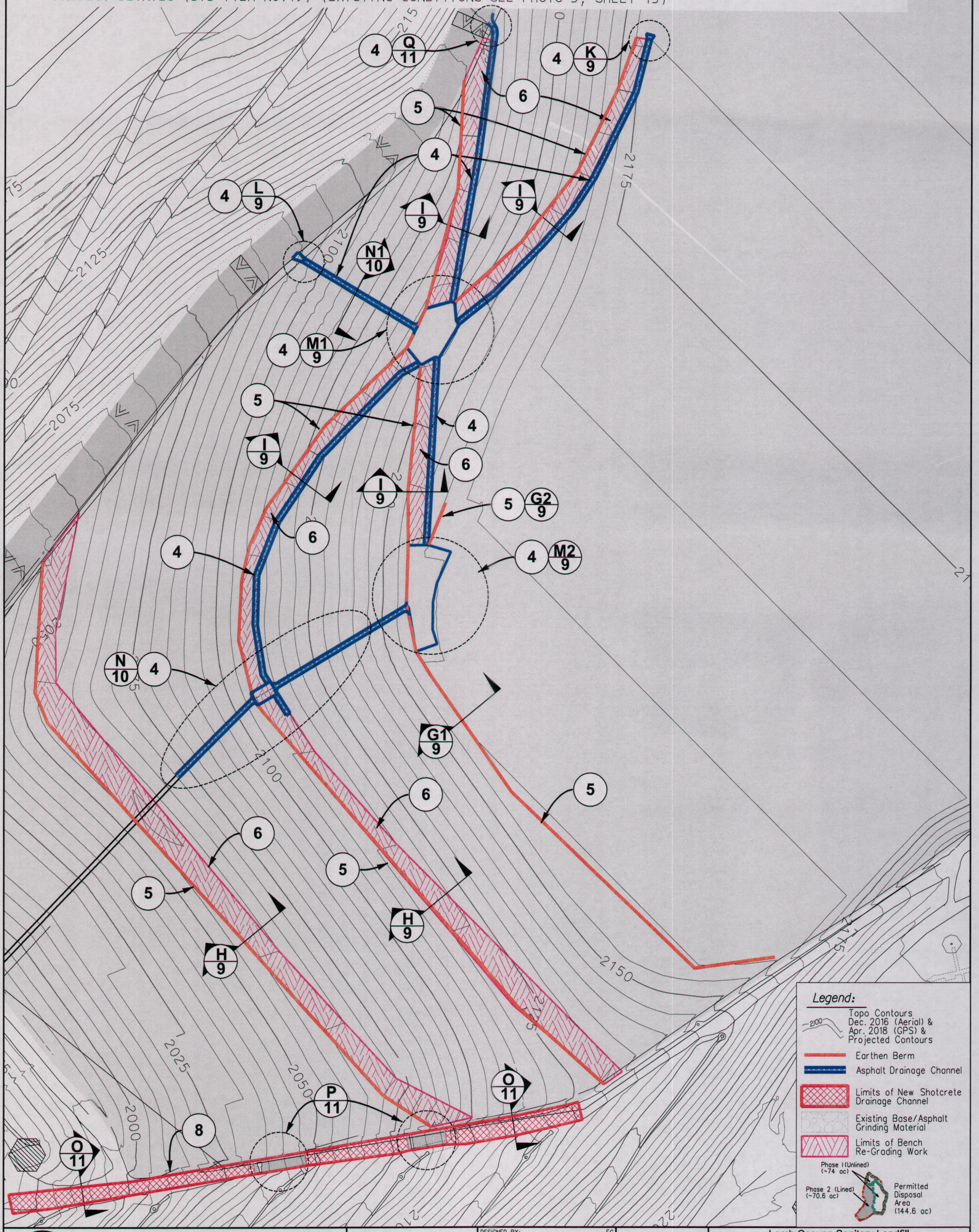
CONSTRUCTION NOTES

(4) CONSTRUCT 4" THICK ASPHALT DRAINAGE STRUCTURES IN ACCORDANCE WITH THE APPLICABLE PROJECT SPECIFICATIONS AND DETAILS (BID ITEM NO. 8) (EXISTING CONDITIONS SEE PHOTO 11, SHEET 14)

(5) CONSTRUCT EARTHEN DIVERSION BERMS IN ACCORDANCE WITH THE APPLICABLE SPECIFICATIONS AND DETAILS (BID ITEM NO.5a & 5b) (EXISTING CONDITIONS SEE PHOTO 11, SHEET 14)

(6) RE-GRADE LANDFILL BENCHES TO REESTABLISH CROSS FALL AND PROPER DRAINAGE AND APPLY PROCESSED GREENWASTE SECTION IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.18 AND 24) (EXISTING CONDITIONS SEE PHOTO 10, SHEET 14)

(8) REMOVE AND SALVAGE 4"THICK ASPHALT GRINDING/BASE MATERIAL ALONG BENCH. REESTABLISH AND RE-GRADE EXISTING EARTHEN DIVERSION BERM. CONSTRUCT 4" THICK SHOTCRETE DRAINAGE CHANNEL IN ACCORDANCE WITH THE APPLICABLE PROJECT DETAILS (BID ITEM NO.19) (EXISTING CONDITIONS SEE PHOTO 5, SHEET 13)



RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

Scale: 1" = 100' (11x17)

0 50 100 150 200 250

Datum is mean sea level.

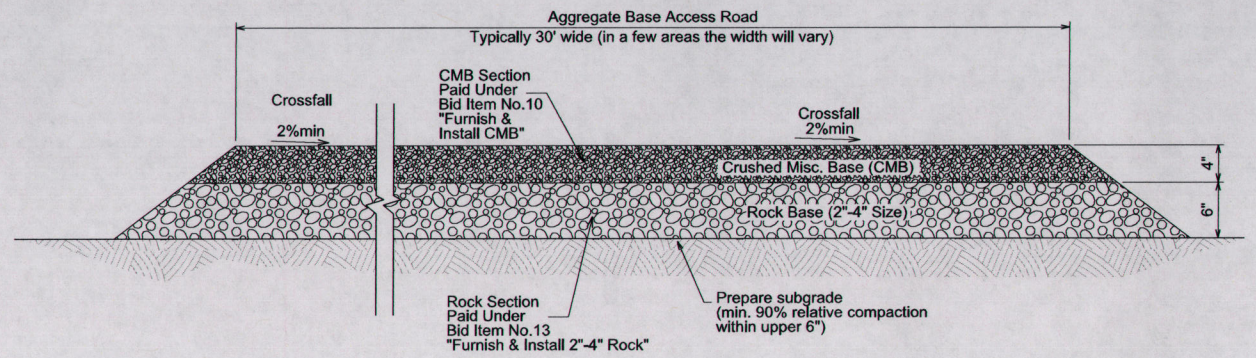
DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	Dec16(Aerial), Apr18(topo) & Projected
SCALE:	1" = 100'
PATH:	Engr\sites\lamb\Spec Prj\ 2018 Site
PATH:	Drainage_Improvements\Project Drawings\
FILE:	LC_2018_Site_Improvement_S6_TopDeck.dgn

REGISTERED PROFESSIONAL ENGINEER FOUAD A. MINA C052592 Exp 12/31/18 CIVIL STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation & On-Call Site Improvements

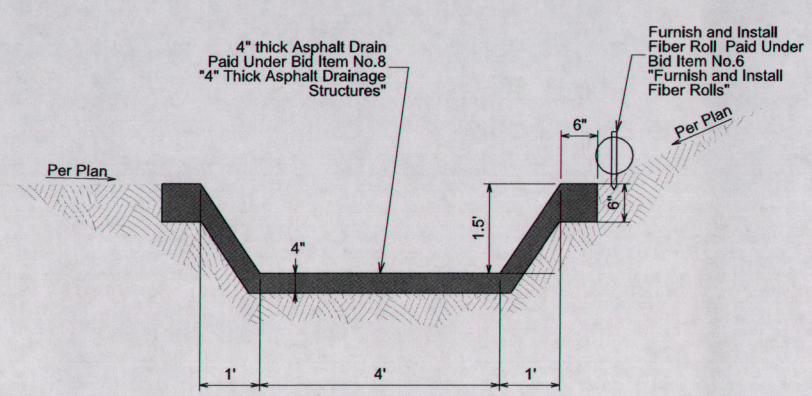
Draiange System Improvements Layout

SHEET 6 OF 17



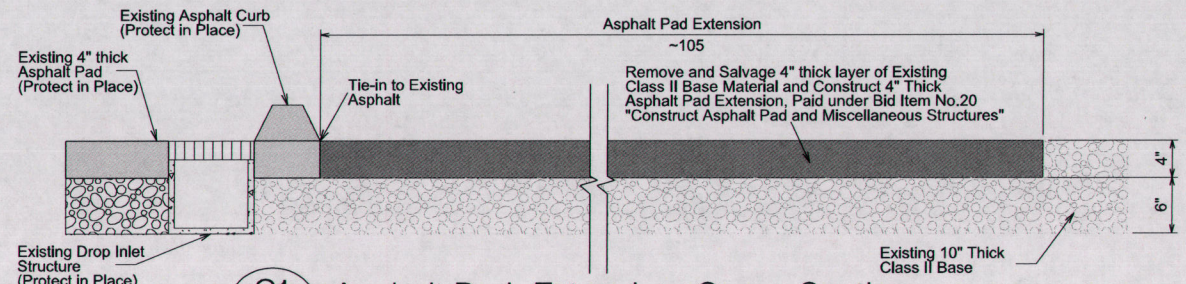
A Aggregate Base Access Road Section

Not To Scale Existing Site Conditions See Photos 6, 7, and 8, Sheet 13



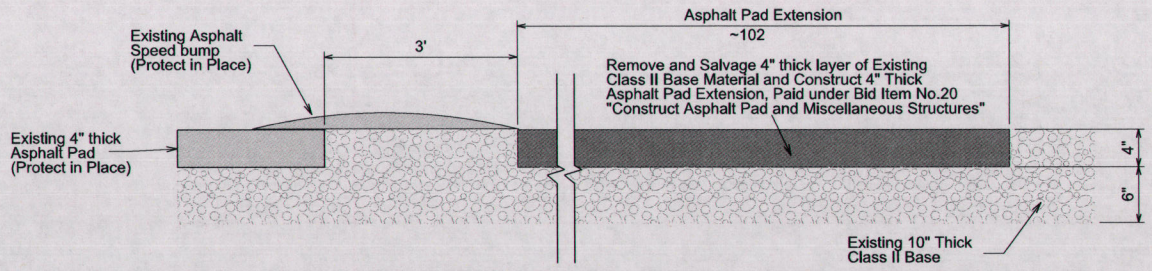
B Asphalt Drainage Structure

Not To Scale



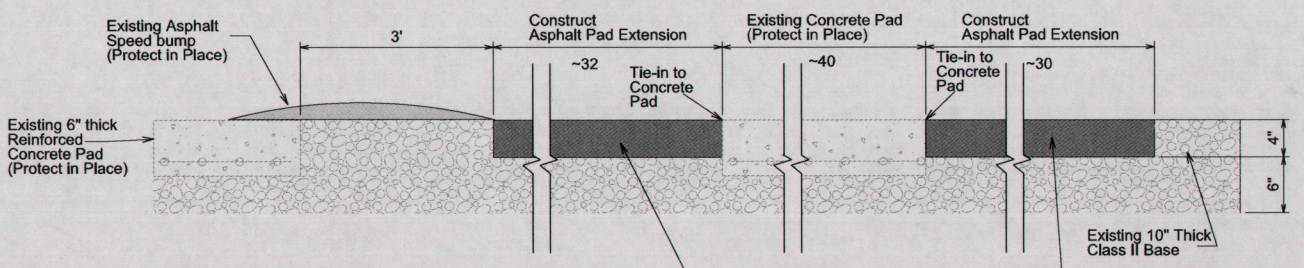
C1 Asphalt Pad Extension Cross Section

Not To Scale Existing Site Conditions See Photo 1, Sheet 12



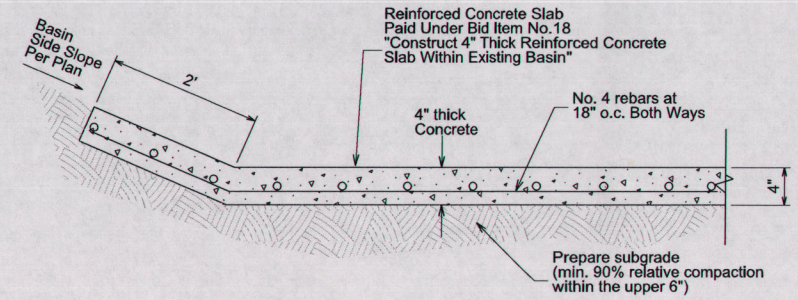
C2 Asphalt Pad Extension Cross Section

Not To Scale Existing Site Conditions See Photo 1, Sheet 12



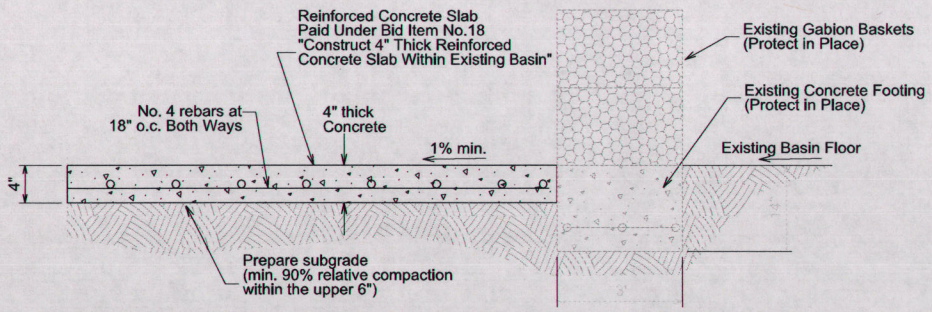
C3 Asphalt Pad Extension Cross Section

Not To Scale Existing Site Conditions See Photo 1, Sheet 12



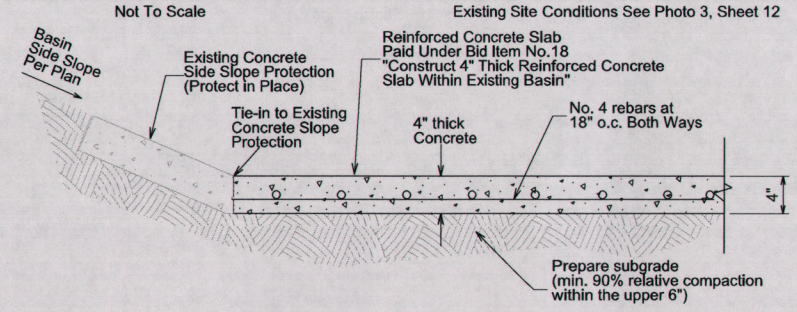
D1 Basin Reinforced Concrete Pad Cross Section

Not To Scale Existing Site Conditions See Photo 3, Sheet 12



D2 Basin Reinforced Concrete Pad Cross Section

Not To Scale Existing Site Conditions See Photo 3, Sheet 12



D3 Basin Reinforced Concrete Pad Cross Section

Not To Scale Existing Site Conditions See Photo 3, Sheet 12

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

NTS

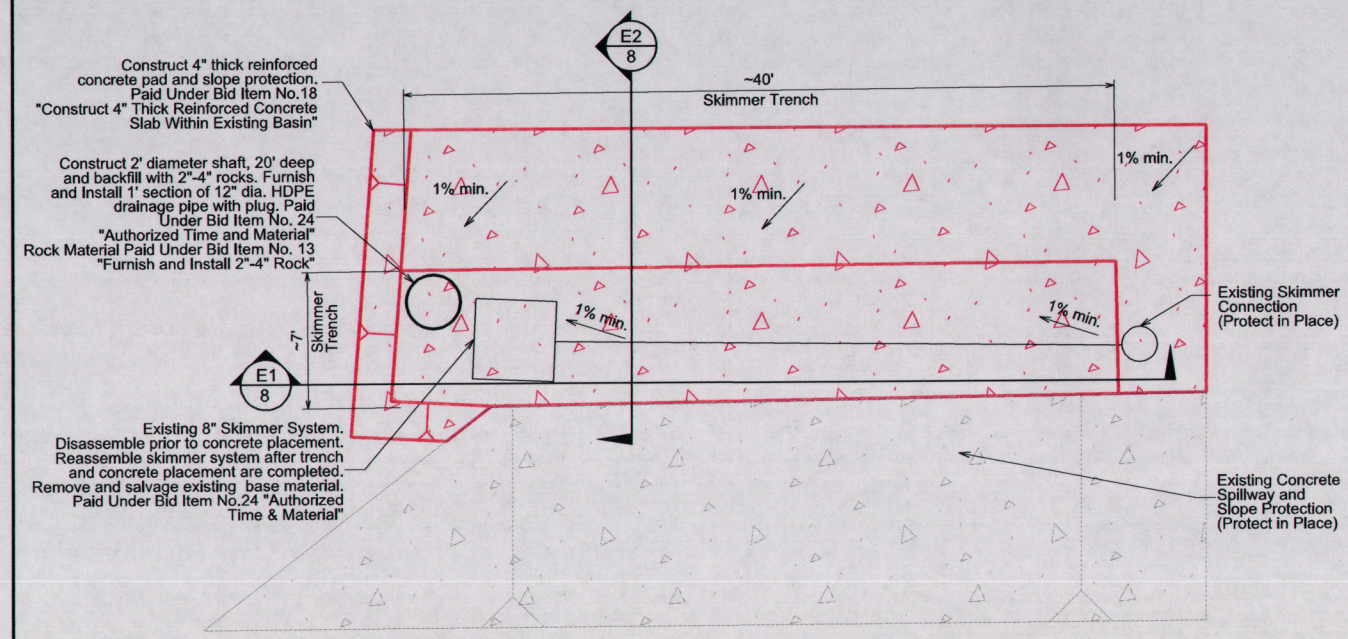
DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	-
SCALE:	NTS
PATH: Engr\sites\lamb\Spec Prj\ 2018 Site	
PATH:Drainage_Improvements\Project Drawings\	
PATH/FILE:LC_2018_Site_Improvement_S7-S11_Details.dgn	

REGISTERED PROFESSIONAL ENGINEER
EDUARD A. MIKA
No. C52782
Exp. 12/31/18
CIVIL
STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation &
On-Call Site Improvements

Construction Details

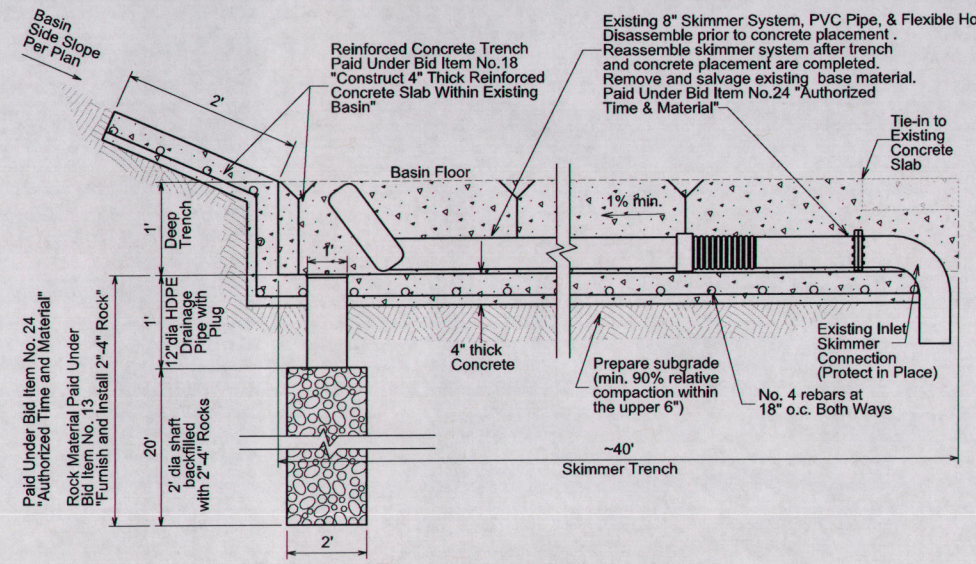
SHEET 7 OF 17



E Concrete Trench for Skimmer Assembly

Not To Scale

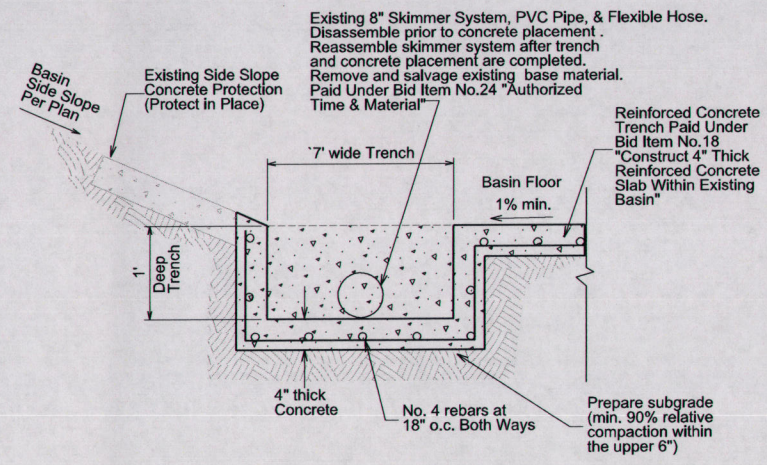
Existing Site Conditions See Photo 4, Sheet 12



E1 Concrete Trench Cross Section

Not To Scale

Existing Site Conditions See Photo 4, Sheet 12



E2 Concrete Trench Cross Section

Not To Scale

Existing Site Conditions See Photo 4, Sheet 12

F Shotcrete Stairway Layout

Not To Scale

Existing Site Conditions See Photo 9, Sheet 14

F1 Shotcrete Stairway Cross Section

Not To Scale

Existing Site Conditions See Photo 9, Sheet 14

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

NTS

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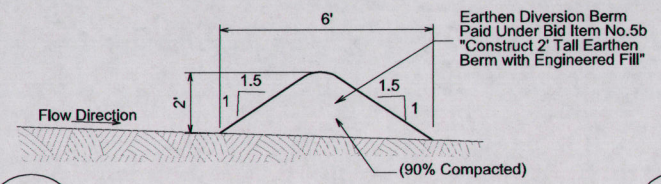
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	-
SCALE:	NTS
PATH: Engr\sites\lamb\Spec Prj\ 2018 Site	
PATH:Drainage_Improvements\Project Drawings\	
PATH/FILE:LC_2018_Site_Improvement_S7-S11_Details.dgn	

REGISTERED PROFESSIONAL ENGINEER — POUAD A. MIMI — C052592 — Exp.12/31/18 — CIVIL — STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation &
On-Call Site Improvements

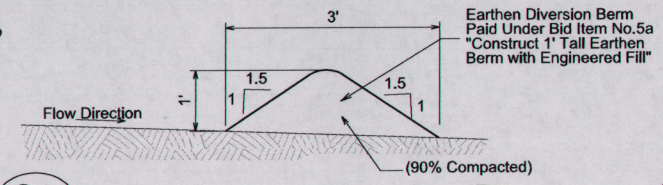
Construction Details

SHEET 8 OF 17



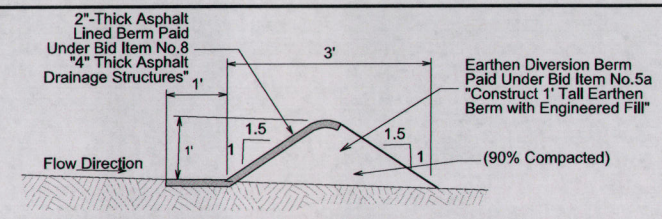
G1 2' Tall Earthen Diversion Berm

Not To Scale



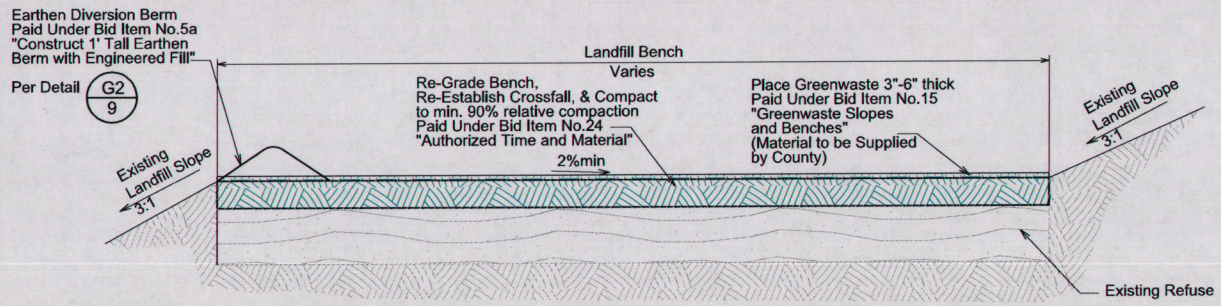
G2 1' Tall Earthen Diversion Berm

Not To Scale



G3 Earthen Diversion Berm Shotcrete Lined

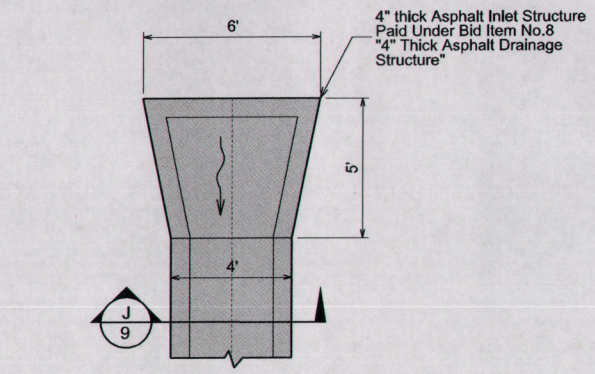
Not To Scale



H Landfill Bench Detail

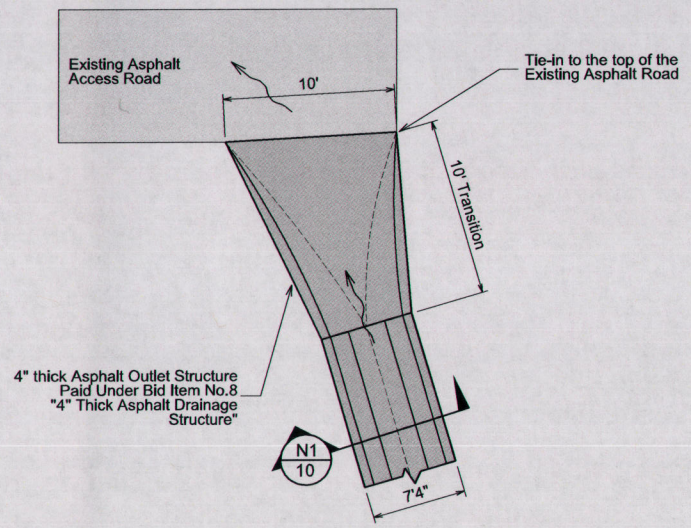
Not To Scale

Existing Site Conditions See Photo 10, Sheet 14



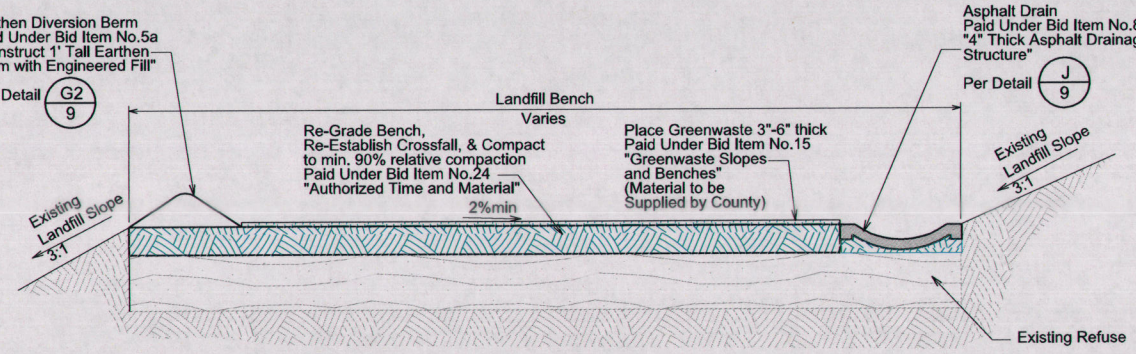
K Asphalt Inlet Structure

Not To Scale



L Asphalt Outlet Structure

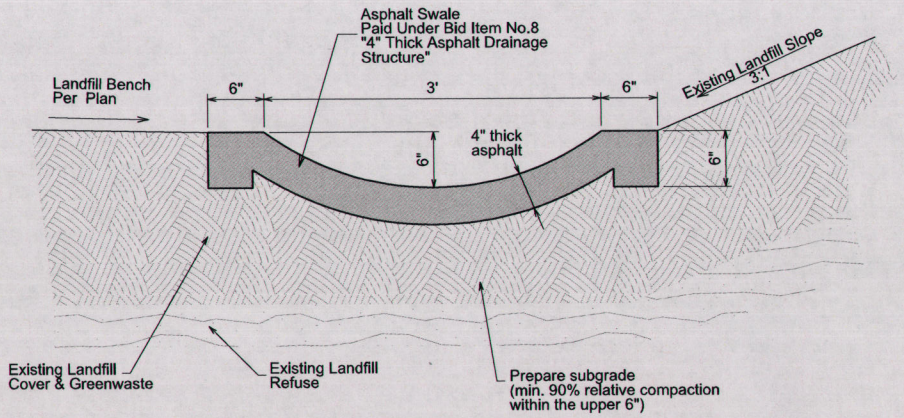
Not To Scale



I Landfill Bench Detail with Berm & Drain

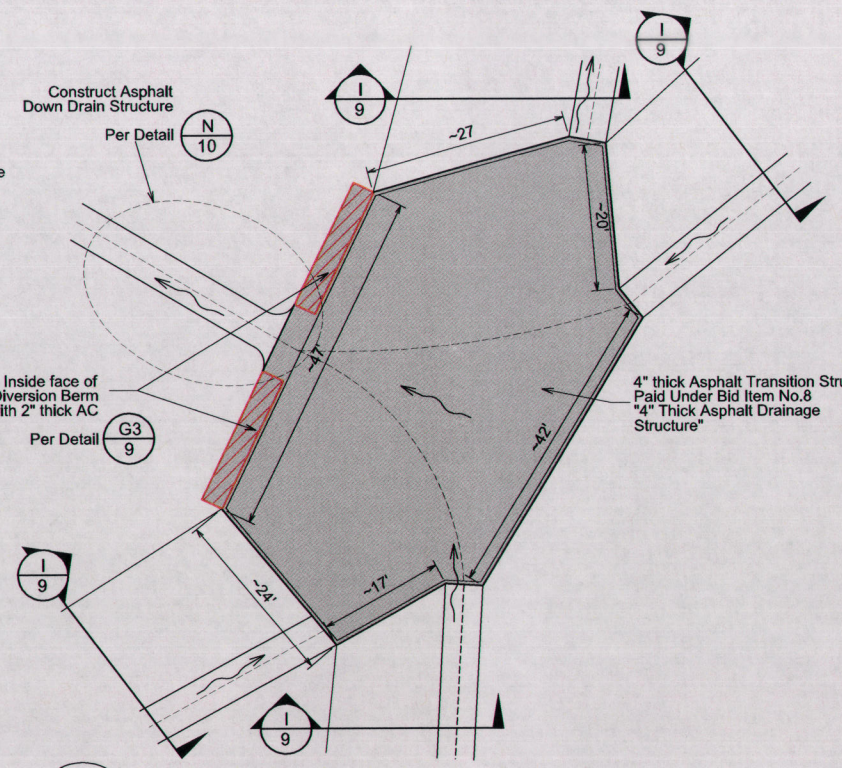
Not To Scale

Existing Site Conditions See Photo 10, Sheet 14



J Asphalt Drainage Swale Detail

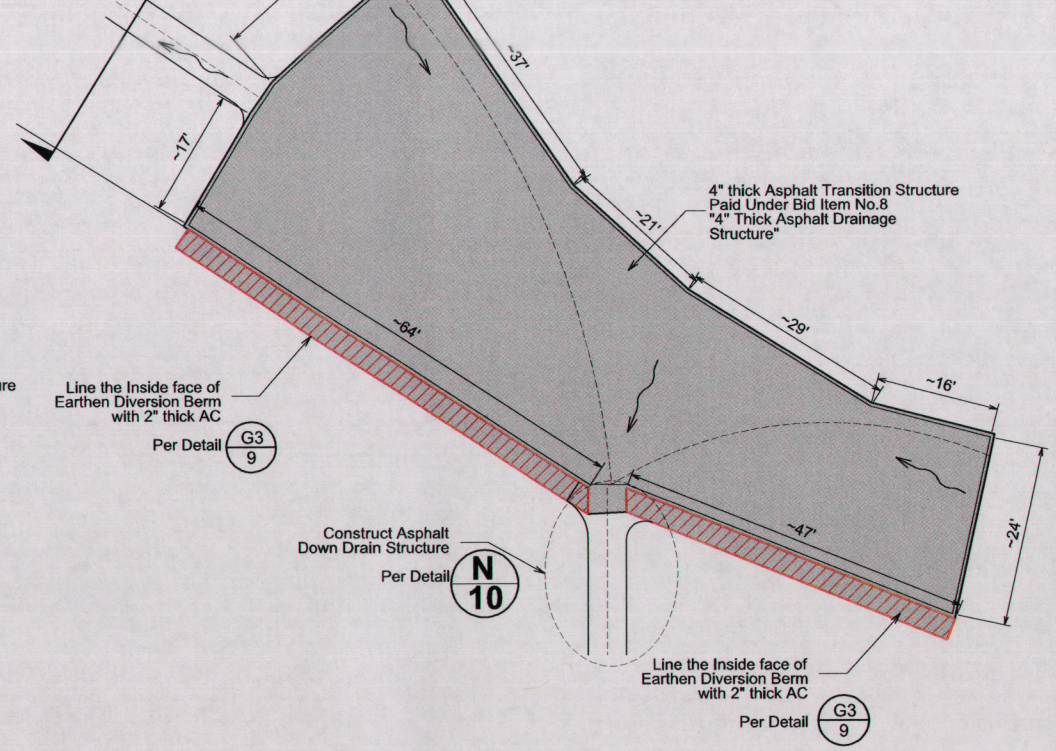
Not To Scale



M1 Asphalt Inlet Transition Structure

Not To Scale

Existing Site Conditions See Photo 11, Sheet 14



M2 Asphalt Inlet Transition Structure

Not To Scale

Existing Site Conditions See Photo 11, Sheet 14

NO.	REVISIONS	BY	APPROVED	DATE

RIVERSIDE COUNTY DEPARTMENT OF WASTE RESOURCES

Hans Kernkamp, General Manager/Chief Engineer

NTS

DESIGNED BY:	EC
DRAWN BY:	EC
CHECKED BY:	FM
DRAWING DATE:	Aug 2018
TOPO DATE:	-
SCALE:	NTS
PATH: Engr\sites\lamb\Spec Prj\ 2018 Site	
PATH: Drainage_Improvements\Project Drawings\	
PATH/FILE: LC_2018_Site_Improvement_S7-S11_Details.dgn	

REGISTERED PROFESSIONAL ENGINEER
FOUAD A. MINA
C052592
Exp. 12/31/18
CIVIL
STATE OF CALIFORNIA

Lamb Canyon Sanitary Landfill
2018 Daily Cover Excavation &
On-Call Site Improvements

Construction Details

SHEET 9 OF 17