

City of San Diego

CONTRACTOR'S NAME: RAL Investment Corp. dba Silverstrand Construction

ADDRESS: 11696 Sorrento Valley Road, Suite 200, San Diego, CA 92121

TELEPHONE NO.: 858-444-1963

FAX NO.:

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanFilippo@sandiego.gov

Phone No. (619) 533-3439, Fax No. (619) 533-3633

C. Fergusson / A. James / cc

BIDDING DOCUMENTS



ORIGINAL



FOR

MIRAMAR LANDFILL STORM WATER IMPROVEMENTS

BID NO.: K-18-1599-DBB-3

SAP NO. (WBS/IO/CC): S-16054

CLIENT DEPARTMENT: 2115

COUNCIL DISTRICT: 6

PROJECT TYPE: FA

THIS CONTRACT WILL BE SUBJECT TO THE FOLLOWING:

- THE CITY'S SUBCONTRACTING PARTICIPATION REQUIREMENTS FOR SLBE PROGRAM.
- PREVAILING WAGE RATES: STATE FEDERAL
- APPRENTICESHIP

BID DUE DATE:

2:00 PM

OCTOBER 27, 2017

CITY OF SAN DIEGO


PUBLIC WORKS CONTRACTS

1010 SECOND AVENUE, 14th FLOOR, MS 614C

SAN DIEGO, CA 92101

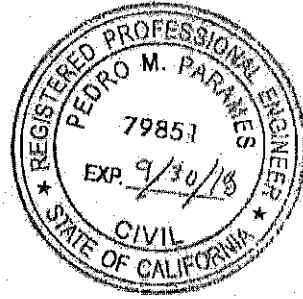
ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:


1) Registered Engineer

9/20/2017
Date

Seal:




2) For City Engineer

9-19-17
Date

Seal



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NOTICE INVITING BIDS

1. **SUMMARY OF WORK:** This is the City of San Diego's (City) solicitation process to acquire Construction services for **MIRAMAR LANDFILL STORM WATER IMPROVEMENTS**. For additional information refer to Attachment A.
2. **FULL AND OPEN COMPETITION:** This contract is open to full competition and may be bid on by Contractors who are on the City's current Prequalified Contractors' List. For information regarding the Contractors Prequalified list visit the City's web site: <http://www.sandiego.gov>.
3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$3,260,000**.
4. **BID DUE DATE AND TIME ARE: OCTOBER 27, 2017 at 2:00 PM**
5. **PREVAILING WAGE RATES APPLY TO THIS CONTRACT:** Refer to Attachment D.
6. **LICENSE REQUIREMENT:** The City has determined that the following licensing classification is required for this contract: **A**
7. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract.
 - 7.1. The City has incorporated **mandatory** SLBE-ELBE subcontractor participation percentages to enhance competition and maximize subcontracting opportunities. For the purpose of achieving the mandatory subcontractor participation percentages, a recommended breakdown of the SLBE and ELBE subcontractor participation percentages based upon certified SLBE and ELBE firms has also been provided to achieve the mandatory subcontractor participation percentages:

1. SLBE participation	9.7%
2. ELBE participation	12.6%
3. Total mandatory participation	22.3%
 - 7.2. The Bid may be declared non-responsive if the Bidder fails to meet the following requirements:
 - 7.2.1. Attend the Pre-Bid Meeting as described herein.
 - 7.2.2. Include SLBE-ELBE certified subcontractors at the overall mandatory participation percentage identified in this document; OR
 - 7.2.3. Submit Good Faith Effort documentation, saved in searchable Portable Document Format (PDF) and stored on Compact Disc (CD) or Digital Video Disc (DVD), demonstrating the Bidder made a good faith effort to outreach to and include SLBE-ELBE Subcontractors required in this document within 3 Working

Days of the Bid opening if the overall mandatory participation percentage is not met.

8. PRE-BID MEETING:

8.1. Prospective Bidders are **required** to attend the Pre-Bid Meeting. The purpose of the meeting is to discuss the scope of the Project, submittal requirements, the pre-qualification process and any Equal Opportunity Contracting Program requirements and reporting procedures. To request a sign language or oral interpreter for this visit, call the Public Works Contracts Division at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. Failure to attend the Mandatory Pre-Bid Meeting may result in the Design-Builder's Bid being deemed non-responsive. The Pre-Bid meeting is scheduled as follows:

Date: OCTOBER 12, 2017
Time: 9:30 AM
Location: 1010 Second Avenue, Suite 1400, San Diego, CA 92101

Attendance at the Pre-Submittal Meeting will be evidenced by the Bidder's representative's signature on the attendance roster. It is the responsibility of the Bidder's representative to complete and sign the attendance roster.

Bidders may not be admitted after the specified start time of the mandatory Pre-Bid Meeting.

9. PRE-BID SITE VISIT: All those wishing to submit a bid **MUST** visit the Work Site with the Engineer. The purpose of the Site visit is to acquaint Bidders with the Site conditions. To request a sign language or oral interpreter for this visit, call the Public Works Contracts at (619) 533-3450 at least 5 Working Days prior to the meeting to ensure availability. The Pre-Bid Site Visit is scheduled as follows:

Date: OCTOBER 12, 2017
Time: 10:30 AM
Location: 5180 Convoy Street, San Diego, CA 92111
Bring your Safety Equipment for Site Visit: Safety Vest, Boots, and Hard Hat.

10. AWARD PROCESS:

10.1. The Award of this contract is contingent upon the Contractor's compliance with all conditions of Award as stated within these documents and within the Notice of Intent to Award.

10.2. Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening. The City will then award the Contract within approximately 14 days of receipt of properly signed Contract, bonds, and insurance documents.

- 10.3. This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 10.4. The low Bid will be determined by the Base Bid plus all the Alternates
- 10.5. Once the low bid has been determined, the City may, at its sole discretion, award the contract for the Base bid alone; or for the Base bid plus one or more alternates.

11. SUBMISSION OF QUESTIONS:

- 11.1. The Director (or Designee) of Public Works Department is the officer responsible for opening, examining, and evaluating the competitive Bids submitted to the City for the acquisition, construction and completion of any public improvement except when otherwise set forth in these documents. Any questions related to this solicitation shall be submitted to:

Public Works Contracts
1010 Second Avenue, 14th Floor
San Diego, California, 92101
Attention: Antoinette Sanfilippo

OR:

ASanFilippo@sandiego.gov

- 11.2. Questions received less than 14 days prior to the date for opening of Bids may not be considered.
- 11.3. Questions or clarifications deemed by the City to be material shall be answered via issuance of an addendum and posted to the City's online bidding service.
- 11.4. Only questions answered by formal written addenda shall be binding. Oral and other interpretations or clarifications shall be without legal effect. It is the Bidder's responsibility to be informed of any addenda that have been issued and to include all such information in its Bid.

12. ADDITIVE/DEDUCTIVE ALTERNATES:

- 12.1. The additive/deductive alternates have been established to allow the City to compare the cost of specific portions of the Work with the Project's budget and enable the City to make a decision whether to incorporate these portions prior to award. The award will be established as described in the Bid. The City reserves the right to award the Contract for the Base Bid only or for the Base Bid plus one or more Alternates.

INSTRUCTIONS TO BIDDERS

1. PREQUALIFICATION OF CONTRACTORS:

- 1.1. Contractors submitting a Bid must be pre-qualified for the total amount proposed, including all alternate items, prior to the date of submittal. Bids from contractors who have not been pre-qualified as applicable and Bids that exceed the maximum dollar amount at which contractors are pre-qualified may be deemed **non-responsive** and ineligible for award. Complete information and links to the on-line prequalification application are available at:

<http://www.sandiego.gov/cip/bidopps/prequalification.shtml>

- 1.2. The completed application must be submitted online no later than 2 weeks prior to the bid opening. For additional information or the answer to questions about the prequalification program, contact David Stucky at 619-533-3474 or dstucky@sandiego.gov.
- 1.3. Due to the City's responsibility to protect the confidentiality of the contractors' information, City staff will not be able to provide information regarding contractors' prequalification status over the telephone. Contractors may access real-time information about their prequalification status via their vendor profile on [PlanetBids™](#).

2. ELECTRONIC FORMAT RECEIPT AND OPENING OF BIDS: Bids will be received in electronic format (eBids) EXCLUSIVELY at the City of San Diego's electronic bidding (eBidding) site, at: <http://www.sandiego.gov/cip/bidopps/index.shtml> and are due by the date, and time shown on the cover of this solicitation.

- 2.1. **BIDDERS MUST BE PRE-REGISTERED** with the City's bidding system and possess a system-assigned Digital ID in order to submit an electronic bid.
- 2.2. The City's bidding system will automatically track information submitted to the site including IP addresses, browsers being used and the URLs from which information was submitted. In addition, the City's bidding system will keep a history of every login instance including the time of login, and other information about the user's computer configuration such as the operating system, browser type, version, and more. Because of these security features, Contractors who disable their browsers' cookies will not be able to log in and use the City's bidding system.
- 2.3. The City's electronic bidding system is responsible for bid tabulations. Upon the bidder's or proposer's entry of their bid, the system will ensure that all required fields are entered. **The system will not accept a bid for which any required information is missing.** This includes all necessary pricing, subcontractor listing(s) and any other essential documentation and supporting materials and forms requested or contained in these solicitation documents.

2.4. BIDS REMAIN SEALED UNTIL BID DEADLINE. eBids are transmitted into the City's bidding system via hypertext transfer protocol secure (https) mechanism using SSL 128-256 bit security certificates issued from Verisign/Thawte which encrypts data being transferred from client to server. Bids submitted prior to the "Bid Due Date and Time" are not available for review by anyone other than the submitter which has until the "Bid Due Date and Time" to change, rescind or retrieve its proposal should it desire to do so.

2.5. BIDS MUST BE SUBMITTED BY BID DUE DATE AND TIME. Once the bid deadline is reached, no further submissions are accepted into the system. Once the Bid Due Date and Time has lapsed, bidders, proposers, the general public, and City staff are able to immediately see the results on line. City staff may then begin reviewing the submissions for responsiveness, EOCP compliance and other issues. The City may require any Bidder to furnish statement of experience, financial responsibility, technical ability, equipment, and references.

2.6. RECAPITULATION OF THE WORK. Bids shall not contain any recapitulation of the Work. Conditional Bids may be rejected as being non-responsive. Alternative proposals will not be considered unless called for.

2.7. BIDS MAY BE WITHDRAWN by the Bidder only up to the bid due date and time.

2.7.1. Important Note: Submission of the electronic bid into the system may not be instantaneous. Due to the speed and capabilities of the user's internet service provider (ISP), bandwidth, computer hardware and other variables, it may take time for the bidder's submission to upload and be received by the City's eBidding system. It is the bidder's sole responsibility to ensure their bids are received on time by the City's eBidding system. The City of San Diego is not responsible for bids that do not arrive by the required date and time.

2.8. ACCESSIBILITY AND AMERICANS WITH DISABILITIES ACT (ADA) COMPLIANCE: To request a copy of this solicitation in an alternative format, contact the Public Works Contract Specialist listed on the cover of this solicitation at least five (5) working days prior to the Bid/Proposal due date to ensure availability.

3. ELECTRONIC BID SUBMISSIONS CARRY FULL FORCE AND EFFECT

3.1. The bidder, by submitting its electronic bid, acknowledges that doing so carries the same force and full legal effect as a paper submission with a longhand (wet) signature.

3.2. By submitting an electronic bid, the bidder certifies that the bidder has thoroughly examined and understands the entire Contract Documents (which consist of the plans and specifications, drawings, forms, affidavits and the solicitation documents), and that by submitting the eBid as its bid proposal, the bidder acknowledges, agrees to and is bound by the entire Contract Documents, including any addenda issued thereto, and incorporated by reference in the Contract Documents.

- 3.3. The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certification, forms and affidavits submitted as part of this bid are true and correct.
- 3.4. The Bidder agrees to the construction of the project as described in Attachment "A-Scope of Work" for the City of San Diego, in accordance with the requirements set forth herein for the electronically submitted prices. The Bidder guarantees the Contract Price for a period of 120 days (90 days for federally funded contracts and contracts valued at \$500,000 or less) from the date of Bid opening. The duration of the Contract Price guarantee shall be extended by the number of days required for the City to obtain all items necessary to fulfill all conditions precedent.
4. **BIDS ARE PUBLIC RECORDS:** Upon receipt by the City, Bids shall become public records subject to public disclosure. It is the responsibility of the respondent to clearly identify any confidential, proprietary, trade secret or otherwise legally privileged information contained within the Bid. General references to sections of the California Public Records Act (PRA) will not suffice. If the Contractor does not provide applicable case law that clearly establishes that the requested information is exempt from the disclosure requirements of the PRA, the City shall be free to release the information when required in accordance with the PRA, pursuant to any other applicable law, or by order of any court or government agency, and the Contractor will hold the City harmless for release of this information.
5. **CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM:**
- 5.1. **Prior** to the Award of the Contract or Task Order, you and your Subcontractors and Suppliers must register with the City's web-based vendor registration and bid management system. For additional information go to:

<http://www.sandiego.gov/purchasing/bids-contracts/vendorreg.shtml>.
- 5.2. The City may not award the contract until registration of all subcontractors and suppliers is complete. In the event this requirement is not met within the time frame specified in the Notice of Intent to Award letter, the City reserves the right to rescind the Notice of Award / Intent to Award and to make the award to the next responsive and responsible bidder / proposer.
6. **JOINT VENTURE CONTRACTORS:** Provide a copy of the Joint Venture agreement and the Joint Venture license to the City within 10 Working Days after receiving the Contract forms. See 7-6, "The Contractors Representative" in The GREENBOOK and 7-6.1 in The WHITEBOOK.
7. **PREVAILING WAGE RATES WILL APPLY:** Refer to Attachment D.
8. **SUBCONTRACTING PARTICIPATION PERCENTAGES:** Subcontracting participation percentages apply to this contract. Refer to Attachment E.

9. INSURANCE REQUIREMENTS:

- 9.1.** All certificates of insurance and endorsements required by the contract are to be provided upon issuance of the City's Notice of Intent to Award letter.
- 9.2.** Refer to sections 7-3, "LIABILITY INSURANCE", and 7-4, "WORKERS' COMPENSATION INSURANCE" of the Supplementary Special Provisions (SSP) for the insurance requirements which must be met.

10. REFERENCE STANDARDS: Except as otherwise noted or specified, the Work shall be completed in accordance with the following standards:

Title	Edition	Document Number
Standard Specifications for Public Works Construction ("The GREENBOOK") http://www.greenbookspecs.org/	2015	PWPI070116-01
City of San Diego Standard Specifications for Public Works Construction ("The WHITEBOOK")* https://www.sandiego.gov/publicworks/edocref/greenbook	2015	PWPI070116-02
City of San Diego Standard Drawings* https://www.sandiego.gov/publicworks/edocref/standarddraw	2016	PWPI070116-03
Citywide Computer Aided Design and Drafting (CADD) Standards https://www.sandiego.gov/publicworks/edocref/drawings	2016	PWPI092816-04
California Department of Transportation (CALTRANS) Standard Specifications - http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2015	PWPI092816-05
CALTRANS Standard Plans http://www.dot.ca.gov/des/oe/construction-contract-standards.html	2015	PWPI092816-06
California Manual on Uniform Traffic Control Devices Revision 1 (CA MUTCD Rev 1) - http://www.dot.ca.gov/trafficops/camutcd/	2014	PWPI092816-07
NOTE: *Available online under Engineering Documents and References at: http://www.sandiego.gov/publicworks/edocref/index.shtml		

11. CITY'S RESPONSES AND ADDENDA: The City, at its discretion, may respond to any or all questions submitted in writing via the City's eBidding web site in the **form of an addendum**. No other responses to questions, oral or written shall be of any force or effect with respect to this solicitation. The changes to the Contract Documents through addenda are made effective as though originally issued with the Bid. The Bidders shall acknowledge the receipt of Addenda at the time of bid submission.

12. **CITY'S RIGHTS RESERVED:** The City reserves the right to cancel the Notice Inviting Bids at any time, and further reserves the right to reject submitted Bids, without giving any reason for such action, at its sole discretion and without liability. Costs incurred by the Bidder(s) as a result of preparing Bids under the Notice Inviting Bids shall be the sole responsibility of each bidder. The Notice Inviting Bids creates or imposes no obligation upon the City to enter a contract.
13. **CONTRACT PRICING:** This solicitation is for a Lump Sum contract with Unit Price provisions as set forth herein. The Bidder agrees to perform construction services for the City of San Diego in accordance with these contract documents for the prices listed below. The Bidder further agrees to guarantee the Contract Price for a period of 120 days from the date of Bid opening. The duration of the Contract Price guarantee may be extended, by mutual consent of the parties, by the number of days required for the City to obtain all items necessary to fulfill all contractual conditions.
14. **SUBCONTRACTOR INFORMATION:**
- 14.1. **LISTING OF SUBCONTRACTORS.** In accordance with the requirements provided in the "Subletting and Subcontracting Fair Practices Act" of the California Public Contract Code, the Bidder shall provide the **NAME** and **ADDRESS** of each Subcontractor who will perform work, labor, render services or who specially fabricates and installs a portion [type] of the work or improvement, in an amount in excess of 0.5% of the Contractor's total Bid. The Bidder shall also state within the description, whether the subcontractor is a **CONSTRUCTOR, CONSULTANT** or **SUPPLIER**. The Bidder shall further state within the description, the **PORTION** of the work which will be performed by each subcontractor under this Contract. The Contractor shall list only one Subcontractor for each portion of the Work. The **DOLLAR VALUE** of the total Bid to be performed shall be stated for all subcontractors listed. Failure to comply with this requirement may result in the Bid being rejected as **non-responsive** and ineligible for award. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3, "Subcontracts", which stipulates the percent of the Work to be performed with the Bidders' own forces. The Bidder shall list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which Bidders are seeking recognition towards achieving any mandatory, voluntary (or both) subcontracting participation goals.
- 14.2. **LISTING OF SUPPLIERS.** Any Bidder seeking the recognition of Suppliers of equipment, materials, or supplies obtained from third party Suppliers towards achieving any mandatory or voluntary (or both) subcontracting participation goals shall provide, at a minimum, the **NAME, LOCATION (CITY)** and the **DOLLAR VALUE** of each supplier. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for materials and supplies unless vendor manufactures or substantially alters materials and supplies, in which case, 100% will be credited. The Bidder is to indicate within the description whether the listed firm is a supplier or manufacturer.

If no indication is provided, the listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage.

- 14.3. LISTING OF SUBCONTRACTORS OR SUPPLIERS FOR ALTERNATES.** For subcontractors or suppliers to be used on additive or deductive alternate items, in addition to the above requirements, bidder shall further note "ALTERNATE" and alternate item number within the description.
- 15. SUBMITTAL OF "OR EQUAL" ITEMS:** See Section 4-1.6, "Trade Names or Equals" in The WHITEBOOK and as amended in the SSP.
- 16. AWARD:**
- 16.1.** The Award of this contract is contingent upon the Contractor's compliance with all conditions precedent to Award.
- 16.2.** Upon acceptance of a Bid, the City will prepare contract documents for execution within approximately 21 days of the date of the Bid opening and award the Contract approximately within 7 days of receipt of properly executed Contract, bonds, and insurance documents.
- 16.3.** This contract will be deemed executed and effective only upon the signing of the Contract by the Mayor or his designee and approval as to form the City Attorney's Office.
- 17. SUBCONTRACT LIMITATIONS:** The Bidder's attention is directed to Standard Specifications for Public Works Construction, Section 2-3, "SUBCONTRACTS" in The GREENBOOK and as amended in the SSP which requires the Contractor to self-perform not less than the specified amount. Failure to comply with this requirement shall render the bid **non-responsive** and ineligible for award.
- 18. AVAILABILITY OF PLANS AND SPECIFICATIONS:** Contract Documents may be obtained by visiting the City's website: <http://www.sandiego.gov/cip/>. Plans and Specifications for this contract are also available for review in the office of the City Clerk or Public Works Contracts.
- 19. ONLY ONE BID PER CONTRACTOR SHALL BE ACCEPTED:** No person, firm, or corporation shall be allowed to make, file, or be interested in more than one (1) Bid for the same work unless alternate Bids are called for. A person, firm or corporation who has submitted a sub-proposal to a Bidder, or who has quoted prices on materials to a Bidder, is not hereby disqualified from submitting a sub-proposal or quoting prices to other Bidders or from submitting a Bid in its own behalf. Any Bidder who submits more than one bid will result in the rejection of all bids submitted.
- 20. SAN DIEGO BUSINESS TAX CERTIFICATE:** The Contractor and Subcontractors, not already having a City of San Diego Business Tax Certificate for the work contemplated shall secure the appropriate certificate from the City Treasurer, Civic Center Plaza, First floor and submit to the

Contract Specialist upon request or as specified in the Contract Documents. Tax Identification numbers for both the Bidder and the listed Subcontractors must be submitted on the City provided forms within these documents.

21. BIDDER'S GUARANTEE OF GOOD FAITH (BID SECURITY) FOR DESIGN-BID-BUILD CONTRACTS:

21.1. For bids \$250,000 and above, bidders shall submit Bid Security at bid time. Bid Security shall be in one of the following forms: a cashier's check, or a properly certified check upon some responsible bank; or an approved corporate surety bond payable to the City of San Diego for an amount of not less than 10% of the total bid amount.

21.2. This check or bond, and the monies represented thereby, will be held by the City as a guarantee that the Bidder, if awarded the contract, will in good faith enter into the contract and furnish the required final performance and payment bonds.

21.3. The Bidder agrees that in the event of the Bidder's failure to execute this contract and provide the required final bonds, the money represented by the cashier's or certified check will remain the property of the City; and the Surety agrees that it will pay to the City the damages, not exceeding the sum of 10% of the amount of the Bid, that the City may suffer as a result of such failure.

21.4. At the time of bid submission, bidders must upload and submit an electronic PDF copy of the aforementioned bid security. Whether in the form of a cashier's check, a properly certified check or an approved corporate surety bond payable to the City of San Diego, the bid security must be uploaded to the City's eBidding system. Within twenty-four (24) hours after the bid due date and time, the first five (5) apparent low bidders must provide the City with the original bid security.

21.5. Failure to submit the electronic version of the bid security at the time of bid submission AND failure to provide the original within twenty-four (24) hours may cause the bid to be rejected and deemed **non-responsive**.

22. AWARD OF CONTRACT OR REJECTION OF BIDS:

22.1. This contract may be awarded to the lowest responsible and reliable Bidder.

22.2. Bidders shall complete ALL eBid forms as required by this solicitation. Incomplete eBids will not be accepted.

22.3. The City reserves the right to reject any or all Bids, to waive any informality or technicality in Bids received, and to waive any requirements of these specifications as to bidding procedure.

22.4. Bidders will not be released on account of their errors of judgment. Bidders may be released only upon receipt by the City within 3 Working Days of the bid opening,

written notice from the Bidder which shows proof of honest, credible, clerical error of a material nature, free from fraud or fraudulent intent; and of evidence that reasonable care was observed in the preparation of the Bid.

- 22.5.** A bidder who is not selected for contract award may protest the award of a contract to another bidder by submitting a written protest in accordance with the San Diego Municipal Code.
- 22.6.** The City of San Diego will not discriminate in the award of contracts with regard to race, religion creed, color, national origin, ancestry, physical handicap, marital status, sex or age.
- 22.7.** Each Bid package properly signed as required by these specifications shall constitute a firm offer which may be accepted by the City within the time specified herein.
- 22.8.** The City reserves the right to evaluate all Bids and determine the lowest Bidder on the basis of the base bid and any proposed alternates or options as detailed herein.

23. BID RESULTS:

- 23.1.** The availability of the bids on the City's eBidding system shall constitute the public announcement of the apparent low bidder. In the event that the apparent low bidder is subsequently deemed non-responsive or non-responsible, a notation of such will be made on the eBidding system. The new ranking and apparent low bidder will be adjusted accordingly.
- 23.2.** To obtain the bid results, view the results on the City's web site, or request the results by U.S. mail and provide a self-addressed, stamped envelope. If requesting by mail, be sure to reference the bid name and number. The bid tabulations will be mailed to you upon their completion. The results will not be given over the telephone.

24. THE CONTRACT:

- 24.1.** The Bidder to whom award is made shall execute a written contract with the City of San Diego and furnish good and approved bonds and insurance certificates specified by the City within 14 days after receipt by Bidder of a form of contract for execution unless an extension of time is granted to the Bidder in writing.
- 24.2.** If the Bidder takes longer than 14 days to fulfill these requirements, then the additional time taken shall be added to the Bid guarantee. The Contract shall be made in the form adopted by the City, which includes the provision that no claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.

- 24.3.** If the Bidder to whom the award is made fails to enter into the contract as herein provided, the award may be annulled and the Bidder's Guarantee of Good Faith will be subject to forfeiture. An award may be made to the next lowest responsible and reliable Bidder who shall fulfill every stipulation embraced herein as if it were the party to whom the first award was made.
- 24.4.** Pursuant to the San Diego City Charter section 94, the City may only award a public works contract to the lowest responsible and reliable Bidder. The City will require the Apparent Low Bidder to (i) submit information to determine the Bidder's responsibility and reliability, (ii) execute the Contract in form provided by the City, and (iii) furnish good and approved bonds and insurance certificates specified by the City within 14 Days, unless otherwise approved by the City, in writing after the Bidder receives notification from the City, designating the Bidder as the Apparent Low Bidder and formally requesting the above mentioned items.
- 24.5.** The award of the Contract is contingent upon the satisfactory completion of the above-mentioned items and becomes effective upon the signing of the Contract by the Mayor or designee and approval as to form the City Attorney's Office. If the Apparent Low Bidder does not execute the Contract or submit required documents and information, the City may award the Contract to the next lowest responsible and reliable Bidder who shall fulfill every condition precedent to award. A corporation designated as the Apparent Low Bidder shall furnish evidence of its corporate existence and evidence that the officer signing the Contract and bond for the corporation is duly authorized to do so.
- 25. EXAMINATION OF PLANS, SPECIFICATIONS, AND SITE OF WORK:** The Bidder shall examine carefully the Project Site, the Plans and Specifications, other materials as described in the Special Provisions, Section 2-7, and the proposal forms (e.g., Bidding Documents). The submission of a Bid shall be conclusive evidence that the Bidder has investigated and is satisfied as to the conditions to be encountered, as to the character, quality, and scope of Work, the quantities of materials to be furnished, and as to the requirements of the Bidding Documents Proposal, Plans, and Specifications.
- 26. CITY STANDARD PROVISIONS:** This contract is subject to the following standard provisions. See The WHITEBOOK for details.
- 26.1.** The City of San Diego Resolution No. R-277952 adopted on May 20, 1991 for a Drug-Free Workplace.
- 26.2.** The City of San Diego Resolution No. R-282153 adopted on June 14, 1993 related to the Americans with Disabilities Act.
- 26.3.** The City of San Diego Municipal Code §22.3004 for Contractor Standards.
- 26.4.** The City of San Diego's Labor Compliance Program and the State of California Labor Code §§1771.5(b) and 1776.

- 26.5. Sections 1777.5, 1777.6, and 1777.7 of the State of California Labor Code concerning the employment of apprentices by contractors and subcontractors performing public works contracts.
- 26.6. The City's Equal Benefits Ordinance (EBO), Chapter 2, Article 2, Division 43 of The San Diego Municipal Code (SDMC).
- 26.7. The City's Information Security Policy (ISP) as defined in the City's Administrative Regulation 90.63.

27. **PRE-AWARD ACTIVITIES:**

- 27.1. The contractor selected by the City to execute a contract for this Work shall submit the required documentation as specified in the herein and in the Notice of Award. Failure to provide the information as specified may result in the Bid being rejected as **non-responsive**.
- 27.2. The decision that bid is non-responsive for failure to provide the information required within the time specified shall be at the sole discretion of the City.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND

FAITHFUL PERFORMANCE BOND AND LABOR AND MATERIALMEN'S BOND:

RAL Investment Corp., dba Silverstrand Construction, a corporation, as principal, and **The Hanover Insurance Company**, a corporation authorized to do business in the State of California, as Surety, hereby obligate themselves, their successors and assigns, jointly and severally, to The City of San Diego a municipal corporation in the sum of **Three Million Three Hundred Ninety-Seven Thousand Two Hundred Six 80/100** for the faithful performance of the annexed contract, and in the sum of **\$3,397,206.80** for the benefit of laborers and materialmen designated below.

Conditions:

If the Principal shall faithfully perform the annexed contract with the City of San Diego, California, then the obligation herein with respect to a faithful performance shall be void; otherwise it shall remain in full force.

If the Principal shall promptly pay all persons, firms and corporations furnishing materials for or performing labor in the execution of this contract, and shall pay all amounts due under the California Unemployment Insurance Act then the obligation herein with respect to laborers and materialmen shall be void; otherwise it shall remain in full force.

The obligation herein with respect to laborers and materialmen shall inure to the benefit of all persons, firms and corporations entitled to file claims under the provisions of Article 2. Claimants, (iii) public works of improvement commencing with Civil Code Section 9100 of the Civil Code of the State of California.

Changes in the terms of the annexed contract or specifications accompanying same or referred to therein shall not affect the Surety's obligation on this bond, and the Surety hereby waives notice of same.

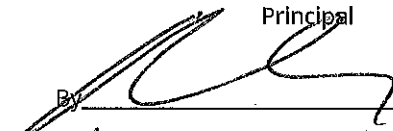
The Surety shall pay reasonable attorney's fees should suit be brought to enforce the provisions of this bond.

PERFORMANCE BOND, LABOR AND MATERIALMEN'S BOND (continued)

Dated December 5, 2017


Approved as to Form

RAL Investment Corp., dba Silverstrand Construction

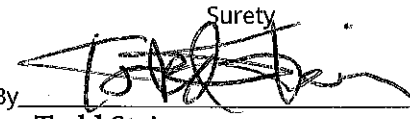
Principal
By 
Alex R. Lopez, CFO

Printed Name of Person Signing for Principal

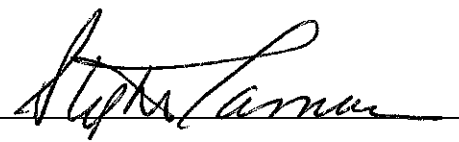
Mara W. Elliott, City Attorney

By 
Deputy City Attorney
Amanda Gry

The Hanover Insurance Company

Surety
By 
Todd Stein
Attorney-in-fact

Approved:

By 
Mayor or Designee

440 Lincoln Street

Local Address of Surety

Worcester, MA 01653-0002

Local Address (City, State) of Surety

330-865-4265 (Agent - Brunswick Companies)

Local Telephone No. of Surety

Premium \$ 50,958.00

Bond No. 1059410

**THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA**

POWER OF ATTORNEY

THIS Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

KNOW ALL PERSONS BY THESE PRESENTS:

That THE HANOVER INSURANCE COMPANY and MASSACHUSETTS BAY INSURANCE COMPANY, both being corporations organized and existing under the laws of the State of New Hampshire, and CITIZENS INSURANCE COMPANY OF AMERICA, a corporation organized and existing under the laws of the State of Michigan, (hereinafter individually and collectively the "Company") does hereby constitute and appoint,

Mark Levinson, Todd Stein and/or Jeff McQuate

Of Brunswick Companies, Fairlawn, OH and each individually, if there be more than one named, as its true and lawful attorney(s)-in-fact to sign, execute, seal, acknowledge and deliver for, and on its behalf, and as its act and deed any place within the United States, any and all surety bonds, recognizances, undertakings, or other surety obligations. The execution of such surety bonds, recognizances, undertakings or surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company, in their own proper persons. Provided however, that this power of attorney limits the acts of those named herein; and they have no authority to bind the Company except in the manner stated and to the extent of any limitation stated below:

Any such obligations in the United States, not to exceed Twenty Five Million and No/100 (\$25,000,000) in any single instance

That this power is made and executed pursuant to the authority of the following Resolutions passed by the Board of Directors of said Company, and said Resolutions remain in full force and effect:

RESOLVED: That the President or any Vice President, in conjunction with any Vice President, be and they hereby are authorized and empowered to appoint Attorneys-in-fact of the Company, in its name and as it acts, to execute and acknowledge for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, waivers of citation and all other writings obligatory in the nature thereof, with power to attach thereto the seal of the Company. Any such writings so executed by such Attorneys-in-fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company in their own proper persons.

RESOLVED: That any and all Powers of Attorney and Certified Copies of such Powers of Attorney and certification in respect thereto, granted and executed by the President or Vice President in conjunction with any Vice President of the Company, shall be binding on the Company to the same extent as if all signatures therein were manually affixed, even though one or more of any such signatures thereon may be facsimile. (Adopted October 7, 1981 – The Hanover Insurance Company; Adopted April 14, 1982 – Massachusetts Bay Insurance Company; Adopted September 7, 2001 – Citizens Insurance Company of America)

IN WITNESS WHEREOF, THE HANOVER INSURANCE COMPANY, MASSACHUSETTS BAY INSURANCE COMPANY and CITIZENS INSURANCE COMPANY OF AMERICA have caused these presents to be sealed with their respective corporate seals, duly attested by two Vice Presidents, this 30th day of March, 2016.



THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

Robert Thomas
Robert Thomas, Vice President

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

J. Michael Pote
J. Michael Pote, Vice President

THE COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF WORCESTER) ss.

On this 30th day of March 2016 before me came the above named Vice Presidents of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, to me personally known to be the individuals and officers described herein, and acknowledged that the seals affixed to the preceding instrument are the corporate seals of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, respectively, and that the said corporate seals and their signatures as officers were duly affixed and subscribed to said instrument by the authority and direction of said Corporations.



Diane J. Marino
Diane J. Marino, Notary Public
My Commission Expires March 4, 2022

I, the undersigned Vice President of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, hereby certify that the above and foregoing is a full, true and correct copy of the Original Power of Attorney issued by said Companies, and do hereby further certify that the said Powers of Attorney are still in force and effect.

GIVEN under my hand and the seals of said Companies, at Worcester, Massachusetts, this 5th day of December 2017

CERTIFIED COPY

Theodore G. Martinez
Theodore G. Martinez, Vice President

ALL-PURPOSE ACKNOWLEDGMENT

State of Ohio

County of Summit

On 12/05/2017 before me, Kelley J. Wisor
DATE NAME OF NOTARY PUBLIC

personally appeared Todd Stein
NAME(S) OF SIGNER(S)

personally known to me OR proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

KELLEY J. WISOR
Notary Public, State of Ohio
My Commission Expires April 19, 2020
Place Notary Seal or Stamp Here

Kelley J. Wisor

Kelley J. Wisor SIGNATURE OF NOTARY
Notary Commission Expires 04/19/20

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it may prove valuable to persons relying on this Acknowledgment and could prevent fraudulent reattachment of this certificate to another document.

DESCRIPTION OF ATTACHED DOCUMENT

THIS CERTIFICATE
MUST BE ATTACHED
TO THE DOCUMENT
DESCRIBED AT RIGHT

TITLE OR TYPE OF DOCUMENT

NUMBER OF PAGES

DATE OF DOCUMENT

SIGNER(S) OTHER THAN NAMED ABOVE

ALL-PURPOSE ACKNOWLEDGMENT

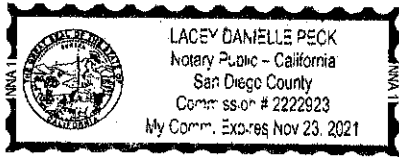
State of California

County of San Diego

On 12.19.17 before me, Lacey Peck
DATE NAME OF NOTARY PUBLIC

personally appeared Alec Lopez
NAME(S) OF SIGNER(S)

personally known to me OR proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/hers/their authorized capacity(ies), and that by his/hers/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.



WITNESS my hand and official seal.

Place Notary Seal or Stamp Here

[Signature]
SIGNATURE OF NOTARY

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it may prove valuable to persons relying on this Acknowledgment and could prevent fraudulent reattachment of this certificate to another document.

DESCRIPTION OF ATTACHED DOCUMENT

THIS CERTIFICATE
MUST BE ATTACHED
TO THE DOCUMENT
DESCRIBED AT RIGHT

Performance Bond
TITLE OR TYPE OF DOCUMENT

2
NUMBER OF PAGES

12.19.17
DATE OF DOCUMENT

SIGNER(S) OTHER THAN NAMED ABOVE

**The Hanover Insurance Company, Bedford, New Hampshire
Assets and Liabilities as of December 31, 2016**

ASSETS

	2016
Cash in Banks (Including Short-Term Investments).....	\$ (5,480,332)
Bonds and Stocks.....	\$5,390,215,623
Other Admitted Assets.....	<u>\$2,024,541,227</u>
Total Admitted Assets.....	<u>\$7,409,276,518</u>

LIABILITIES, CAPITAL AND SURPLUS

Reserve for Unearned Premiums.....	\$1,566,642,985
Reserve for Loss and Loss Expense.....	\$2,988,645,005
Reserve for Taxes.....	\$ 31,271,197
Funds held under reinsurance treaties.....	\$ 2,422,465
Reserve for all other liabilities.....	\$ 652,134,655
Capital Stock - \$1.00 par.....	\$ 5,000,000
Net Surplus.....	<u>\$2,163,160,211</u>
Policyholders' Surplus.....	<u>\$2,168,160,211</u>
Total Liabilities, Capital and Surplus.....	<u>\$7,409,276,518</u>

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF WORCESTER

I, Jeffrey Farber, Assistant Treasurer of The Hanover Insurance Company, being duly sworn deposes and says that he is the above described officer of said Company, and certifies that the forgoing statement is a true statement of the condition and affairs of the said Company on December 31, 2016.

Jeffrey Farber,
Assistant Treasurer



STATE OF CALIFORNIA
DEPARTMENT OF INSURANCE
SAN FRANCISCO

AMENDED

Certificate of Authority

THIS IS TO CERTIFY, That, pursuant to the Insurance Code of the State of California,

The ~~Handover Insurance~~ Company

of Bedford, New Hampshire, organized under the laws of New Hampshire, subject to its Articles of Incorporation or other fundamental organizational documents, is hereby authorized to transact within this State, subject to all provisions of this Certificate, the following classes of insurance: Fire; Marine, Surety, Disability, Plate Glass, Liability, Workers' Compensation, Common Carrier Liability, Boiler and Machinery, Burglary, Credit, Sprinkler, Team and Vehicle, Automobile, Aircraft and Miscellaneous as such classes are now or may hereafter be defined in the Insurance Laws of the State of California.

THIS CERTIFICATE is expressly conditioned upon the holder hereof now and hereafter being in full compliance with all, and not in violation of any, of the applicable laws and lawful requirements made under authority of the laws of the State of California as long as such laws or requirements are in effect and applicable, and as such laws and requirements now are, or may hereafter be changed or amended.

IN WITNESS WHEREOF, effective as of the 20th day of October, 1986, I have hereunto set my hand and caused my official seal to be affixed this 20th day of October, 1986.



By

Roxani M. Callespelle
Insurance Commissioner
Victoria S. Sidbury
Victoria S. Sidbury
Deputy

NOTICE:

Qualification with the Secretary of State must be accomplished as required by the California Corporations Code promptly after issuance of this Certificate of Authority. Failure to do so will be a violation of Ins. Code Sec. 701 and will be grounds for revoking this Certificate of Authority pursuant to the covenants made in the application therefor and the conditions contained herein.

ATTACHMENTS

ATTACHMENT A

SCOPE OF WORK

SCOPE OF WORK

- 1. SCOPE OF WORK:** Construction of Source Control BMPs at the West Miramar Landfill.
 - 1.1.** The Project object is to reduce sediment and other pollutants in storm water discharges at the West Miramar Waste Disposal Facility (Facility), including stabilizing sections of the Main Haul Road and road shoulders with asphalt concrete pavement or aggregate, reducing erosive storm water runoff and sediment mobilization through construction or implementation of stabilized roadside ditches, tracking controls, stabilized low flow road crossings, gabion check dam structures, slope interruption devices, soil berms, and drainage inlet and outlet protection, and stabilizing disturbed soil areas through soil preparation and application of hydro-seed and hydraulic mulch. Hydroseeding work shall be timed to occur between October 1 and December 15th. Contractor's Health and Safety Plan shall include working around hazards that are inherent to an active landfill site.
 - 1.2.** The Work shall be performed in accordance with:
 - 1.2.1.** The Notice Inviting Bids and Plans numbered **40210-1-D** through **40210-10-D**, inclusive.
- 2. ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$3,260,000**.
- 3. LOCATION OF WORK:** **The location of the Work is as follows:**

The site is at the City of San Diego, West Miramar Landfill located at 5180 Convoy Street, San Diego, CA 92111. The site is an active Class III Municipal Landfill and Composting Facility.
- 4. CONTRACT TIME:** The Contract Time for completion of the Work shall be **100 Working Days**.

ATTACHMENT B
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ATTACHMENT C
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ATTACHMENT D
PREVAILING WAGES

ATTACHMENT D

PREVAILING WAGES

1. **PREVAILING WAGE RATES:** Pursuant to San Diego Municipal Code section 22.3019, construction, alteration, demolition, repair and maintenance work performed under this Contract is subject to State prevailing wage laws. For construction work performed under this Contract cumulatively exceeding \$25,000 and for alteration, demolition, repair and maintenance work performed under this Contract cumulatively exceeding \$15,000, the Contractor and its subcontractors shall comply with State prevailing wage laws including, but not limited to, the requirements listed below.
 - 1.1. **Compliance with Prevailing Wage Requirements.** Pursuant to sections 1720 through 1861 of the California Labor Code, the Contractor and its subcontractors shall ensure that all workers who perform work under this Contract are paid not less than the prevailing rate of per diem wages as determined by the Director of the California Department of Industrial Relations (DIR). This includes work performed during the design and preconstruction phases of construction including, but not limited to, inspection and land surveying work.
 - 1.1.1. Copies of such prevailing rate of per diem wages are on file at the City and are available for inspection to any interested party on request. Copies of the prevailing rate of per diem wages also may be found at <http://www.dir.ca.gov/OPRL/DPreWageDetermination.htm>. Contractor and its subcontractors shall post a copy of the prevailing rate of per diem wages determination at each job site and shall make them available to any interested party upon request.
 - 1.1.2. The wage rates determined by the DIR refer to expiration dates. If the published wage rate does not refer to a predetermined wage rate to be paid after the expiration date, then the published rate of wage shall be in effect for the life of this Contract. If the published wage rate refers to a predetermined wage rate to become effective upon expiration of the published wage rate and the predetermined wage rate is on file with the DIR, such predetermined wage rate shall become effective on the date following the expiration date and shall apply to this Contract in the same manner as if it had been published in said publication. If the predetermined wage rate refers to one or more additional expiration dates with additional predetermined wage rates, which expiration dates occur during the life of this Contract, each successive predetermined wage rate shall apply to this Contract on the date following the expiration date of the previous wage rate. If the last of such predetermined wage rates expires during the life of this Contract, such wage rate shall apply to the balance of the Contract.
 - 1.2. **Penalties for Violations.** Contractor and its subcontractors shall comply with California Labor Code section 1775 in the event a worker is paid less than the prevailing wage rate for the work or craft in which the worker is employed.

- 1.3. Payroll Records.** Contractor and its subcontractors shall comply with California Labor Code section 1776, which generally requires keeping accurate payroll records, verifying and certifying payroll records, and making them available for inspection. Contractor shall require its subcontractors to also comply with section 1776. Contractor and its subcontractors shall submit weekly certified payroll records online via the City's web-based Labor Compliance Program. Contractor is responsible for ensuring its subcontractors submit certified payroll records to the City.
- 1.3.1.** For contracts entered into on or after April 1, 2015, Contractor and their subcontractors shall furnish records specified in Labor Code section 1776 directly to the Labor Commissioner in the manner required by Labor Code section 1771.4.
- 1.4. Apprentices.** Contractor and its subcontractors shall comply with California Labor Code sections 1777.5, 1777.6 and 1777.7 concerning the employment and wages of apprentices. Contractor is held responsible for the compliance of their subcontractors with sections 1777.5, 1777.6 and 1777.7.
- 1.5. Working Hours.** Contractor and their subcontractors shall comply with California Labor Code sections 1810 through 1815, including but not limited to: (i) restrict working hours on public works contracts to eight hours a day and forty hours a week, unless all hours worked in excess of 8 hours per day are compensated at not less than 1½ times the basic rate of pay; and (ii) specify penalties to be imposed on design professionals and subcontractors of \$25 per worker per day for each day the worker works more than 8 hours per day and 40 hours per week in violation of California Labor Code sections 1810 through 1815.
- 1.6. Required Provisions for Subcontracts.** Contractor shall include at a minimum a copy of the following provisions in any contract they enter into with a subcontractor: California Labor Code sections 1771, 1771.1, 1775, 1776, 1777.5, 1810, 1813, 1815, 1860 and 1861.
- 1.7. Labor Code Section 1861 Certification.** Contractor in accordance with California Labor Code section 3700 is required to secure the payment of compensation of its employees and by signing this Contract, Contractor certifies that "I am aware of the provisions of Section 3700 of the California Labor Code which require every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work of this Contract."
- 1.8. Labor Compliance Program.** The City has its own Labor Compliance Program authorized in August 2011 by the DIR. The City will withhold contract payments when payroll records are delinquent or deemed inadequate by the City or other governmental entity, or it has been established after an investigation by the City or other governmental entity that underpayment(s) have occurred. For questions or assistance, please contact the City of San Diego's Equal Opportunity Contracting Department at 619-236-6000.

1.9. Contractor and Subcontractor Registration Requirements. This project is subject to compliance monitoring and enforcement by the DIR. As of March 1, 2015, no contractor or subcontractor may be listed on a bid or proposal for a public works project unless registered with the DIR pursuant to Labor Code section 1725.5. As of April 1, 2015, a contractor or subcontractor shall not be qualified to bid on, be listed in a bid proposal, or enter into any contract for public work, unless currently registered and qualified to perform public work pursuant to Labor Code section 1725.5. By submitting a bid or proposal to the City, Contractor is certifying that he or she has verified that all subcontractors used on this public work project are registered with the DIR in compliance with Labor Code sections 1771.1 and 1725.5, and Contractor shall provide proof of registration to the City upon request.

1.9.1. A Contractor's inadvertent error in listing a subcontractor who is not registered pursuant to Labor Code section 1725.5 in response to a solicitation shall not be grounds for filing a bid protest or grounds for considering the bid non-responsive provided that any of the following apply: (1) the subcontractor is registered prior to bid opening; (2) within twenty-four hours after the bid opening, the subcontractor is registered and has paid the penalty registration fee specified in Labor Code section 1725.5; or (3) the subcontractor is replaced by another registered subcontractor pursuant to Public Contract Code section 4107.

ATTACHMENT E
SUPPLEMENTARY SPECIAL PROVISIONS

SUPPLEMENTARY SPECIAL PROVISIONS

The following Supplementary Special Provisions (SSP) modifies the following documents:

1. The **2015 Edition** of the Standard Specifications for Public Works Construction (The "GREENBOOK").
2. The **2015 Edition** of the City of San Diego Standard Specifications for Public Works Construction (The "WHITEBOOK"), including the following:
 - a) General Provisions (A) for all Contracts.

SECTION 1 - TERMS, DEFINITIONS, ABBREVIATIONS, UNITS OF MEASURE, AND SYMBOLS

- 1-2 TERMS AND DEFINITIONS.** To the "WHITEBOOK", item 54, "Normal Working Hours", ADD the following:

The **Normal Working Hours** are 7:00 AM to 4:00 PM.

SECTION 2 - SCOPE AND CONTROL OF WORK

- 2-3.2 Self Performance.** To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. You shall perform, with your own organization, Contract Work amounting to at least **50%** of the base Bid AND **50%** of any alternates.

- 2-10 AUTHORITY OF THE BOARD AND THE ENGINEER.** To the "GREENBOOK", paragraph two (2), DELETE in its entirety and SUBSTITUTE with the following:

The decision of the Engineer is final and binding on all questions relating to: quantities; acceptability of material, equipment, or work; execution, progress or sequence of work; request for information; and interpretation of the Plans, Specifications, or other Contract Documents. This shall be precedent to any payment under the Contract, unless otherwise ordered by the Board. The Engineer shall be the single point of contact and shall be included in all communications.

2-15 TECHNICAL STUDIES AND DATA. To the "WHITEBOOK", ADD the following:

3. In preparation of the Contract Documents, the designer has relied upon the following reports of explorations and tests at the Work Site:
 - a) Hydrology and Hydraulic Calculations for Channel, Low Flow Crossings, and Energy Dissipaters, dated June 30, 2017 by Geosyntec Consultants.
 - b) Pavement Design Calculations, dated June 30, 2017, by Geosyntec Consultants.
 - c) MCAS Sensitive Resources Map, 2016
4. The reports listed above are by contacting the Contract Specialist, or **Appendix F** and **Appendix I** or visiting:

<https://filecloud.sandiego.gov/url/tzmzt4jlyr5s>

2-16 CONTRACTOR REGISTRATION AND ELECTRONIC REPORTING SYSTEM. To the "WHITEBOOK", item 1, DELETE in its entirety.

SECTION 3 – CHANGES IN WORK

3-5.1 Claims. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

ADD:

3-5.1 Claims.

1. A Claim is a written demand by you that seeks an adjustment in the Contract Price, Contract Time, or other relief associated with a dispute arising under or relating to the Contract, including a breach of any provision thereof. A voucher, invoice, or other routine request for payment is not a Claim.
2. A Claim shall conform to these specifications and may be considered after the City has previously denied a request by you for a Change Order seeking the demanded relief.
3. You shall submit a Claim to the Engineer if a dispute occurs that arises from or relates to the Contract. The Claim shall seek all relief to which you assert you are entitled as a result of the event(s) giving rise to the dispute. Your failure to process a Claim in accordance with these specifications shall constitute a waiver of all relief associated with the dispute. Claims are subject to 6-11, "Right to Audit".
4. You shall continue to perform the Services and Work and shall maintain the Schedule during any dispute proceedings. The Engineer will continue to make payments for undisputed Services and Work.

5. The City's Claims process specified herein shall not relieve you of your statutory obligations to present claims prior to any action under the California Government Code.

3-5.1.1 Initiation of Claim.

1. You shall promptly, but no later than 30 Days after the event(s) giving rise to the Claim, deliver the Claim to the Engineer.
2. You shall not process a Claim unless the Engineer has previously denied a request by you for a Change Order that sought the relief to be pursued in the claim.

3-5.1.1.1 Claim Certification Submittal.

1. If your Claim seeks an increase in the Contract Price, the Contract Time, or both, submit with the Claim an affidavit certifying the following:
 - a) The Claim is made in good faith and covers all costs and delays to which you are entitled as a result of the event(s) giving rise to the Claim.
 - b) The amount claimed accurately reflects the adjustments in the Contract Price, the Contract Time, or both to which you believe you are entitled.
 - c) All supporting costs and pricing data are current, accurate, and complete to the best of your knowledge. The cost breakdown per item of Work shall be supplied.
 - d) You shall ensure that the affidavit is executed by an official who has the authority to legally bind you.

3-5.1.2 Initial Determination.

1. The Engineer will respond in writing to your Claim within 30 Days of receipt of the Claim.

3-5.1.3 Settlement Meeting.

1. If you disagree with the Initial Determination, you shall request a Settlement Meeting within 30 Days. Upon receipt of this request, the Engineer will schedule the Settlement Meeting within 15 Working Days.

3-5.1.7 City's Final Determination.

1. If a settle agreement is not reached, the City shall make a written Final Determination within 10 Working Days after the Settlement Meeting.
2. If you disagree with the City's Final Determination, notify the Engineer in writing of your objection within 15 Working Days after receipt of the written determination and file a "Request for Mediation" in accordance with 3-5.2, "Dispute Resolution Process".

3. Failure to give notice of objection within the 15 Working Days period shall waive your right to pursue the Claim.

3-5.1.8 Mandatory Assistance.

1. If a third party dispute, litigation, or both arises out of or relates in any way to the Services provided under the Contract, upon the City's request, you shall agree to assist in resolving the dispute or litigation. Your assistance includes, but is not limited to the following:
 - a) Providing professional consultations.
 - b) Attending mediations, arbitrations, depositions, trials, or any event related to the dispute resolution and litigation.

3-5.1.8.1 Compensation for Mandatory Assistance.

1. The City will reimburse you for reasonable fees and expenses incurred by you for any required assistance rendered in accordance with 3-5.1.8, "Mandatory Assistance" as Extra Work.
2. The Engineer will determine whether these fees and expenses were necessary due to your conduct or failure to act.
3. If the Engineer determines that the basis of the dispute or litigation in which these fees and expenses were incurred were the result of your conduct or your failure to act in part or in whole, you shall reimburse the City for any payments made for these fees and expenses.
4. Reimbursement may be through any legal means necessary, including the City's withholding of your payment.

3-5.2.3 Selection of Mediator. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. A single mediator, knowledgeable in construction aspects and acceptable to both parties, shall be used to mediate the dispute.
2. To initiate mediation, the initiating party shall serve a Request for Mediation at the American Arbitration Association (AAA) on the opposing party.
3. If AAA is used, the initiating party shall concurrently file with AAA a "Request for Mediation" along with the appropriate fees, a copy of requested mediators marked in preference order, and a preference for available dates.
4. If AAA is selected to coordinate the mediation (Administrator), within 10 Working Days from the receipt of the initiating party's Request for Mediation, the opposing party shall file the following:
 - a) A copy of the list of the preferred mediators listed in preference order after striking any mediators to which they have any objection.
 - b) A preference for available dates.
 - c) Appropriate fees.

5. If the parties cannot agree on a mediator, then each party shall select a mediator and those mediators shall select the neutral third party to mediate the matter.

3-5.3 Forum of Litigation. To the "WHITEBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. It is the express intention that all legal actions and proceedings related to the Contract or Agreement with the City or to any rights or any relationship between the parties arising therefrom shall be solely and exclusively initiated and maintained in courts of the State of California for the County of San Diego.

SECTION 4 - CONTROL OF MATERIALS

ADD:

4-1.3.1 General. To the "WHITEBOOK", ADD the following:

1. Steel pipe in sizes larger than 18 inches shall require inspection at the source of production.
2. City lab staff or a qualified inspection agency approved by the Engineer shall witness all welding, lining, coating, and testing. You shall incur additional inspection costs outlined in 4-1.3.3, "Inspection of Items Not Locally Produced".
3. All parts of production (including but not limited to product fabrication, welding, testing, lining, and coating of straight pieces and specials) shall be performed or produced in the United States.
4. Welding and all testing shall be performed by certified welders and testing staff with credentials traceable in the United States.

4-1.3.2 Inspection by the Agency. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. The City will provide inspection and testing laboratory services within the continental United States within a 200-mile radius of the geographical limits of the City.

4-1.3.3 Inspection of Items Not Locally Produced. To the "WHITEBOOK", DELETE in its entirety.

ADD:

4-1.3.3 Inspection of Items Not Locally Produced. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

1. When you intend to purchase materials, fabricated products, or equipment from sources located more than 200 miles (321.9 km) outside the geographical limits of the City, City Lab staff or a qualified inspection agency approved by the Engineer, shall be engaged at your expense to inspect the materials, equipment, or process.
2. This approval shall be obtained before producing any material or equipment. City Lab staff or inspector shall evaluate the materials for conformance with the requirements of the Plans and Specifications. You shall forward reports required by the Engineer. No materials or equipment shall be shipped nor shall any processing, fabrication or treatment of such materials be done without proper inspection by City Lab staff or the approved agent. Approval by said agent shall not relieve you of responsibility for complying with the requirements of the Contract Documents.
3. The Engineer may elect City Lab staff to perform inspection of an out-of-town manufacturer. You shall incur additional inspection costs of the Engineer including lodging, meals, and incidental expenses based on Federal Per Diem Rates, along with travel and car rental expenses. If the manufacturing plant operates a double shift, a double shift shall be figured in the inspection costs.
 - a) At the option of the Engineer, full time inspection shall continue for the length of the manufacturing period. If the manufacturing period will exceed 3 consecutive weeks, you shall incur additional inspection expenses of the Engineer's supervisor for a trip of 2 Days to the site per month.
 - b) When the Engineer elects City Lab staff to perform out-of-town inspections, the wages of staff employed by the City shall not be part of the additional inspection expenses paid by you.
 - c) Federal Per Diem Rates can be determined at the location below:

<https://www.gsa.gov/portal/content/104877>

4-1.3.5 Special Inspection. To the "WHITEBOOK", ADD the following:

5. The payment for special inspection Work specified under this section shall be paid in accordance with 4-1.3.4.1, "Payment".

4-1.3.6 Preapproved Materials. To the "WHITEBOOK", ADD the following:

3. You shall submit in writing a list of all products to be incorporated in the Work that are on the AML.

4-1.6 Trade Names or Equals. To the "WHITEBOOK", ADD the following:

11. You shall submit your list of proposed substitutions for an "equal" item **no less than 15 Working Days prior to the Bid due date** and on the City's Product Submittal Form available at:

<http://www.sandiego.gov/publicworks/edocref/index.shtml>

SECTION 5 - UTILITIES

5-6 COOPERATION. To the "GREENBOOK", ADD the following:

1. Notify SDG&E at least 10 Working Days prior to excavating within 10 feet of SDG&E Underground High Voltage Transmission Power Lines (69 KV and higher).

SECTION 6 - PROSECUTION, PROGRESS AND ACCEPTANCE OF WORK

6-1.1 Construction Schedule. To the "WHITEBOOK", item 22, subsection b, DELETE in its entirety and SUBSTITUTE with the following:

- b) A curve value percentage comparison between the Contract Price and the updated cash flow forecast for each Project ID included in the Contract Documents. Curve values shall be set on a scale from 0% to 100% in intervals of 5% of the Contract Time. Refer to the Sample City Invoice materials in the Contract Documents and use the format shown. Your invoice amounts shall be supported by this curve value percentage. For previous periods, use the actual values and percentages and update the curve value percentages accordingly.

ADD:

6-3.2.1.1 Environmental Document.

1. The **Miramar Landfill Storm Water Improvements Project** is under the **Industrial General Permit Order, NPDES No. CAS0000001**, effective July 1, 2015. See FileCloud for document:
<https://filecloud.sandiego.gov/url/tzmzt4jlyr5s>
2. The City of San Diego has prepared a **CEQA Consistency Evaluation Memorandum**. See **Appendix A**.

3. You shall comply with all requirements of the **Industrial General Permit** and the **CEQA Consistency Evaluation Memorandum**. Compliance with the **Industrial General Permit Order** and the **CEQA Consistency Evaluation Memorandum** shall be included in the Contract Price.

SECTION 7 - RESPONSIBILITIES OF THE CONTRACTOR

7-3 INSURANCE. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-3 INSURANCE.

1. The insurance provisions herein shall not be construed to limit your indemnity obligations contained in the Contract.

7-3.1 Policies and Procedures.

1. You shall procure the insurance described below, at its sole cost and expense, to provide coverage against claims for loss including injuries to persons or damage to property, which may arise out of or in connection with the performance of the Work by you, your agents, representatives, officers, employees or Subcontractors.
2. Insurance coverage for property damage resulting from your operations is on a replacement cost valuation. The market value will not be accepted.
3. You shall maintain this Insurance for the duration of this Contract and at all times thereafter when you are correcting, removing, or replacing Work in accordance with this Contract. Your liabilities under the Contract, e.g., your indemnity obligations, is not deemed limited to the insurance coverage required by this Contract.
4. The payment for insurance shall be included in the Contract Price as bid by you. Except as specifically agreed to by the City in writing, you are not entitled to any additional payment. Do not begin any Work under this Contract until you have provided and the City has approved all required insurance.
5. Policies of insurance shall provide that the City is entitled to 30 Days (10 Days for cancellation due to non-payment of premium) prior written notice of cancellation or non-renewal of the policy. Maintenance of specified insurance coverage is a material element of the Contract. Your failure to maintain or renew coverage or to provide evidence of renewal during the term of the Contract may be treated by the City as a material breach of the Contract.

7-3.2 Types of Insurance.

7-3.2.1 Commercial General Liability Insurance.

1. Commercial General Liability Insurance shall be written on the current version of the ISO Occurrence form CG 00 01 07 98 or an equivalent form providing coverage at least as broad.
2. The policy shall cover liability arising from premises and operations, XCU (explosions, underground, and collapse), independent contractors, products/completed operations, personal injury and advertising injury, bodily injury, property damage, and liability assumed under an insured's contract (including the tort liability of another assumed in a business contract).
3. There shall be no endorsement or modification limiting the scope of coverage for either "insured vs. insured" claims or contractual liability. You shall maintain the same or equivalent insurance for at least 10 years following completion of the Work.
4. All costs of defense shall be outside the policy limits. Policy coverage shall be in liability limits of not less than the following:

<u>General Annual Aggregate Limit</u>	<u>Limits of Liability</u>
Other than Products/Completed Operations	\$2,000,000
Products/Completed Operations Aggregate Limit	\$2,000,000
Personal Injury Limit	\$1,000,000
Each Occurrence	\$1,000,000

7-3.2.2 Commercial Automobile Liability Insurance.

1. You shall provide a policy or policies of Commercial Automobile Liability Insurance written on the current version of the ISO form CA 00 01 12 90 or later version or equivalent form providing coverage at least as broad in the amount of \$1,000,000 combined single limit per accident, covering bodily injury and property damage for owned, non-owned, and hired automobiles ("Any Auto").
2. All costs of defense shall be outside the limits of the policy.

7-3.3 Rating Requirements. Except for the State Compensation Insurance Fund, all insurance required by this Contract as described herein shall be carried only by responsible insurance companies with a rating of, or equivalent to, at least "A-, VI" by A.M. Best Company, that are authorized by the California Insurance Commissioner to do business in the State, and that have been approved by the City.

7-3.3.1 Non-Admitted Carriers. The City will accept insurance provided by non-admitted, "surplus lines" carriers only if the carrier is authorized to do business in the State and is included on the List of Approved Surplus Lines Insurers (LASLI list).

All policies of insurance carried by non-admitted carriers shall be subject to all of the requirements for policies of insurance provided by admitted carriers described herein.

7-3.4 Evidence of Insurance. Furnish to the City documents e.g., certificates of insurance and endorsements evidencing the insurance required herein, and furnish renewal documentation prior to expiration of this insurance. Each required document shall be signed by the insurer or a person authorized by the insurer to bind coverage on its behalf. We reserve the right to require complete, certified copies of all insurance policies required herein.

7-3.5 Policy Endorsements.

7-3.5.1 Commercial General Liability Insurance.

7-3.5.1.1 Additional Insured.

1. You shall provide at your expense policy endorsement written on the current version of the ISO Occurrence form CG 20 10 11 85 or an equivalent form providing coverage at least as broad.
2. To the fullest extent allowed by law e.g., California Insurance Code §11580.04, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured.
3. The additional insured coverage for projects for which the Engineer's Estimate is \$1,000,000 or more shall include liability arising out of:
 - a) Ongoing operations performed by you or on your behalf,
 - b) your products,
 - c) your Work, e.g., your completed operations performed by you or on your behalf, or
 - d) premises owned, leased, controlled, or used by you.
4. The additional insured coverage for projects for which the Engineer's Estimate is less than \$1,000,000 shall include liability arising out of:
 - a) Ongoing operations performed by you or on your behalf,
 - b) your products, or
 - c) premises owned, leased, controlled, or used by you.

7-3.5.1.2 Primary and Non-Contributory Coverage. The policy shall be endorsed to provide that the coverage with respect to operations, including the completed operations, if

appropriate, of the Named Insured is primary to any insurance or self-insurance of the City and its elected officials, officers, employees, agents and representatives. Further, it shall provide that any insurance maintained by the City and its elected officials, officers, employees, agents and representatives shall be in excess of your insurance and shall not contribute to it.

7-3.5.1.3 Project General Aggregate Limit. The policy or policies shall be endorsed to provide a Designated Construction Project General Aggregate Limit that will apply only to the Work. Only claims payments which arise from the Work shall reduce the Designated Construction Project General Aggregate Limit. The Designated Construction Project General Aggregate Limit shall be in addition to the aggregate limit provided for the products-completed operations hazard.

7-3.5.2 Commercial Automobile Liability Insurance.

7-3.5.2.1 Additional Insured. Unless the policy or policies of Commercial Auto Liability Insurance are written on an ISO form CA 00 01 12 90 or a later version of this form or equivalent form providing coverage at least as broad, the policy shall be endorsed to include the City and its respective elected officials, officers, employees, agents, and representatives as additional insured, with respect to liability arising out of automobiles owned, leased, hired or borrowed by you or on your behalf. This endorsement is limited to the obligations permitted by California Insurance Code §11580.04.

7-3.6 Deductibles and Self-Insured Retentions. You shall pay for all deductibles and self-insured retentions. You shall disclose deductibles and self-insured retentions to the City at the time the evidence of insurance is provided.

7-3.7 Reservation of Rights. The City reserves the right, from time to time, to review your insurance coverage, limits, deductibles and self-insured retentions to determine if they are acceptable to the City. The City will reimburse you, without overhead, profit, or any other markup, for the cost of additional premium for any coverage requested by the Engineer but not required by this Contract.

7-3.8 Notice of Changes to Insurance. You shall notify the City 30 Days prior to any material change to the policies of insurance provided under this Contract.

7-3.9 Excess Insurance. Policies providing excess coverage shall follow the form of the primary policy or policies e.g., all endorsements.

7-3.10 Architects and Engineers Professional Insurance (Errors and Omissions Insurance).

1. For Contracts with required engineering services (e.g., Design-Build, preparation of engineered Traffic Control Plans (TCP), and etc) by you, you shall keep or require all of your employees or Subcontractors, who provide professional engineering services under this contract, Professional Liability coverage with a limit of **\$1,000,000** per claim and **\$2,000,000** annual aggregate in full force and effect.
2. You shall ensure the following:
 - a) The policy retroactive date is on or before the date of commencement of the Project.
 - b) The policy will be maintained in force for a period of 3 years after completion of the Project or termination of this Contract, whichever occurs last. You agree that for the time period specified above, there will be no changes or endorsements to the policy that affect the specified coverage.
3. If professional engineering services are to be provided solely by the Subcontractor, you shall:
 - a) Certify this to the City in writing and
 - b) Agree in writing to require the Subcontractor to procure Professional Liability coverage in accordance with the requirements set forth above.

7-4 NOT USED. To the "GREENBOOK", DELETE in its entirety and SUBSTITUTE with the following:

7-4 WORKERS' COMPENSATION INSURANCE AND EMPLOYERS LIABILITY INSURANCE.

1. In accordance with the provisions of §3700 of the California Labor Code, you shall provide at your expense Workers' Compensation Insurance and Employers Liability Insurance to protect you against all claims under applicable state workers compensation laws. The City, its elected officials, and employees will not be responsible for any claims in law or equity occasioned by your failure to comply with the requirements of this section.
2. Limits for this insurance shall be not less than the following:

<u>Workers' Compensation</u>	<u>Statutory Employers Liability</u>
Bodily Injury by Accident	\$1,000,000 each accident
Bodily Injury by Disease	\$1,000,000 each employee
Bodily Injury by Disease	\$1,000,000 policy limit

3. By signing and returning the Contract you certify that you are aware of the provisions of §3700 of the Labor Code which requires every employer to be insured against liability for worker's compensation or to undertake self-insurance in accordance with the provisions of that code and you shall comply with such provisions before commencing the Work as required by §1861 of the California Labor Code.

7-4.1. Waiver of Subrogation. The policy or policies shall be endorsed to provide that the insurer will waive all rights of subrogation against the City and its respective elected officials, officers, employees, agents, and representatives for losses paid under the terms of the policy or policies and which arise from Work performed by the Named Insured for the City.

7-6 THE CONTRACTORS REPRESENTATIVE. To the "GREENBOOK", paragraph one (1), DELETE in its entirety and SUBSTITUTE with the following:

Before starting the Work, the Contractor shall designate in writing a representative who shall have complete authority to act for it. An alternative representative may be designated as well. Both the representative and alternate shall be employees of the Contractor and shall not be assigned to a subcontractor unless approved by the Engineer in writing. The representative or alternate shall be present at the Work site whenever work is in progress or whenever actions of the elements necessitate its presence to take measures necessary to protect the Work, persons, or property. Any order or communication given to this representative shall be deemed delivered to the Contractor. A joint venture shall designate only one representative and alternate. In the absence of the Contractor or its representative, instructions or directions may be given by the Engineer to the superintendent or person in charge of the specific work to which the order applies. Such order shall be complied with promptly and referred to the Contractor or its representative.

7-8.6 Water Pollution Control. To the "WHITEBOOK", ADD the following:

6. Based on a preliminary assessment by the City, this Contract is subject to a **SWPPP**.

-20 ELECTRONIC COMMUNICATION. To the "WHITEBOOK", ADD the following:

2. Virtual Project Manager shall be used on this Contract.

7-21.1 General. To the "WHITEBOOK", item 3, DELETE in its entirety and SUBSTITUTE with the following:

3. During the construction phase of projects, the minimum waste management reduction goal is 90% of the inert material (a material not subject to

decomposition such as concrete, asphalt, brick, rock, block, dirt, metal, glass, and etc.) and 65% of the remaining project waste. You shall provide appropriate documentation, including a Waste Management Form attached as an appendix, and evidence of recycling and reuse of materials to meet the waste reduction goals specified.

SECTION 9 - MEASUREMENT AND PAYMENT

ADD:

9-3.7 Compensation Adjustments for Price Index Fluctuations. To the "WHITEBOOK" ADD the following:

5. This Contract **is not** subject to the provisions of The "WHITEBOOK" for Compensation Adjustments for Price Index Fluctuations for paving asphalt.

SECTION 217 - BEDDING AND BACKFILL MATERIALS

217-2.2 Stones, Boulders, and Broken Concrete. To the "GREENBOOK", Table 217-2.2, DELETE in its entirety and SUBSTITUTE with the following:

TABLE 217-2.2

Zone	Zone Limits	Maximum Size (greatest dimension)	Backfill Requirements in Addition to 217-2.1
Street or Surface Zone	From ground surface to 12" (300 mm) below pavement subgrade or ground surface	2.5" (63 mm)	As required by the Plans or Special Provisions.
Street or Surface Zone Backfill of Tunnels beneath Concrete Flatwork		Sand	Sand equivalent of not less than 30.
Trench Zone	From 12" (300 mm) below pavement subgrade or ground surface to 12" (300 mm) above top of pipe or box	6" (150 mm)	

Zone	Zone Limits	Maximum Size (greatest dimension)	Backfill Requirements in Addition to 217-2.1
Deep Trench Zone (Trenches 3' (0.9 m) wide or wider)	From 60" (1.5 m) below finished surface to 12" (300 mm) above top of pipe or box	Rocks up to 12" (300 mm) excavated from trench may be placed as backfill	
Pipe Zone	From 12" (300 mm) above top of pipe or box to 6" (150 mm) below bottom of pipe or box exterior	2.5" (63 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour).
Overexcavation	Backfill more than 6" (150 mm) below bottom of pipe or box exterior	6" (150 mm)	Sand equivalent of not less than 30 or a coefficient of permeability greater than 1-½ inches/hour (35 mm per hour). Trench backfill slurry (100-E- 100) per 201-1 may also be used.

SECTION 302 – ROADWAY SURFACING

302-7.4 **Payment.** To the "WHITEBOOK", item 1, last sentence, DELETE in its entirety and SUBSTITUTE with the following:

Payment shall not be made for additional fabric for overlapped areas.

SECTION 304 –METAL FABRICATION AND CONSTRUCTION

304-5 **PAYMENT.** To the "WHITEBOOK", REVISE section "**304-5**" to "**304-6**".

SECTION 800 - MATERIALS

800-1.2.4 Organic Soil Amendment. To the "GREENBOOK", ADD the following:

Type 4 organic soil amendment (compost) shall be derived from Green Material (yard waste and/or food waste) that is composted in accordance with California Code of Regulations, Title 14, Chapter 3 Article 7, 17868.3 (15 Day Process to Further Reduce Pathogens and kill weed and other seeds). Incorporated into the soil, compost improves soil texture; increases both nutrient and water holding capacity; and reduces the need for commercial fertilizer. Where applicable, Organic Soil Amendment can qualify as a component of LEED certification.

Type 4 organic soil amendment shall come from a compost facility that tests its compost on a quarterly basis and meets the requirements listed in Table 212-1.2.4 (B). You shall provide a copy of the most recent quarterly test results and a current representative sample of the compost to be used on the project to the City prior to approval and the compost being used.

The City of San Diego's Miramar Greenery produces Type 4 organic soil amendment (compost) and complies with the U.S. Composting Council's Seal of Testing Assurance Program. The Miramar Greenery is located within the City's Miramar Landfill at State Hwy. 52 and Convoy St. in San Diego.

<http://www.sandiego.gov/environmental-services/miramar/greenery/>

Table 800-1.2.4 (B)

Test Criteria	Acceptable Range	Unit of Measure	TMCC Test Method
pH	6.0 - 8.0		04.11-A 1:5 Slurry pH
Soluble salts	0 - 10	dS/m (mmhos/cm)	04.10-A 1:5 Slurry Method
Organic Matter	30 - 75%	% dry weight basis	05.07-A Loss-on-ignition Organic

Test Criteria	Acceptable Range	Unit of Measure	TMCC Test Method
			Matter Method (LOI)
Stability	≤ 8	mg CO ₂ /g OM/day	05.08-B carbon Dioxide Evolution Rate
Maturity	> 80% emergence	average % of control	05.05-A Germination and vigor
Pathogens			
Fecal coliform	Pass	Pass/Fail per U.S. EPA Class A standard, 40CFR 503.32(a)	07.01-B Fecal coliforms
Salmonella	Pass	Pass/Fail per U.S. EPA Class A standard, 40CFR 503.32(a)	07.02 Salmonella
Heavy Metal	Pass	Pass/Fail per U.S. EPA Class A standard, 40CFR 503.13(a) Tables 1 and 3.	04.06-Heavy Metals standards, and Hazardous Elements.
Particle Size	≥ 90%	% dry weight passing through 11mm	02.02-B Sample Sieving for Aggregate Size Classification

800-1.2.5 Mulch. To the "WHITEBOOK", item 3, subsection "I", ADD the following:

Type 9 Mulch shall be 0.25 to 0.5 inches maximum in size.

800-4.1.2 Compost. Compost shall be certified by the U.S. Composting Council's Seal of Testing Assurance Program or an approved equivalent program. Compost shall comply with the following requirements:

1. Organic Material Content shall be 35% to 75% by dry weight.

2. Carbon to nitrogen (C:N) ratio shall be between 15:1 and 40:1, preferably above 20:1 to reduce the potential for nitrogen leaching/washout.
3. Physical contaminants (manmade inert materials) shall not exceed 1% by dry weight.
4. pH shall be between 6.0 and 7.5.
5. Soluble Salt Concentration shall be less than 10 dS/m (Method TMECC 4.10-A, USDA and U.S. Composting Council).
6. Maturity (seed emergence and seedling vigor) shall be greater than 80% relative to positive control (Method TMECC 5.05-A, USDA and U.S. Composting Council)
7. Stability (Carbon Dioxide evolution rate) shall be less than 2.5 mg CO₂-C per g compost organic matter (OM) per day or less than 5 mg CO₂-C per g compost carbon per day, whichever unit is reported. (Method TMECC 5.08-B, USDA and U.S. Composting Council). Alternatively a Solvita rating of 6 or higher is acceptable.
8. Moisture shall be 25%-55% wet weight basis.
9. Select Pathogens shall pass US EPA Class A standard, 40 CFR Section 503.32(a).
10. Trace Metals shall pass US EPA Class A standard, 40 CFR Section 503.13, Tables 1 and 3.

SECTION 802 - NATIVE HABITAT PROTECTION, INSTALLATION, MAINTENANCE, AND MONITORING

802-2.1 Project Biologist. To the "WHITEBOOK", ADD the following:

5. The City will retain a qualified Project Biologist to perform biological monitoring work for this Contract. You shall coordinate your activities and Schedule with the activities and schedules of the Project Biologist.
6. Contractor shall verify the location of sensitive resource with the City prior to work in the Main Drain.

EQUAL OPPORTUNITY CONTRACTING PROGRAM (EOCP) SECTION A – GENERAL REQUIREMENTS

4.1 Nondiscrimination in Contracting Ordinance. To the “WHITEBOOK”, subsection 4.1.1, paragraph (2), sentence (1), DELETE in its entirety and SUBSTITUTE with the following:

You shall not discriminate on the basis of race, gender, gender expression, gender identity, religion, national origin, ethnicity, sexual orientation, age, or disability in the solicitation, selection, hiring, or treatment of subcontractors, vendors, or suppliers.

END OF SUPPLEMENTARY SPECIAL PROVISIONS (SSP)

TECHNICALS

Technicals

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SECTION 00 10 00
SUMMARY OF WORK

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. City and Contractor responsibilities.
- B. Contractor use of site and premises.
- C. Scope of Work.

1.2 CITY AND CONTRACTOR RESPONSIBILITIES. SEE GREENBOOK AND WHITEBOOK SECTION 7

A. City's responsibilities:

- 1. Identify staging area.
- 2. Identify parking area.
- 3. Identify sensitive resource areas and exclusion zones.
- 4. Identify soil disposal area.
- 5. Furnish compost mulch.
- 6. Furnish recycled water.

B. Contractor's responsibilities:

- 1. Furnish and Implement all work described in these documents.
- 2. Coordination with Engineer.
- 3. Protection of work areas.

1.3 CONTRACTOR USE OF SITE

A. Limit use of site to allow:

- 1. Coordinate with City to limit access in work areas as necessary.

1.4 SCOPE OF WORK

A. Project Objective:

- 1. The Project object is to reduce sediment and other pollutants in storm

water discharges at the West Miramar Waste Disposal Facility (Facility), including stabilizing sections of the Main Haul Road and road shoulders with asphalt concrete pavement or aggregate, reducing erosive storm water runoff and sediment mobilization through construction or implementation of stabilized roadside ditches, tracking controls, stabilized low flow road crossings, gabion check dam structures, slope interruption devices, soil berms, and drainage inlet and outlet protection, and stabilizing disturbed soil areas through soil preparation and application of hydro-seed and hydraulic mulch. Hydroseeding work shall be timed to occur between October 1 and December 15th. Contractor's Health and Safety Plan shall include working around hazards that are inherent to an active landfill site.

B. Scope of Work:

1. Mobilization.
2. Grading, installation of Geogrid, placement and compaction of Class II aggregate base and/or milled asphalt, asphalt concrete, speed humps, retroreflective pavement markers, and road striping improvements of Main Haul Road (referred to as "Main Haul Road Paving") as indicated on construction drawings.
3. Grading, placement of woven geotextile mat, and coarse aggregate on road shoulders < 5% slope (referred to as "Rock Shoulder") as indicated on Construction Drawings.
4. Grading, placement of cellular confinement shoulder, and coarse aggregate on road shoulders \geq 5% slope and aprons (referred to as "Cellular Confinement System") as indicated on Construction Drawings.
5. Excavation, grading, placement of woven geotextile mat, and riprap in constructed channels (referred to as "Channel with Course Aggregate") as indicated on Construction Drawings.
6. Excavation, grading, placement of woven geotextile mat, and articulated concrete block in constructed channels (referred to as "Articulated Concrete Block Channel") as indicated on Construction Drawings.
7. Excavation, grading, placement of woven geotextile fabric, coarse aggregate, unreinforced concrete slab (mud slab), and track-out control

plates to construct "Tracking Control Devices" as indicated on Construction Drawings.

8. Grading, placement of woven geotextile mat, articulated concrete block, riprap, and flared end section on culvert outlet at "Low Flow Crossings" as indicated on Construction Drawings.
9. Installation of woven geotextile mat, riprap, and debris fence at Upper Greenery and Inactive Deck (referred to as "Inlet Protection") as indicated on Construction Drawings.
10. Excavation, grading, and placement of woven geotextile mat, and riprap at Lower Greenery (referred to as "Lower Greenery Inlet Protection") as indicated on Construction Drawings.
11. Excavate, install woven geotextile mat, riprap-filled gabion basket box, k-rails, and gravel bags at Greenery (referred to as "Greenery Gabion Check Structures") as indicated on Construction Drawings.
12. Install and secure compost sock slope interruption devices on slope contour, with wooden stakes at "Erosion Control Area 1" as indicated on Construction Drawings.
13. Construct soil berms on contour, moisture and condition soil with compost mulch, imprint, apply hydro-seed and hydraulic mulch at "Erosion Control Area 2" as indicated on Construction Drawings.
14. Grading, moisture condition soil, track walk, install straw waddle slope interruption devices on contour, apply hydro-seed and hydraulic mulch at "Erosion Control Area 3" as indicated on Construction Drawings.
15. Grading, moisture condition soil, apply hydro-seed and hydraulic mulch at "Erosion Control Area 4" as indicated on Construction Drawings.
16. Contract close-out and de-mobilization.

C. A more detailed description of work scope elements is given in the specification sections that follow this section.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 00 31 13.16
CONSTRUCTION SCHEDULE

PART 1 - GENERAL (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 WORK ON ROADWAYS

- A. Contractor shall execute work on active haul roads in a manner which minimizes operational impacts to landfill operations.
- B. Grading, placement of base, and AC paving shall be limited to a single drive lane. Contractor shall provide signage within work zones and continuous traffic control utilizing flag-persons with 2-way radios to ensure proper control and flow of traffic.
- C. Work along shoulders for grading and placement of rock apron, rock shoulder with coarse aggregate, channel with coarse aggregate, cellular confinement shoulder, cellular confinement apron, and articulated concrete block channel shall be performed in a manner that ensures bi-directional traffic flow is maintained at all times. Signage and flag persons shall be utilized in immediate work zones where materials are being placed to ensure proper control and flow of traffic.

3.2 WORK OUTSIDE OF ROADWAYS

- A. Contractor's work shall not impact the City's landfilling or greenery operations

PART 4 - MEASUREMENT AND PAYMENT (NOT USED).

END OF SECTION

SECTION 01 31 19

PROJECT MEETINGS

PART 1 - GENERAL

A. WORK OF THIS SECTION

1. The Contractor shall participate in project meetings including, but not limited to, the following:
 - a. Preconstruction conference.
 - b. Progress meetings.
 - c. Pre- and final Site walks.

1.2 RELATED SECTIONS

- A. The Work of the following Sections apply to the Work of this Section. Work of other Sections of the Specifications not referenced below shall also apply to the extent required for the proper performance of the Work.
 1. Section 00 31 13.16 Construction Schedule.

1.3 PRECONSTRUCTION CONFERENCE

- A. Prior to the commencement of the Work at the site, a preconstruction conference will be held at a mutually agreed time and place which shall be attended by the Contractor's Project Manager, its superintendent, and its subcontractors, as the Contractor deems appropriate. Other attendees will be:
 1. Construction Manager.
 2. City's representatives.
 3. Governmental representatives as appropriate.
 4. Engineer.
 5. Others as requested by Contractor, City, or Construction Manager.
- B. Unless previously submitted to the Engineer, the Contractor shall bring to the conference one copy of each of the following:
 1. Cost Loaded Construction Schedule per Section 00 31 13.16. You shall conform to Section 6-1.7 of the Whitebook.

2. Procurement schedule of major equipment and materials, and items requiring long lead time.
- C. The purpose of the preconstruction conference is to designate responsible personnel and establish a working relationship. Matters requiring coordination will be discussed and procedures for handling such matters established. The complete agenda will be furnished by the Engineer to the Contractor prior to the meeting date. However, the Contractor should be prepared to discuss all of the items listed below.
1. Status of Contractor's insurance and bonds.
 2. Contractor's tentative schedules.
 3. Transmittal, review, and distribution of Contractor's submittals.
 4. Processing applications for payment.
 5. Maintaining record documents.
 6. Work sequencing.
 7. Traffic control and safety.
 8. Field decisions and change orders.
 9. Use of project site, office and storage areas, security, and housekeeping.
 10. City's needs.
 11. Major equipment deliveries and priorities.
- D. The Engineer will preside at the preconstruction conference and will arrange for keeping and distributing the minutes to all persons in attendance.

1.4 PROGRESS MEETINGS

- A. The Engineer will schedule and hold regular on-site progress meetings at least weekly and at other times as required by progress of the Work. The Contractor, Engineer, and all subcontractors active on the site shall attend each progress meeting. The Engineer may, at his or her discretion, request attendance by representatives of the Contractor's suppliers, manufacturers, and other subcontractors
- B. The Engineer shall preside at the meetings and will arrange for keeping and

distributing the minutes. The purpose of the meetings will be to review the progress of the Work, maintain coordination of efforts, discuss changes in scheduling, and resolve other problems which may develop. During each meeting, the Contractor is required to present any issues which may impact his work, with a plan to resolve these issues expeditiously.

C. The agenda will include but will not be limited to the following:

1. Transcript or minutes of previous meeting.
2. Safety and traffic control issues.
3. Community and public relations issues.
4. Progress since the last meeting.
5. The Contractor's three-week look-ahead schedule and planned Work progress for the next Work period.
6. Shop drawings, requests for information, survey requests, and substitution requests review.
7. Problems, conflicts, disputed issues, potential claims, and observations.
8. Field orders and change orders.
9. Applications for payment.
10. Quality standards and control.
11. Schedules, including off-site fabrication and delivery schedules. Corrective measures required.
12. Coordination between parties.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

4.1 PROJECT MEETINGS

- A. All work associated with Project Meetings for this project shall be included the Lump Sum Price for Mobilization. No separate payment for this item shall be made.

END OF SECTION

SECTION 01 33 00

SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. Wherever submittals are required hereunder, all such submittals by the Contractor shall be submitted to the Engineer in accordance with the GREENBOOK and WHITEBOOK Section 2-5.3 Submittals.
- B. Within 10 working days after the date of commencement as stated in the Notice to Proceed, the Contractor shall submit the following items to the Engineer for review:
 - 1. A Submittal Schedule of Shop Drawings, Samples, and proposed Substitutes ("Or-Equal") submittals. Additional submittals will not be accepted for review prior to acceptance of the Submittal Schedule by the Construction Manager.
 - 2. A list of all permits and licenses the Contractor shall obtain. Indicate the agency required to grant the permit, the expected date of submittal for the permit, and the required date for receipt of the permit.

1.2 RELATED SECTIONS

- A. The Work of the following Section apply to Work of this Section. The Work of other Sections of the Specifications, not referenced below, shall also apply to the extent required for proper performance of the Work.
 - 1. Section 01 31 19 – Project Meetings
 - 2. Section 01 31 13.16 - Construction Schedule.
 - 3. Section 01 50 00 - Construction Facilities and Temporary Controls.
 - 4. Section 01 55 26 - Traffic Control.
 - 5. Section 01 57 26 – Site Watering for Dust Control.
 - 6. Section 01 57 23 – Temporary Storm Water Pollution Controls.
 - 7. Section 01 56 00 – Environmental Protection.
 - 8. Section 33 40 00 – Drainage.

9. Section 32 10 00 - Asphalt Concrete Paving.
10. Section 31 22 16.13 – Roadway Subgrade Reshaping.
11. Section 31 25 14 – Erosion and Sedimentation Control.

1.3 PRELIMINARY SUBMITTALS LIST

A. The following is a preliminary list of submittals to be reviewed, updated and completed by the Contractor and submitted during the pre-construction meeting, the Contractor shall provide to the City for the Engineer's review a complete listing of all anticipated Contractor submittals and the proposed submittal dates for each, including but not limited to the following:

B. General Submittals

1. Project Schedule.
2. Storm Water Pollution Prevention Plan (SWPPP)
3. Worker Health and Safety Plan.
4. Community Health and Safety Plan.
5. Shop Drawings, if needed.
6. Earthwork Volume Calculations.
7. Asphalt Concrete Pavement Volume Calculations.
8. Compost Material Calculations.

C. Earthwork submittals

1. Project Sequencing Plan.

D. Miscellaneous Civil submittals

1. Asphalt Concrete (AC) Mix Designs, Certificate of Compliance.
2. Class II Aggregate Base Gradation, Certificate of Compliance.
3. Reflective Rumble Strip Manufacturer's Catalog Cut Sheets and Literature, Certificate of Compliance.
4. Road Striping Material Manufacturer's Catalog Cut Sheets and Literature, Certificate of Compliance.

5. Woven Geotextile Manufacturer's Product Data, Certificate of Compliance.
6. Geoweb Cellular Confinement Manufacturer's Product Data, Certificate of Compliance.
7. Geogrid Manufacturer's Product Data, Certificate of Compliance.
8. Aggregate Gradation, Certificate of Compliance for Rock Shoulders and Cellular Confinement Aprons.
9. Aggregate Gradation, Certificate of Compliance for Drainage Inlet Protection, and Gabion Check Dam Structures.
10. Aggregate Base Gradation, Certificate of Compliance for Tracking Control Devices.
11. Articulated Concrete Mat Manufacturer's Product Data.
12. Grizzly Rumble Grate Manufacturer's Product Data.
13. Portland Cement Mix Design, Certificate of Compliance.
14. Wire Mesh Manufacturer's Product Data.
15. Chain Link Fence Manufacturer's Product Data.
16. Wooden Stake Manufacturer's Catalog Cut Sheets.
17. Hydroseed Mixture Certifications.
18. Weed-free Straw Waddle Certification.
19. Hydraulic Mulch / Tackifier Design Mix.
20. Compost Sock Fabric Manufacturer's Product Data.
21. Gabion Basket Manufacturer's Product Data.
22. Gravel Bag Manufacturer's Product Data.
23. K-Rail Manufacturer's Product Data.

1.4 CONTRACTOR'S OPTIONS

- A. For products specified only by reference standard, select products by any manufacturer meeting that standard. To the maximum extent possible, provide products of the same generic kind from a single source.

- B. For products specified by naming several products or manufacturers, select any one of the products or manufacturers named that complies with the Contract Documents.
- C. For products specified by naming one or more products or manufacturers and stating "or equal," submit a Request for Substitution to the Engineer for any product or manufacturer that is not specifically named.
 - 1. Note that a limited time period is specified for the Contractor to submit Requests for Substitution. After that period has elapsed, the Engineer will no longer accept Requests for Substitution for review.
- D. For products specified by naming only one product or manufacturer and followed by words indicating that no substitution is permitted, there is no option and no substitution will be allowed.
- E. Where more than one choice is available as a Contractor's option, select a product that is compatible with other products already selected or specified.

1.5 SHOP DRAWINGS (IF NEEDED)

- A. Submit Shop Drawings, if needed, to City for review and acceptance in accordance with the accepted schedule of Shop Drawings and Sample submittals.
- B. Determine and verify before submitting each Shop Drawing or Sample:
 - 1. Field measurements, quantities, dimensions, specified performance criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto.
 - 2. Materials with respect to intended use, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work.
 - 3. Information relative to Contractor's sole responsibilities in respect of means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
- C. Contractor shall review and coordinate each Shop Drawing or Sample with other Shop Drawings and Samples, and with the requirements of

the Work and Contract Documents.

- D. All Contractor shop drawing submittals shall be carefully reviewed by an authorized representative of the Contractor, prior to submission to the Engineer. Each submittal shall be dated, signed, and certified by the Contractor, as being correct and in strict conformance with the Contract Documents. In the case of shop drawings, each sheet shall be so dated, signed, and certified. No consideration for review by the Engineer of any Contractor submittals will be made for any items which have not been so certified by the Contractor. All non-certified submittals will be returned to the Contractor without action taken by the Engineer, and any delays caused thereby shall be the sole responsibility of the Contractor.
- E. At the time of each submission, Contractor shall give Engineer specific written notice of variations, if any, that the Shop Drawing or Sample submitted may have from the requirements of the Contract documents. The notice shall be by written communication separate from the submittal; and, in addition, shall cause a specific notation to be made on each Shop Drawing and Sample submitted to Engineer for review and acceptance of each such variation.
- F. Review and acceptance of Shop Drawings and Samples will be only to determine if items covered by submittals will, after installation or incorporation in the Work, conform to information given in the Contract Documents, and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Review and acceptance will not extend to means, methods, techniques, sequences, or procedures of construction, except where a particular means, method, technique, sequence, or procedure of construction is specifically and expressly called for by the Contract Documents. The review and acceptance of a separate item as such will not indicate acceptance of the assembly in which the item functions. The review of Contractor shop drawing submittals shall not relieve the Contractor of the entire responsibility for the correctness of details and dimensions. The Contractor shall assume all responsibility and risk for any misfits due to any errors in Contractor submittals. The Contractor shall be responsible for the dimensions and the design of adequate connections and details. Contractor shall make corrections required to

submittals and shall return the required number of corrected copies of Shop Drawings and submit as required new Samples for review and acceptance. Contractor shall direct specific attention in writing to revisions other than corrections called for on previous submittals.

- G. Review and acceptance of Shop Drawings or Samples shall not relieve Contractor from responsibility for variation from requirements of the Contract Documents, unless Contractor has in writing called attention to each such variation at the time of submission, and written acceptance has been given of each such variation by specific written notation thereof incorporated in, or accompanying, the Shop Drawing or Sample acceptance.
- H. Where a Shop Drawing or Sample is required by Contract Documents or schedule of Shop Drawings and Sample submissions accepted by Engineer, related Work performed prior to review and approval of pertinent submittal will be at the sole expense and responsibility of Contractor.

1.6 SUBMITTAL PROCEDURES

- A. Wherever called for in the Contract documents, or where required by the Engineer, the Contractor shall furnish to the Engineer for review, 4 copies, plus the number the Contractor wants returned, not to exceed 6 copies, plus one reproducible copy, of each shop drawing submittal. The term "Shop Drawings" as used herein shall be understood to include detail design calculations, shop drawings, fabrication, and installation drawings, erection drawings, lists, graphs, catalog sheets, data sheets, and similar items.
- B. Normally, a separate transmittal form shall be used for each specific item or class of material or equipment for which a submittal is required. Transmittal of a submittal of various items using a single transmittal form will be permitted only when the items taken together constitute a manufacturers "package" or are so functionally related that expediency indicates review of the group or package as a whole. A multiple-page submittal shall be collated into sets, and each set shall be stapled or bound, as appropriate, prior to transmittal to the Engineer.
- C. A standard transmittal form approved by the Engineer shall be used for the project. Transmittal form shall identify Contractor, indicate date of

submittal, and include information prescribed by the transmitted form and assign a sequential number to each submittal in a format approved by the Engineer. Process transmittal forms to record actions regarding sample panels and sample installations.

- D. In order to indicate that the submittals have been Reviewed and Approved by Contractor as to conformance to Contract Documents, Contractor shall have made and shall use labels and/or a rubber stamp which shall materially conform to the following sample:

Submittal No:			
Contract No.		Project No.:	
Contractor:			
Reviewed and Approved for Conformance with the Contract Documents by:	(Signature)		
References:			
Drawing Sheet Nos.			
Specification Section Nos.			

- E. Except as may otherwise be indicated herein, the Engineer will return prints of each submittal to the Contractor with its comments noted thereon, within 15 calendar days following their receipt by the Engineer. It is considered reasonable that the Contractor shall make a complete and acceptable submittal to the Engineer by the second submission of a submittal item. The City reserves the right to withhold monies due the Contractor to cover additional costs of the review beyond the second submittal. The maximum review period for each submittal, including all resubmittals, will be 15 days per submittal.
- F. If copies of a submittal are returned to the Contractor marked "NO

EXCEPTIONS TAKEN," formal revision and resubmission of said submittal will not be required.

- G. If copies of a submittal are returned to the Contractor marked "MAKE CORRECTIONS NOTED," formal revision and resubmission of said submittal will be required when requested for confirmation.
- H. If a submittal is returned to the Contractor marked "REVISE-RESUBMIT," the Contractor shall revise said submittal and shall resubmit the required number of copies of said revised submittal to the Engineer.
- I. If a submittal is returned to the Contractor marked "REJECTED-RESUBMIT," the Contractor shall revise said submittal and shall resubmit the required.
- J. Fabrication of an item shall be commenced only after the Engineer has reviewed the pertinent submittals and returned copies to the Contractor marked either "NO EXCEPTIONS TAKEN" or "MAKE CORRECTIONS NOTED." Corrections noted on submittals shall be considered as changes necessary to meet the requirements of the Contract Documents and shall not be taken as the basis for changes to the contract requirements.
- K. Submittal Log
 - 1. Contractor shall maintain an accurate submittal log which lists all the submittals required by this Contract, showing current status of each submittal.
 - 2. Make the submittal log available for review upon request.

1.7 SUBMITTAL FORMAT AND COPIES

- A. Format for Shop Drawings:
 - 1. For shop drawings presented on sheets larger than 8 ½-inches by 17 inches, include on each drawing the drawing title, number, date, and revision numbers and dates.
 - 2. For shop drawings presented on sheets 8 ½-inches by 17 inches or less, conform to the format and quantity requirements for product data, and present as a part of the bound volume for the submittals required by the Section.
 - 3. Dimension drawings, except diagrams and schematic drawings;

prepare dimensioned drawings to scale. Identify materials and products for work shown.

4. Shop drawings shall be not less than 8 ½ inches by 11 inches nor more than 30 inches by 42 inches.
5. Submit detailed drawings and descriptions of proposed deviations from details or component arrangement indicated on the drawings.
6. Provide finished drawings for approval indicating proposed installation of the Work, and materials and equipment being furnished.
7. Copies of plans will not be accepted for submission as drawings, nor will catalog numbers alone of materials or equipment.
8. Data shown on working drawings shall be complete with respect to dimensions, design criteria, material of construction, and other detail to enable review.

B. Format for Product Data:

1. Present product data submittals for each Section of the Specifications as a complete, bound volume. Include a table of contents listing page and catalog item numbers for product data.
2. Indicate, by prominent notation, each product which is being submitted; indicate the Section and paragraph numbers to which it pertains.
3. Supplement product data with material prepared for the project to satisfy submittal requirements for which product data does not exist. Note that the material is developed specifically for the project.
4. Catalog data shall be explicit with regard to details of products being furnished and complete enough to enable the Design Consultant to determine that products submitted conform to requirements of specifications.
5. For submittals with more than one style, size, capacity, etc. of a product on a sheet, clearly indicate exactly which product type is being submitted for approval. Failure to do this is cause for rejection.
6. Catalog data shall bear name of manufacturer of product.

C. Samples:

1. Label or tag each sample identifying the specification Section number, manufacturers name and address, brand name, product identification number, and intended use in the Work.

D. Format of Administrative and Closeout Submittals:

1. Submit administrative and closeout submittals in the format and quantities required for shop drawings.
2. If the submittal includes a document which is to be used in the project or become a part of the project record, other than as a submittal, do not apply the Contractor's approval stamp to the document, but to a separate sheet accompanying the document.

1.8 MANUFACTURER'S INSTRUCTIONS

- A. Submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for shop drawings when specified in individual Sections.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.
- C. Resolve conflicts as directed by Engineer at no additional cost to City.

1.9 MANUFACTURER'S CERTIFICATES

- A. When specified in individual Sections, submit manufacturers' certificate(s) to Engineer for review, in quantities specified for shop drawings.
- B. Indicate material and equipment conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or product, but must be acceptable to Engineer.
- D. Where specified in Contract Documents that a certificate and/or affidavit shall be submitted to City for approval of a particular product, or component of a product, such submittals shall be made in accordance with the following:

1. A certificate submitted for a product, or component of a product, indicates test results proving that product, or component, meets the requirements of the standard specified in the Contract Documents.
2. An affidavit consisting of a sworn statement by an official of the company manufacturing the product indicating that information on certificate is true and accurate shall accompany the certificate.
3. A statement originating from Contractor, or his subcontractors, suppliers, or other agent which merely indicates that a particular item of equipment, product, or component of a product, meets the requirements of Contract Documents shall not be considered a certificate. A submittal made in this manner will not be accepted and corresponding equipment, product, or component, shall not be finally accepted.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

4.1 SUBMITTALS

- A. All work associated with Submittals for this project shall include the unit price for each item requiring a submittal. No separate payment for this item shall be made.

END OF SECTION

SECTION 01 42 00

REFERENCES

PART 1 - GENERAL

1.1 ABBREVIATIONS AND ACRONYMS

A. Within these Specifications, the following abbreviations and acronyms are used:

1. AC: Asphalt Cement
2. AOS: Apparent Opening Size
3. APCD: Air Pollution Control District
4. ASTM: American Society for Testing and Materials
5. CASQA: California Stormwater Quality Association
6. CIP: Capital Improvement Project
7. CQA: Construction Quality Assurance
8. GFRP: Glass Fiber Reinforced Polymer
9. IGP: Industrial General Permit
- 10.ISO: International Standards Organization
- 11.PDF: Portable Document Format
- 12.PLS: Pure Live Seed
- 13.RWQCB: Regional Water Quality Control Board
- 14.SWRCB: State Water Resources Control Board
- 15.SWPPP: Storm Water Pollution Prevention Plan

1.2 DEFINITIONS AND TERMS OF REFERENCE

A. Within these Specifications, the following terms are defined per the definitions in this Section:

1. Contractor: The individual, partnership, corporation, joint venture, or other legal entity having a Contract with the City to perform the Work. In the case of Work being done under a permit issued by the City, the

Contractor shall also be construed as the permittee.

2. Construction Documents: Your plans and details, including plans showing installation of major systems, equipment, fixed furnishings and graphics, the technical specifications and all other technical drawings, schedules, diagrams and specifications, attached Shop Drawings, Working Drawings, and submittals that are necessary to set forth in detail the requirements for the Project.
3. Construction Drawings- The drawings, profiles, cross sections, Standard Plans, Working Drawings, and Shop Drawings, or reproductions thereof, approved by the Engineer, which show the location, character, dimensions, or details of the Work.
4. Construction Manager: On-site Owner representative.
5. Design Consultant: Other engineer personnel hired by the City to consult on the design.
6. Engineer: The Chief Engineer of the City, Director of Public Works, or other person designated by the Board, acting either directly or through authorized agents.
7. Field Orders: A Field Order is a written agreement by the Engineer to compensate you for Work items in accordance with 3-3, "EXTRA WORK" or 3-4, "CHANGED CONDITIONS". A Field Order does not change the Contract Price or Contract Time or the intent of the Contract. The unused portions of the Field Orders shall revert to the City upon Acceptance.
8. Greenbook: The 2015 edition of the Standard Specifications for Public Works Construction
9. Owner: See City.
10. Requests for Information: Formal request by the Contractor to the Engineer for information regarding Contract Documents.
11. Shop Drawings: Drawings showing details of manufactured or assembled products proposed to be incorporated into the Work.
12. Substitution Requests: Submittals by the Contractor regarding proposed alternate materials than those specified in Contract

Documents.

13. Whitebook: The 2015 edition of the City of San Diego Standard Specifications for Public Works Construction

14. Work: That which is proposed to be constructed or done under the Contract or permit, including the furnishing of all labor, materials, equipment, and services.

PART 2 - MATERIALS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT (NOT USED)

END OF SECTION

SECTION 01 50 00

CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall provide facilities required for construction and temporary controls during construction, see the WHITEBOOK and GREENBOOK SECTION 7, including but not limited to the following:
1. Layout of temporary facilities.
 2. Temporary utilities: Furnish utilizes as required for own use. Coordinate with landfill operation and service utility agencies for use of existing facilities on site.
 3. Payment for utility service.
 4. Barriers.
 5. Protection of installed work.
 6. Temporary controls.
 7. Security.
 8. Traffic controls.
 9. Provide office and sanitary facilities as required for own use.
 10. Removal of utilities, facilities and controls.
 11. Removal of the above on completion of the Work.

1.2 RELATED SECTIONS

- A. The Work of the following Sections apply to Work of this Section. Work of other Sections for the Specifications not referenced below shall also apply to the extent required for proper performance of the Work.
1. Section 00 10 00- Summary of Work

1.3 LAYOUT OF TEMPORARY FACILITIES

- A. Submit drawings for approval showing proposed locations and sizes of

offices, material and equipment staging area and similar facilities. Where onsite space for temporary facilities is limited, allocation of available space will be made by Engineer. Should Contractor require space in addition to that allocated, Contractor shall make his own arrangements for storage of materials and equipment in a location off the construction site. For allocated space, submit to Engineer for approval proposed plan and layout for temporary offices, sanitary facilities, temporary construction roads, and temporary power service and distribution. Said facilities shall be located so as not to impede or prevent the principal function of existing facilities.

1. Coordinate with City to limit access in work areas as necessary.
2. Maintain construction site free of debris and stage materials in areas approved by City Engineer.

1.4 TEMPORARY UTILITIES

A. General:

1. Furnish utilities as required for own use. Coordinate with Engineer and servicing utility agencies for use of existing facilities on site.
2. Recycled water will be provided by the City to the Contractor at no cost for completion of on-site work activities.
3. Costs for all connections, meters, switch gear, phone board, construction potable water meter fees, costs for power, temporary power poles, phone service and equipment, construction water, drinking water, internet service, etc. for Contractor's field office shall be paid by Contractor. Include costs associated with these services in mobilization Lump Sum Price.
4. The Contractor shall pay all potable water permit fees and any fees for the potable water meter(s). All charges for potable water use shall be paid for by the Contractor, except as noted below.
5. Potable Water Connections: The Contractor shall not make connection to, or draw water from, any fire hydrant or pipeline without first obtaining permission of the authority having jurisdiction over the use of said fire hydrant or pipeline and from the agency owning the affected water system. For each such connection made, the Contractor shall first attach to the fire hydrant or pipeline a valve and a meter, if

required by the said authority, of a size and type acceptable to said authority and agency.

6. The Contractor shall provide potable water service for field offices.

B. Sanitary Facilities:

1. Toilet Facilities: Fixed or portable chemical toilets shall be provided wherever needed for the use of Contractor's employees. Toilets at construction job sites shall conform to the requirements of Subpart d, Section 1926.51 of the Occupational Safety and Hazards Administration (OSHA) Standards for Construction.
2. Sanitary and Other Organic Wastes: The Contractor shall establish a regular daily collection of all sanitary and organic wastes. All wastes and refuse from sanitary facilities provided by the Contractor or organic material wastes from any other source related to the Contractor's operations shall be disposed of away from the site in a manner satisfactory to the Engineer and in accordance with all laws and regulations pertaining thereto.
3. Remove temporary facilities at completion of Work.

1.5 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction, areas of excavation and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Protect non-owned vehicular traffic, stored materials, site and structures from damage.

1.6 PROTECTION OF INSTALLED WORK

- A. Protect installed Work and provide special protection where specified in individual specification Sections.
- B. Provide temporary and removable protection for installed Products. Control activities in immediate Work are to minimize damage.

1.7 TEMPORARY CONTROLS

A. Drainage and Erosion Control

1. The Contractor shall comply with all applicable requirements for storm

water discharge control contained in Section 01 56 00, Environmental Protection.

2. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
3. Protect site from puddling or running water. Provide best management practices as required to minimize soil erosion and avoid downstream sedimentation. Plan and execute construction using methods to control surface drainage from cuts and fills, as well as from borrow and waste disposal areas.
4. Minimize amount of bare soil exposed at any one time.
5. Provide temporary measures such as soil berms, dikes, and drains to control water flow.
6. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
7. Periodically inspect earthwork to detect evidence of erosion and sedimentation and promptly apply corrective measures when warranted.

B. Dust Control

1. Execute Work using methods to minimize raising dust from construction operations and, to prevent air-borne dust from dispersing into atmosphere.
2. Provide barriers to prevent unauthorized entry to construction and to protect existing facilities and adjacent properties from damage from demolition and construction operations.

C. Construction Noise Control

1. The Contractor shall oversee or undertake all construction activities so as to comply with all City noise regulations. Use appropriate construction methods and equipment, and furnish and install acoustical barriers as necessary, to avoid exceeding legal noise levels.

D. Rodent and Pest Control

1. Keep work area, including storage areas, free from rodents, noxious pests, and other vermin.

2. The Engineer shall notify Contractor on any non-compliance with this requirement and of the corrective action required. This notice, when delivered to Contractor or Contractor's representative at site of Work, shall be deemed sufficient notice of noncompliance and corrective action shall be required. After receiving notice, immediately take corrective action. If Contractor fails or refuses to eliminate rodents, pests or vermin and causes thereof promptly, City may have necessary extermination work performed and charge costs to Contractor.

E. Pollution Control

1. Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.
2. During the progress of the Work:
 - a. Keep the Work and surrounding premises within Work limits free of accumulations of dirt, dust, waste materials, debris and rubbish.
 - b. Keep dust generating areas wetted-down as needed to prevent air-borne dust.
 - c. Provide suitable containers for storage of waste materials, debris and rubbish until time of disposal.
 - d. Transport and Dispose of waste, debris and rubbish to the active landfilling area within Miramar Landfill. . There will be no tipping fee assessed for existing in-place refuse that is removed, and transported for disposal at onsite active landfilling area.

1.8 SECURITY

A. Security Program:

1. Protect Work from theft, vandalism, and unauthorized entry.
2. Develop, and submit a written Contractor security plan to be approved by the City prior to job mobilization.
3. Maintain program throughout construction period until directed by Engineer.

1.9 TRAFFIC CONTROLS

A. Traffic Control Program:

1. Provide Traffic Control to protect Workers, and minimize disruption of operational activities at Miramar Landfill.
2. Develop and submit a written Contractor traffic plan to be approved by the City prior to job mobilization.
3. Maintain program throughout construction period until directed by Engineer.

1.10 FIELD OFFICES

- A. Contractor's field office: Provide and maintain temporary offices on the job site. Post a sign identifying Contractor and listing emergency telephone number(s) at, and outside of, Contractor's field office.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

4.1 TEMPORARY FACILITIES FOR OWN USE

- A. All work associated with Temporary Facilities and Utilities for Contractor's Own Use for this project shall be included in the mobilization Lump Sum Price.

END OF SECTION

SECTION 01 55 19
TEMPORARY PARKING AREAS

PART 1 - GENERAL

1.1 SECTION INCLUDES

- A. City and Contractor's responsibilities.
- B. Contractor use of site premises for parking and staging.

1.2 CITY AND CONTRACTOR RESPONSIBILITIES

- A. City's responsibilities:
 - 1. Identify staging area.
 - 2. Identify parking area.
- B. Contractor's responsibilities:
 - 1. Maintain parking area and staging area clean and free of debris.
 - 2. Limit access to parking area and staging area to Contractor's personnel, vehicles, and equipment.

1.3 CONTRACTOR USE OF SITE

- A. Contractor shall limit use of site to work associated with the project.
- B. Contractor shall coordinate with City to gain access to site as needed for the scope of the project.
- C. Contractor shall maintain parking area free of debris and stage materials in areas approved by City Engineer.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENTS

- A. No compensation is provided for this section.

SECTION 01 55 26
TRAFFIC CONTROL

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall provide and implement a Traffic Control Plan for work during the main haul road asphalt concrete pavement improvements, rock shoulder and channel construction, and piping installation, as well as any other Work area activity that would restrict or constrict operational use of the facility roads conducted in accordance with the Contract Documents.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.

- 1. Section 01 33 00 Submittal Procedures

1.3 REFERENCE SPECIFICATION, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the "WHITEBOOK."

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit in writing the Traffic Control Plan to be implemented on site within seven days of award of Contract.

2 PRODUCTS (NOT USED)

3 EXECUTION (NOT USED)

4 MEASUREMENT AND PAYMENT

4.1 TRAFFIC CONTROL PLAN

- A. All labor and materials associated with the Traffic Control Plan shall be included in the mobilization lump sum price.

SECTION 01 55 29

STAGING AREAS

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. City and Contractor's responsibilities.
- B. Contractor use of site premises for staging areas.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not reference below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 01 50 00 – Construction Facilities and Temporary Controls
 - 3. Section 01 55 19 – Temporary Parking Areas
 - 4. Section 01 57 23 – Temporary Storm Water Pollution Controls
 - 5. Section 01 56 00 – Environmental Protection
 - 6. Section 31 14 13.16 – Soil Stockpiling

1.3 CITY AND CONTRACTOR RESPONSIBILITIES

- A. City's responsibilities:
 - 1. Identify staging area.
- B. Contractor's responsibilities:
 - 1. Maintain parking area clean and free of debris.
 - 2. Limit access to parking area to Contractor's personnel, vehicles, and equipment.
 - 3. Comply with Section 7 of the WHITEBOOK

1.4 CONTRACTOR USE OF SITE

- A. Contractor shall limit use of site to work associated with the project.

- B. Contractor shall coordinate with City to gain access to site as needed for the scope of the project.
- C. Contractor shall maintain staging area free of debris and stage materials in areas approved by City Engineer.
- D. Contractor shall store materials to prevent contact of pollutant with storm water, segregate and properly store chemicals and potentially hazardous materials, keep waste bins and containers closed when not in active use.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

- A. No payment is provided for this section.

END OF SECTION

SECTION 01 56 00
ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor and all of its employees and agents shall observe and comply with existing laws, ordinances, regulations and orders, in relationship to the protection of the total environment.
- B. The Contractor shall provide the following environmental controls:
 - 1. Worker Health and Safety Plan (HASp)
 - 2. Community Health and Safety Plan (HASp)
 - 3. Noise Abatement
 - 4. Storm Water Pollution Control (addressed in Section 015723)

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section – 00 10 10 Summary of Work
 - 2. Section – 01 33 00 Submittal Procedures

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the Regional and City of San Diego Supplement Amendments.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, a copy of the Worker HASP and Community HASP within seven days of award of the Contract. The HASPs shall include:
 - 1. One Worker Health and Safety Plan that includes hazards inherent to working on an active landfill site, and
 - 2. One Community Health and Safety Plan prepared in accordance with Lead Enforcement Agency (LEA) requirements.

1.5 BIOLOGICALLY SENSITIVE AREAS

- A. The Contractor shall verify the location of sensitive resources with the CITY prior to the commencement of work. Sensitive areas are identified on the Natural Resource Map dated February 2016 included in Appendix F.
- B. No personnel or equipment is allowed in the sensitive resources identified in the vicinity. The Contractor is responsible for excluding personnel and equipment from sensitive areas for the duration of the project.

1.6 NOISE ABATEMENT

- A. The Contractor shall comply with all City of San Diego Noise Abatement and Control Ordinances.

1.7 HEALTH AND SAFETY PLAN PROVISIONS

- A. Within seven days of the award of the Contract, the Contractor shall submit for review, to the Engineer and to the Local Enforcement Agency (LEA), a copy of its Worker and Community HASPs. The HASPs shall be in sufficient detail to include all aspects of health and safety that may be anticipated by the scope of work. The HASPs must be approved by the LEA.
- B. 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, is combustible, and contains no oxygen. Landfill gas can also migrate through soil near the landfill. The Contractor is, therefore, advised of the need for precautions against fire, explosion, and asphyxiation when working in or near construction areas which are in or near refuse areas. The Contractor's IIPP shall address this issue.
- C. The Contractor shall at all times be responsible for the safe protection of the Work and protection of its employees and the public. Review of the Contractor's HASPs by the City shall not relieve the Contractor of responsibility for any aspect of the work, or for compliance with all Federal, State, and local laws pertaining to health and safety. Strict Adherence to the Contractor's HASP will be required for all Contractor and subcontractor personnel.

- D. The contents of the H&SP must meet all regulatory requirements for the specific work that is proposed. The following is a list of some of the elements for a H&SP. Those plan elements which will not apply to the specific contract should be noted (such as "this construction does not involve any confined space work,").
- E. One or more of the following may be required to be included in an employer's (Contactor's) Worker and Community HASP.

1. Mandatory

- a. Site Background and Scope of Work: Site specific with an emphasis on the type(s) of service(s) performed, the hazards associated with such work, and the programs in effect to protect the employee against those recognized hazards.
- b. Injury and Illness Prevention Program (Title 8, California Code of Regulations, Section 3203): Required of all employers of 10 or more employees.
- c. Code of Safe Practices (Cal. Code Regs., Title 8, §1509): All employers are required to have a Code of Safe Practices in writing and posted at the work place.
- d. Emergency Medical Services (Cal. Code Regs., Title 8, §1512): All employers are required to have this program in writing.
- e. Fire Protection Program (Cal. Code Regs., Title 8, §1920): All employers are required to have this program in writing.

2. Required by Scope of Work

- a. Hazard Communication Program (Cal. Code Regs., Title 8, §5194): All employers are required to have this program in writing if there

is a potential for their employees to come in contact with any products that may be hazardous.

- b. Hearing Conservation Program (Cal. Code Regs., Title 8 §5097): This program shall be written into the HASP if employee noise exposures meet or exceed the levels outlined in Cal. Code Regs., Title 8, §5097.
- c. Personal Protective Equipment (Cal. Code Regs., Title 8, §§3380-3400): Requirements must be included in the HASP if personal protective equipment is required for the contracted work.

1.8 NUISANCE WATER

- A. It is anticipated that nuisance water, such as rainfall or surface runoff, may be encountered within the construction site during the period of construction under this contract. The Contractor, by submitting his bid, will be held to have investigated the risks arising from such waters and to have made his bid in accordance therewith.
- B. 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. The cost for any repairs due to such damage shall be the responsibility of the Contractor. The Contractor shall dispose of nuisance water at his own expense and without adverse effects upon the work site or any other property.

1.9 DRAINAGE PRECAUTION

- A. At the completion of each work day, the Contractor shall take all necessary preventive measures to avoid or minimize damage resulting in erosion or impounding caused by storm water runoff within the construction area. Erosion control measures shall consist of constructing gravel bag berms, desilting basins, drains, temporary storm water pumping facilities, and other such measures required to provide for the prevention, control and abatement of storm water discharges and damage resulting therefrom. The cost for any repairs due to such damage shall be the sole responsibility of the Contractor.

1.10 CONSTRUCTION WATER

- A. The Contractor shall make arrangements for developing water sources at the project and supply of all labor and equipment to collect, load, transport, apply, and dispose of water as necessary for compaction of materials, testing, dust control and other construction use.
- B. The Contractor may develop sources of water supply or obtain water from private sources. Payment for all cost connected with developing a water source or obtaining water shall be made by the Contractor. Water shall be clean and free from objectionable amounts of acids, alkalis, salts or organic materials. The Contractor may be required to furnish the Engineer with a water analysis performed by a laboratory acceptable to the Engineer. The Contractor shall pay all costs of sampling, testing and reporting the test results.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICE COMPLETENESS

- A. All work associated with Biologically Sensitive Areas, Noise Abatement, Health and Safety Provisions, Nuisance Water, Drainage Precaution, and Construction Water or other site controls as necessary for Environmental Protection for this project shall be included in the various Bid items. No separate payment for this item shall be made.

END OF SECTION

SECTION 01 57 23

TEMPORARY STORM WATER POLLUTION CONTROLS

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor and all of its employees and agents shall observe and comply with existing laws, ordinances, regulations and orders, in relationship to the protection of storm water. See the GREENBOOK and WHITEBOOK Section 7-8 for requirements.
- B. The Contractor shall provide the following storm water pollution controls:
 - 1. Storm Water Pollution Prevention Plan Development
 - 2. Storm Water Pollution Prevention Plan Implementation

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 00 10 10 Summary of Work
 - 2. Section 01 33 00 Submittal Procedures
 - 3. Section 31 14 13.16 Soil Stockpiling

1.3 WATER POLLUTION CONTROL

- A. The Project is subject to the requirements of Order No. R9-2013-0001, *National Pollutant Discharge Elimination System (NPDES) Permit and Waste Discharge Requirements for Discharges from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds within the San Diego Region* on May 8, 2013 (hereafter referred to as "MS4 Permit"), under the State Water Resources Control Board (SWRCB) and the requirements of Order No. 2014-0057-DWQ (NPDES No. CAS000001) *General Permit for Storm Water Discharges Associated with Industrial Activities* (IGP or General Permit). All permit related documents can be located at the SWRCB website at www.waterboards.ca.gov. This project lies within the boundaries of the San Diego Regional Water Quality Control Board (RWQCB). Compliance manuals

applicable to this project are the California Best Management Practices Handbook found at www.cabmphandbooks.com and the City of San Diego Storm Water Standards Manual found at www.sandiego.gov (hereafter referred to as "the Manuals"). The City of San Diego SWPPP template can be found at www.sandiego.gov.

- B. This project shall conform to the MS4 and IGP Permit and modifications thereto. The Contractor shall therefore understand and have necessary certifications and fully comply with the applicable provisions of the Permits and all modifications, thereto, the Manuals, and Federal, State and local regulations and requirements that govern the Contractor's operations and stormwater and non-stormwater discharges from both the project site and areas of disturbance outside of the project limits during all construction phases. Attention is directed to Section 7- "Responsibilities of the Contractor" of the Standard Specifications for Public Works Construction (SSPWC) Section 7-3-Liability Insurance and 7-4-Workers' Compensation Insurance, of the SSPWC. The Contractor shall comply with the requirements of the Permits and Manuals for those areas and shall implement, inspect and maintain the required water pollution control practices. Installing, inspecting and maintaining water pollution control practices on areas outside the project area and City right of way, not specifically arranged and provided for by the City in the execution of this contract, will not be paid for without prior written approval.
1. For projects subject to a SWPPP, the Contractor shall prepare, submit, and implement a SWPPP in accordance with the "Whitebook", Section 7-8.6 "WATER POLLUTION CONTROL"
 2. The Contractor's SWPPP shall include a construction activity Best Management Practice (BMP) plan (consistent with the latest California Storm Water Quality Association (CASQA) Construction BMP Handbook and the Order) developed to work in conjunction with the site's SWPPP and as required to eliminate both non-storm water pollution and storm water run-off related pollution resulting from the construction activities.
 3. A detailed narrative with a general description of the Contractor's Stormwater Management Protocol, implementation procedures, BMP's, pre-and post- storm inspection activities, and record keeping in sufficient detail to indicate to the Engineer that the Contractor

understands his responsibilities for providing BMP's consistent with the Order.

4. Name and emergency contact information of Contractor's responsible site personnel.
5. The Contractor is responsible for installing BMPs, and for providing BMP inspections, and repair of any damaged BMP before, during and after a storm event.
6. Contractor shall not be entitled to any time extensions or compensation for any cost due to any action required as a result of Contractor's preparation, compliance or failure to comply with those provisions of the SWPPP within Contractor's control. Contractor will be responsible for ensuring that Contractor's subcontractor(s) comply with the provisions of this Section.
7. Contractor shall be liable for any action or fine imposed by the regulatory agencies for any incidents of non-compliance.
8. The Contractor shall at all times exercise reasonable precaution to protect channels, storm drains and bodies of water from pollution, including siltation arising from Contractor's operations, or erosion siltation from completed areas. Pollution control work shall consist of implementing Best Management Practices or constructing facilities in accordance with local, state, or federal regulations which may be required to provide for control of pollutants.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, the SWPPP, and other pertinent information satisfactory to the Engineer, demonstrating that materials and methods Contractor proposes to use will comply with the provisions of this Section. Submittals shall be in accordance with the requirements of Section 01 33 00.

PART 2 - PRODUCTS [NOT USED]

PART 3 - EXECUTION [NOT USED]

PART 4 - MEASUREMENT AND PAYMENT

4.1 WATER POLLUTION CONTROL PLAN

- A. All work associated with the Water Pollution Control Plan including Contractor preparation and implementation of the Water Pollution Control Plan or other site controls as necessary for Temporary Storm Water Pollution Controls for this project shall be included in the various Bid items. No separate payment for this item shall be made.

END OF SECTION

SECTION 01 57 26
SITE WATERING FOR DUST CONTROL

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor is responsible for compliance with Fugitive Dust Regulations issued by the Air Pollution Control District (APCD).

1.2 RELATED SECTIONS

- A. Section 01 33 00 – Submittal Procedures

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the GREENBOOK) together with the latest adopted editions of the WHITEBOOK. See Section 7 of the WHITEBOOK and GREENBOOK

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, a recycled water use log and other pertinent information satisfactory to the Engineer, demonstrating the recycled water use on site, for dust control or other purposes. Submittals shall be in accordance with the requirements of Section 01 33 00 – Submittals.

PART 2 - PRODUCTS

2.1 RECYCLED WATER

- A. Recycled water will be made available on the project site by the City for dust control purposes at no cost to the Contractor.

2.2 OTHER

- A. The Contractor may choose to use an alternative source of water for dust control purposes.

PART 3 - EXECUTION

3.1 WATER APPLICATION

- A. 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 project related 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.
- B. Water shall be applied by the Contractor at a rate that does not cause runoff from the area where water is applied.
- C. If recycled water is used, non-potable tanks, pipes, and other conveyances shall be marked "NON-POTABLE WATER – DO NOT DRINK."
- D. If recycled water is used, non-potable water shall be conveyed in tanks or drain pipes that will not be used to convey potable water at a later time.
- E. If recycled water is used, the Contractor shall meet California Department of Health Services water reclamation criteria and the Regional Water Quality Control Board requirements for discharge.

PART 4 - MEASUREMENT AND PAYMENT

4.1 WATER APPLICATION FOR DUST CONTROL

- A. All costs for equipment and labor associated with Dust Control for this project shall be included in the various Bid items. No separate payment for this item shall be made.

SECTION 31 05 13

SOILS FOR EARTHWORK

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. This section sets forth the requirements for the subgrade preparation, processing, unclassified excavation, unclassified fill placement, and processing and placement of the earthwork elements for the Project improvements. Work will be performed in accordance with the applicable provisions of Section 300 - Earthwork of the Standard Specifications for Public Works Construction (SSPWC) as modified and supplemented herein. See Section 300-of the GREENBOOK and WHITEBOOK.

1.2 WORK INCLUDED

- A. In general, earthwork operations include the following:
1. Compliance with Rule 59 mitigation measures as approved by the Air Pollution Control Officer of the Air Pollution Control District (APCD). Compliance with Title V Site Permits.
 2. The Contractor shall be responsible for implementation and monitoring of all APCD mitigation measure requirements.
 3. Excavate waste material and transport to disposal area.
 4. Excavate, transport, process, disk, dry and/or moisture condition, place, and compact local borrow material.

1.3 INTRODUCTION/SPECIAL CONDITIONS

- A. Construction Drawings
1. The Construction Drawings were prepared based on aerial topographic maps of the landfill. The surface of the landfill at present and for the duration of this Contract is not necessarily that shown as existing contours on the grading plan due to differential settlement of the landfill mass and re- grading for maintenance purposes. It is anticipated that there may be additional movement during construction. The proposed grading and improvement project is a "line and grade" project. Prior to Construction of any improvement, the

Contractor shall verify actual field conditions, and shall make all adjustments in the subgrade for paving and hardscape installation as appropriate, to meet this design intent.

2. Field modifications of subgrade, and excavation and fill volumes for earthwork, may result in an adjustment of Contract Bid Quantities. Such modifications do not constitute a change in the "character" of the work, as these adjustments are anticipated, and are typical of landfill surface improvement construction.
3. Adjustments in Contract quantities will be compensated under the applicable Bid Item, and in accordance with SSPWC, unless otherwise noted.

1.4 SUBMITTALS REQUIRED

- A. The Contractor shall thoroughly review the Specifications and identify all required project submittals. The submittals listed below are intended as a general summary of the submittal items contained in this section. This submittal list does not release the Contractor from the responsibility of identifying and providing all information requested.
- B. Submittals as required by the General Conditions and these Technical Specifications.

PART 2 - MATERIAL

2.1 UNCLASSIFIED FILL MATERIAL

- A. Fill material to be used for unclassified fills shall be generated from the unclassified excavations or stockpile(s) stockpiled in proximity to the work by the CITY.
- B. Rocks or rock fragments greater than 6 inches in any dimension shall be removed from the fill and disposed of as directed by the Engineer. Rocks or rock fragments less than 6 inches shall be distributed evenly throughout the fill. "Nesting" of rock or rock fragments will not be permitted.

PART 3 - EXECUTION

3.1 GENERAL

- A. All earthwork shall conform to the following requirements, where applicable, unless otherwise noted in these Specifications:

1. The Contractor shall be solely responsible for the satisfactory completion of all earthwork in accordance with the Drawings and Specifications.
2. Equipment used in the excavation, transport, stockpiling, processing, drying, placement and compaction of all materials used in construction of the alternative final cover system will be standard-of-practice grading machinery of known specifications suitable for performing the required work in a timely and efficient manner.
3. All material considered by the Engineer to be unsuitable for use in the construction of the project shall be removed. All materials incorporated as part of the compacted fill must be inspected and placement must be observed by the Engineer.
4. All clearing, grubbing, stripping, and site preparation for the Project shall be accomplished to the satisfaction of the Engineer prior to placement of fill material.
5. Material deemed unlikely to meet the performance specification and not disposed of during clearing and grubbing of demolition shall be removed from the stockpiles, borrow and/or fill as directed by the Engineer.
6. The surface to receive fill shall be prepared (cleared, grubbed, or stripped) to the satisfaction of the engineer and the fill shall be placed, spread, mixed, watered and compacted in accordance with the project specifications and as recommended by the engineer.
7. The intermediate cover surface prepared to receive fill shall be scarified, disked, or bladed until it is uniform and free from uneven features which may prevent uniform compaction. The scarified intermediate cover surface shall then be brought to ± 2 percent of optimum moisture content, mixed as required, and compacted to a minimum of 90 percent of the maximum dry density as determined by American Society for Testing and Materials (ASTM) D1557. The prepared surface shall be firm and unyielding. If the scarified zone is greater than eight inches in depth, the excess material shall be removed and placed in lifts of six to eight inches in thickness. Prior to fill placement, the ground surface to receive fill shall be inspected by the Engineer.

8. Irreducible rock or rock fragments in excess of three (3) inches in maximum dimension shall not be utilized for the upper 12-inches of subgrade surfaces.
9. Suitable and sufficient processing and compaction equipment shall be on the job site to handle the amount of fill being stockpiled, processed, mixed and/or placed. If necessary, excavation or import equipment will be shut down temporarily in order to allow time for proper preparation and/or compaction of fills. Sufficient water apparatus will be provided with due consideration to the type of fill material, curing characteristics, rate of placement, and time of year.
10. Fill material shall be placed in thin, horizontal lifts with a maximum uncompacted thickness not to exceed six to eight inches. Each layer shall be spread evenly and thoroughly mixed to obtain a near uniform condition in each layer. In areas of excess lift thickness, re-grading of the surface to the maximum lift thickness will be completed prior to construction of additional lifts.
11. The minimum compaction for all fill materials placed shall be 90 percent of the maximum dry density as determined by ASTM D1557 and the specified moisture content is +/- 2 percent of optimum moisture content as determined by ASTM D1557 and D2216.
12. Material import shall not exceed the capability of the processing operation to meet the project specifications.
13. Representative samples of fill material will be tested in the laboratory in order to determine the physical characteristics of the material. During processing and/or grading operations, no soils, or soil types, other than those previously analyzed may be used unless the Engineer documents the suitability of these soils with appropriate additional testing paid for by the Contractor.
14. Where tests by the Engineer indicate that the moisture content or density of any layer of fill, or portion thereof, is below the Project requirements, the particular layer or portion thereof will be reworked until the required moisture/density has been attained. The moisture/density of the reworked fill will be verified by re-testing by the Engineer. No additional fill shall be placed over an area until the prior fill has been tested horizontally and vertically and meets the

requirements of these Specifications to the satisfaction of the Engineer.

15. Where work is interrupted by heavy rains, fill operations shall not be resumed until observations and field tests by the Engineer indicate the moisture content and density of the in-place fills and/or materials intended for placement are within the limits previously specified. This requirement does not preclude the Contractor from disking or aerating excessively wet areas to enhance drying.
16. As determined by the Engineer, fill over cut slopes shall be properly keyed through top soils, colluvium, or creep material into firm material. Final cover soils placed over foundation layer soils shall be excluded from this requirement. All transitions shall be stripped of all loose soils prior to placing fill.
17. Throughout construction, all excavated and/or fill areas shall be graded to provide positive drainage to collection/transport features and to prevent ponding of water. No ponding of water will be allowed on the landfill surface. Surface water shall be controlled to avoid damage to adjoining properties or to finished work on the site.
18. The Contractor shall assume all responsibility for damage to completed portions of the final cover improvements arising from sequencing of work and location of haul routes.

3.2 REFUSE REMOVAL AND RECONSOLIDATION

- A. The majority of work will occur in soil cover areas overlying refuse. It is not anticipated that the Contractor will encounter refuse during the earthwork for this project.
- B. The Contractor shall be responsible for implementation and monitoring of all requirements of the Rule 59 mitigation measures as required by APCD.
- C. If refuse is encountered the Contractor shall immediately notify the Resident Engineer and the LEA. All excavated refuse shall be transported in covered vehicles to the active disposal area of the Miramar Landfill as directed by the Engineer. A 1-foot thick interim cover layer of soil shall be placed and compacted by the Contractor above the exposed waste. No waste s

3.3 SUBGRADE PREPARATION

- A. Subgrade preparation shall be performed in accordance with Section 31 22 16.13 of these specifications.
- B. The subgrade shall be prepared to create the lines and grades to be reflected in the ultimate project improvement final grade. The Contractor's proposed sequencing and methods for achieving the design intent for development of the subgrade shall be outlined in the submitted Earthwork Operations Plan.

PART 4 - MEASUREMENT AND PAYMENT

4.1 REFUSE EXCAVATION AND DISPOSAL

- A. The Contract unit price per cubic yard for refuse removal and transport to the active disposal area of the Miramar Landfill for disposal shall include full compensation for all labor, material, and equipment required for excavation of waste material, including daily health and safety monitoring, and transport to the working face of the approved disposal area.
- B. Final pay quantities for refuse excavation and disposal will be based on surveyed pre-excavation and post-excavation topography, and shall include all previously landfilled refuse removed and disposed in accordance with these specifications to the limits indicated on the drawings. Survey shall be performed by the City's surveyor on staff at the Miramar Landfill at no cost to the Contractor. Work performed outside of these limits will not be compensated unless the work has been authorized by the Engineer.

4.2 UNCLASSIFIED EXCAVATION

- A. Payment for "Unclassified Grading/Excavation/Fill" is intended to compensate the Contractor for the volume of material required to be excavated to achieve design subgrade elevations vs. pre-construction elevations.
- B. Full compensation for all labor, material, and equipment required to perform unclassified excavation and unclassified fills including transport, placement, and compaction of the material in designated fills as indicated on the Drawings shall be included in the Contractor's unit price.
- C. Pay quantities for over-excavation will be based on a methodology that is agreed upon between the Contractor and Engineer prior to performance of work. This may include field-measurement of the excavation envelope or a physical survey. Quantities will be measured and paid based on in-situ

volumes.

- D. Pay quantities for discrepancies between design and actual pre-construction field conditions shall be determined by comparing the volumetric difference between the design contours and pre-construction surveys of the cut/fill areas. The City will commission and pay for the pre-construction survey.

END OF SECTION

SECTION 31 05 16

AGGREGATES FOR EARTHWORK

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

- A. Aggregate shall be placed as shown on the Construction Drawings.
- B. The Contractor shall furnish all labor, materials, tools, supervision, transportation, and equipment necessary to install aggregate as shown on the Construction Drawings.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 – Submittal Procedures
 - 2. Section 31 05 13 – Soils for Earthwork
 - 3. Section 31 05 19.13 – Geotextile
 - 4. Section 31 05 19.19 – Geogrid
 - 5. Section 31 05 19.29 – Geoweb
 - 6. Section 31 14 13.16 – Soil Stockpiling
 - 7. Section 31 25 14 – Erosion and Sedimentation Control
 - 8. Section 31 22 16.13 – Roadway Subgrade Reshaping
 - 9. Section 32 10 00 – Asphalt Concrete Paving
 - 10. Section 33 40 00 – Drainage

1.3 REFERENCES

- A. 2015 Standard Specifications for Public Works Construction (“Greenbook”)
- B. 2015 City of San Diego Standard Specification for Public Works Construction (“Whitebook”)
- C. American Society for Testing and Materials (ASTM) standards:

1. ASTM C 33 Standard Specification for Concrete Aggregates
2. ASTM C 131 Resistance of Small Size Coarse Aggregate to Degradation in the Los Angeles Machine

1.4 SUBMITTALS

- A. The Contractor shall submit, in writing, materials testing reports and other pertinent information satisfactory to the Engineer to the City, Construction Manager, Engineer, and Construction Quality Assurance (CQA) Consultant. These submittals shall demonstrate the materials and methods Contractor proposes to use and how these materials and methods comply with the provisions of this Section. Submittals shall be in conformance with Section 01 33 00. Material shall not be delivered until approved by the Construction Manager, CQA Consultant, and Engineer.
- B. Suitability Tests of Proposed Materials: For materials not produced by a supplier currently authorized by the City Materials and Testing Lab, tests for conformance with the Specifications shall be performed before start of the Work. The samples shall be identified to show the name of the material, aggregate source, name of the supplier, contract number, and the segment of the Work where the material represented by the sample is to be used. Results of all tests shall be submitted to the Construction Manager for approval. Materials to be tested shall include aggregate base.
- C. The Contractor shall submit certification and test records of all proposed materials showing that they meet the applicable requirements.

1.5 QUALITY ASSURANCE

- A. Quality assurance testing will be provided by the City Materials and Testing Lab. Frequency of sampling and testing for quality control laboratory testing for alternative materials is at the sole discretion of the Engineer. This Section does not relieve the Contractor from securing the necessary construction control testing during construction when required by the contract documents.
- B. The Contractor shall ensure that the materials and methods used for placement of aggregate meets the requirements of the Construction Drawings and this Section. Any material or method that does not conform to these documents, or to alternatives approved in writing by the Engineer will be rejected and shall be repaired or replaced by the Contractor.

PART 2 - MATERIALS

2.1 GENERAL

- A. Aggregate materials shall meet grading and durability requirements specified in the Standard Specifications for Public Works Construction (SSPWC) Section 200, the 2015 CalTrans Standard Specifications, and/or the current version of ASTM C33.
- B. Alternative materials to those specified below may be proposed by the Contractor. Alternative materials must meet gradation and durability requirements as specified by the Engineer and confirmed by the City's material testing laboratory. Frequency of sampling and testing for quality control laboratory testing for alternative materials is at the sole discretion of the Engineer.

2.2 CLASS II AGGREGATE BASE

- A. Class II Aggregate Base shall be used under the AC pavement on the Haul Road, as directed by the Engineer.
- B. Class II Aggregate Base shall meet the grading requirements specified in the SSPWC Section 200-2 and the 2015 CalTrans Standard Specifications Section 26.
- C. Class II Aggregate Base shall be graded as "A" or "B" per the ASTM C131 test.

2.3 RECYCLED IN-PLACE MILLED ASPHALT CONCRETE MATERIALS

- A. Milled asphalt concrete materials cut from the roadway subgrade may be considered for reuse as recycled in-place milled asphalt concrete base material by the Engineer.
 - 1. For materials to be considered for reuse, the Contractor must provide samples acceptable to the Engineer to the City's material testing laboratory.
 - 2. The City's material testing laboratory will perform testing of the provided samples per the Engineer's direction.
 - 3. Acceptance of the milled asphalt concrete materials to be used as recycled in-place milled asphalt concrete base materials will be at the sole discretion of the Engineer.
- B. Recycled in-place milled asphalt concrete materials shall have an R-value

greater than 70.

2.4 RECYCLED MILLED ASPHALT CONCRETE MATERIALS

- A. Milled asphalt concrete materials from outside sources may be considered for reuse as recycled milled asphalt concrete base material by the Engineer.
 - 1. For materials to be considered for use, the Contractor must provide samples acceptable to the Engineer to the City's material testing laboratory.
 - 2. The City's material testing laboratory will perform testing of the provided samples per the Engineer's direction.
 - 3. Acceptance of the milled asphalt concrete materials to be used as recycled milled asphalt concrete base materials will be at the sole discretion of the Engineer.
- B. Recycled milled asphalt concrete materials shall have an R-value greater than 70.

2.5 #357 COARSE AGGREGATE

- A. #357 Coarse Aggregate shall be used in the Cellular Confinement Stabilization, Rock Shoulder with Coarse Aggregate, and Cellular Confinement Shoulder, or as directed by the Engineer.
- B. #357 Coarse Aggregate shall meet the grading requirements specified in ASTM C33 for #357 Coarse Aggregate.
- C. #357 Coarse Aggregate shall be graded as "A" or "B" per the ASTM C131 test.

2.6 #2 COARSE AGGREGATE

- A. #2 Coarse Aggregate shall be used on the Tracking Control Device ramps, or as directed by the Engineer.
- B. #2 Coarse Aggregate shall meet the grading requirements specified in ASTM C33 for #2 Coarse Aggregate.
- C. #2 Coarse Aggregate shall be graded as "A" or "B" per the ASTM C131 test.

2.7 RIP RAP

- A. ¼ Ton
 - 1. ¼ Ton Rip Rap shall be used in the Energy Dissipater, or as directed by

the Engineer.

2. ¼ Ton Rip Rap shall conform to the requirements of the 2015 CalTrans Standard Specifications Section 72-2 for ¼ Ton rock slope protection.
3. ¼ Ton Rip Rap shall meet the quality requirements of the SSPWC Section 200-1.6.3.

B. No. 1

1. No. 1 Rip Rap shall be used in the Low Flow Crossing, Inlet Protection, and Lower Greenery Inlet Protection, or as directed by the Engineer.
2. No. 1 Rip Rap shall conform to the requirements of the 2015 CalTrans Standard Specifications Section 72-2 for No. 1 rock slope protection.
3. No. 1 Rip Rap shall meet the quality requirements of the SSPWC Section 200-1.6.3.

C. No. 2

1. No. 2 Rip Rap shall be used in the Greenery Gabion Check Structures, or as directed by the Engineer.
2. No. 2 Rip Rap shall conform to the requirements of the 2015 CalTrans Standard Specifications Section 72-2 for No. 2 rock slope protection.
3. No. 2 Rip Rap shall meet the quality requirements of the SSPWC Section 200-1.6.3.

D. No. 3

1. No. 3 Rip Rap shall be used in the Channel with Coarse Aggregate, or as directed by the Engineer.
 2. No. 3 Rip Rap shall conform to the requirements of the 2015 CalTrans Standard Specifications Section 72-2 for No. 3 rock slope protection.
- No. 3 Rip Rap shall meet the quality requirements of the SSPWC Section 200-1.6.3.

PART 3 - EXECUTION

3.1 PLACEMENT

- A. The Contractor shall place the aggregate in a manner which does not tear or otherwise damage any underlying, overlying, or otherwise adjacent

geosynthetic installed per Section 31 05 19.

- B. The Contractor shall load and place aggregate in a manner which minimizes fines production and migration.
- C. Unless otherwise specified by the Construction Drawings, these Specifications, or the Engineer, Class II Aggregate Base and Milled Asphalt shall be placed at optimum moisture content plus or minus 2%. Optimum moisture content shall be determined by ASTM D1557.
- D. Unless otherwise specified by the Construction Drawings, these Specifications, or the Engineer, Class II Aggregate Base and Milled Asphalt shall be compacted to a minimum density of 90% of the maximum dry density as determined by ASTM D1557.
- E. Unless otherwise specified, Class II Aggregate Base and Milled Asphalt shall be placed in lifts not to exceed 12 inches thick of loose material.
- F. #357 Coarse Aggregate shall be placed such that it extends at least two (2) inches above the geoweb material during construction of the Cellular Confinement Stabilization BMP.
- G. #357 Coarse Aggregate shall be placed such that it is flush with the top of the geoweb materials or higher during construction of the Cellular Confinement Shoulder.

3.2 PROTECTION OF WORK

- A. The Contractor shall use all means necessary to protect all work of this Section.

PART 4 - MEASUREMENT AND PAYMENT

4.1 MILLED ASPHALT

- A. Payment for the loading, transport, placement, moisture conditioning, and compaction of asphalt grindings shall be determined volumetrically based on the number of full truck loads tallied by the Engineer. The Contractor shall be responsible for ensuring that all truck loads are approved and recorded by the Engineer. No payment will be made for loads that are not properly documented.

END OF SECTION

SECTION 31 05 19.13

GEOTEXTILE

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: This section includes providing all material, labor, tools and equipment for delivery, storage, placement, seaming, and installation of geotextiles as shown in the Contract Documents and as specified in this section.

1.2 RELATED SECTIONS AND DIVISIONS

- A. The applicable provisions of the General Conditions shall govern the work in this Section.
- B. Section 00 10 00 – Summary of Work
- C. Section 01 33 00 – Submittal Procedures
- D. Section 31 05 13 – Soils for Earthwork
- E. Section 31 05 16 – Aggregates for Earthwork
- F. Section 31 05 19.19 – Geogrid
- G. Section 31 05 19.29 – Geoweb
- H. Section 31 22 16.13 – Roadway Subgrade Reshaping
- I. Section 31 25 14 – Erosion and Sedimentation Control
- J. Section 31 25 14.13 – Hydraulically Applied Erosion Control
- K. Section 32 10 00 – Asphalt Concrete Paving
- L. Section 33 40 00 – Drainage

1.3 REFERENCES

- A. American Society for Testing and Materials (ASTM) standards:
 - 1. ASTM D 4355 Standard Test Method for Deterioration of Geotextile from Exposure to Ultraviolet Light and Water
 - 2. ASTM D 4491 Standard Test Method for Water Permeability of Geotextile by Permittivity

3. ASTM D 4533 Standard Test Method for Trapezoid Tearing Strength of Geotextile
4. ASTM D 4632 Standard Test Method for Breaking Load and Elongation of Geotextile (Grab Method)
5. ASTM D 4751 Standard Test Method for Determining Apparent Opening Size of a Geotextile
6. ASTM D 6241 Standard Test Method for Static Puncture Strength of Geotextiles and Geotextile-Related Products Using a 50-mm Probe
7. ASTM D 5261 Standard Test Method for Measuring Mass Per Unit Area of Geotextile

1.4 SUBMITTALS

- A. The Contractor shall submit to the Engineer, at least 7 days prior to geotextile delivery, the following information regarding the proposed geotextile:
 1. Manufacturer and product name;
 2. Minimum property values of the proposed geotextile and the corresponding test procedures;
 3. Projected geotextile delivery dates; and
 4. List of geotextile roll numbers for rolls to be delivered to the site.
- B. At least 7 days prior to geotextile placement, the Contractor shall submit to the Engineer the manufacturing quality control certificates for each roll of geotextile. The certificates shall be signed by responsible parties employed by the geotextile manufacturer (such as the production manager). The quality control certificates shall include:
 1. Lot, batch, and/or roll numbers and identification; and
 2. Results of quality control tests, including a description of the test methods used.

1.5 QUALITY ASSURANCE

- A. The Contractor shall ensure that the geotextile and installation methods used meet the requirements of the Construction Drawings and this Section. Any material or method that does not conform to these documents, or to alternatives approved in writing by the Engineer, will be rejected and shall be

repaired or replaced by the Contractor.

- B. The Contractor shall be aware of all monitoring and conformance testing required by the Construction Quality Assurance (CQA) Plan. The Engineer will perform this monitoring. If non-conformances or other deficiencies are found in the Contractor's materials or completed work, the Contractor will be required to repair the deficiency or replace the deficient materials.

PART 2 - MATERIALS

2.1 GEOTEXTILE PROPERTIES

- A. Geotextile suppliers shall furnish materials in which the "Minimum Average Roll Values", as defined by the Federal Highway Administration (FHWA), meet or exceed the criteria specified in Table 31 05 19.13-1.
- B. The geotextile for "Rock Shoulder," "Cellular Confinement Shoulder," "Greenery Gabion Check Structure," "Inlet Protection," "Lower Greenery Inlet Protection," "Low Flow Crossing," "Tracking Control Device," "Channel with Coarse Aggregate," "Articulated Concrete Block Channel," and "Type 2 Energy Dissipation," shall be TenCate Mirafi 500X woven polypropylene geotextile or approved equal.
- C. The geotextile for "Cellular Confinement Stabilization" shall be TenCate Mirafi HP 570 woven polypropylene geotextile or approved equal.

2.2 MANUFACTURING QUALITY CONTROL

- A. The geotextile shall be manufactured with quality control procedures that meet or exceed generally accepted industry standards.
- B. The Geotextile Manufacturer shall sample and test the geotextile to demonstrate that the material conforms to the requirements of these Specifications.
- C. Any geotextile sample that does not comply with this Section shall result in rejection of the roll from which the sample was obtained. The Contractor shall replace any rejected rolls.
- D. If a geotextile sample fails to meet the quality control requirements of this Section the Geotextile Manufacturer shall sample and test, at the expense of the Manufacturer, rolls manufactured in the same lot, or at the same time, as the failing roll. Sampling and testing of rolls shall continue until a pattern

of acceptable test results is established to bound the failed roll(s).

- E. Additional sample testing may be performed, at the Geotextile Manufacturer's discretion and expense, to identify more closely any non-complying rolls and/or to qualify individual rolls.
- F. Sampling shall, in general, be performed on sacrificial portions of the geotextile material such that repair is not required. The Geotextile Manufacturer shall sample and test the geotextile, at a minimum once every 130,000 ft², to demonstrate that the geotextile properties conform to the values specified in Table 31 05 19.13-1. At a minimum, the following manufacturing quality control tests shall be performed on each type of geotextile:
 - 1. Mass per unit area according to ASTM D5261
 - 2. Grab strength according to ASTM D4632
 - 3. Tear strength according to ASTM D4533
 - 4. Puncture strength according to ASTM D4833
 - 5. Apparent opening size (AOS) according to ASTM D4751
- G. The Geotextile Manufacturer shall comply with the certification and submittal requirements of these Specifications.

2.3 PACKING AND LABELING

- A. Geotextile shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
- B. Geotextile rolls shall be marked or tagged with the following information:
 - 1. Manufacturer's name;
 - 2. Product identification;
 - 3. Lot or batch number;
 - 4. Roll number; and
 - 5. Roll dimensions.

2.4 TRANSPORTATION, HANDLING, AND STORAGE

- A. Handling, unloading, storage, and care of the geotextile prior to and

following installation at the site, is the responsibility of the Contractor. The Contractor shall be liable for any damage to the materials incurred prior to final acceptance by the Engineer.

- B. The geotextile shall be protected from sunlight, excessive heat or cold, puncture, or other damaging or deleterious conditions. The geotextile shall be protected from mud, dirt, and dust. Any additional storage procedures required by the Geotextile Manufacturer shall be the responsibility of the Contractor.

PART 3 - EXECUTION

3.1 FAMILIARIZATION

- A. Prior to implementing any of the work described in this Section, the Contractor shall become thoroughly familiar with the site, the site conditions, and all portions of the work falling within this Section. See Whitebook and Greenbook Sections 300-8 and 300-9
- B. Inspection:
 - 1. The Contractor shall carefully inspect the installed work of all other Sections and verify that all such work is complete to the point where the installation of this Section may properly commence without adverse effect.
 - 2. If the Contractor has any concerns regarding the installed work of other Sections or the site, the Engineer shall be notified, in writing, prior to commencing the work. Failure to notify the Engineer or installation of the geotextile will be construed as Contractor's acceptance of the related work of all other Sections.

3.2 PLACEMENT

- A. The Contractor shall handle all geotextile in such a manner as to ensure they are not damaged in any way.
- B. The Contractor shall take any necessary precautions to prevent damage to underlying materials during placement of the geotextile.
- C. After unwrapping the geotextile from its opaque cover, the geotextile shall not be left exposed for a period in excess of 15 days unless a longer exposure period is approved in writing by the Geotextile Manufacturer.

- D. The Contractor shall take care not to entrap stones, excessive dust, or moisture beneath the geotextile during placement.
- E. The Contractor shall anchor or weight all geotextile with sandbags, or the equivalent, to prevent wind uplift.
- F. The Contractor shall examine the entire geotextile surface after installation to ensure that no foreign objects are present that may damage the geotextile or adjacent layers. The Contractor shall remove any such foreign objects and shall replace any damaged geotextile.

3.3 SEAMS AND OVERLAPS

- A. Geotextile shall be overlapped a minimum of 12 inches.

3.4 REPAIR

- A. Any holes or tears in the geotextile shall be repaired using a patch made from the same geotextile. Geotextile patches shall be overlapped a minimum of 12 inches. Should any tear exceed 50% of the width of the roll, that roll shall be removed and replaced.
- B. Where geosynthetic materials underlie the geotextile being placed, care shall be taken to remove any soil or other material that may have penetrated the torn geotextile.

3.5 PLACEMENT OF OVERLYING MATERIALS

- A. The Contractor shall place overlying materials (aggregate, rebar, rebar chairs, concrete, etc.) on top of the geotextile in such a manner as to ensure that:
 - 1. The geotextile and the underlying materials are not damaged;
 - 2. Minimum slippage occurs between the geotextile and the underlying layers during placement; and
 - 3. Excess stresses are not produced in the geotextile.
- B. Sections of plywood or other approved methods shall be employed by the Contractor in highly trafficked areas and where materials are to be stockpiled (i.e. under rebar bundles) to minimize the potential for damage to the underlying geotextile.
- C. Equipment shall not be driven directly on the geotextile.
- D. At no time shall stakes or other objects be driven through the geotextile.

3.6 PROTECTION OF WORK

- A. The Contractor shall use all means necessary to protect all work of this Section.
- B. In the event of damage, the Contractor shall make repairs and replacements to the satisfaction of the Engineer at the expense of the Contractor.

TABLE 31 05 19.13 - 1

REQUIRED PROPERTY VALUES FOR GEOTEXTILE

PROPERTIES	QUALIFIERS	UNITS	MINIMUM AVERAGE ROLL VALUES		TEST METHOD
			MACHINE DIRECTION	CROSS DIRECTION	
<u>Type</u>			woven		--
<u>Mechanical Requirements</u>					
Grab tensile strength	minimum	lb	200	200	ASTM D 4632
Grab tensile elongation	minimum	%	15%	15%	
Trapezoid tear strength	minimum	lb	75	75	ASTM D 4533
Puncture strength	minimum	lb	700	700	ASTM D 6241
<u>Durability</u>					
Ultraviolet resistance @ 500 hours	minimum	% strength retained	70	70	ASTM D 4355
<u>Filter Requirements</u>					
Apparent opening size (O ₉₅)	maximum	mm		0.425	ASTM D 4751
Permittivity	minimum	S ⁻¹		0.05	ATSM D 4491

PART 4 - PAYMENT AND MEASUREMENT

- A. The cost of geotextiles material and installation shall be factored into the unit price of the corresponding BMP into which it is being incorporated. No separate payment will be made for geotextiles.

END OF SECTION

SECTION 31 05 19.19

GEOGRID

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: This section includes providing all material, labor, tools and equipment for installation of geogrids as shown in the Contract Documents and as specified in this section.
- B. The geogrid is used for subgrade stabilization under the Asphalt Concrete pavement base material.

1.2 RELATED SECTIONS AND DIVISIONS

- A. The applicable provisions of the General Conditions shall govern the work in this Section.
- B. Section 00 10 00 Summary of Work
- C. Section 01 33 00 Submittal Procedures
- D. Section 31 05 13 Soils for Earthwork
- E. Section 31 05 16 Aggregates for Earthwork
- F. Section 31 05 19.13 Geotextile
- G. Section 31 05 19.29 Geoweb
- H. Section 31 22 16.13 Roadway Subgrade Reshaping
- I. Section 31 25 14 Erosion and Sedimentation Control
- J. Section 31 25 14.13 Hydraulically Applied Erosion Control
- K. Section 32 10 00 Asphalt Concrete Paving
- L. Section 33 40 00 Drainage

1.3 REFERENCES

- A. Latest version of American Society for Testing and Materials (ASTM) standards:

1.4 SUBMITTALS

- A. The Contractor shall submit to the Engineer, at least 7 days prior to geogrid delivery, the following information regarding the proposed geogrid:
 - 1. Manufacturer and product name;
 - 2. Minimum property values of the proposed geogrid and the corresponding test procedures;
 - 3. Projected geogrid delivery dates; and
 - 4. List of geogrid roll numbers for rolls to be delivered to the site.
- B. At least 7 days prior to geogrid placement, the Contractor shall submit to the Engineer the manufacturing quality control certificates for each roll of geogrid. The certificates shall be signed by responsible parties employed by the geogrid manufacturer (such as the production manager). The quality control certificates shall include:
 - 1. Lot, batch, and/or roll numbers and identification; and
 - 2. Results of quality control tests, including a description of the test methods used.

1.5 QUALITY ASSURANCE

- A. The Contractor shall ensure that the geogrid and installation methods used meet the requirements of the Construction Drawings and this Section. Any material or method that does not conform to these documents, or to alternatives approved in writing by the Engineer, will be rejected and shall be repaired or replaced by the Contractor.
- B. The Contractor shall be aware of all monitoring and conformance testing required by the Construction Quality Assurance (CQA) Plan. The Engineer will perform this monitoring. If non-conformances or other deficiencies are found in the Contractor's materials or completed work, the Contractor will be required to repair the deficiency or replace the deficient materials.

PART 2 - MATERIALS

2.1 GEOGRID PROPERTIES

- A. Geogrid suppliers shall furnish materials in which the "Minimum Average Roll Values", as defined by the Federal Highway Administration (FHWA), meet or exceed the strength and material properties of 2015 Greenbook Table 213-5.2E Type R3 Multi-Axial Geogrid.

2.2 MANUFACTURING QUALITY CONTROL

- A. The geogrid shall be manufactured with quality control procedures that meet or exceed generally accepted industry standards.
- B. The Geogrid Manufacturer shall sample and test the geogrid to demonstrate that the material conforms to the requirements of these Specifications.
- C. Any geogrid sample that does not comply with this Section shall result in rejection of the roll from which the sample was obtained. The Contractor shall replace any rejected rolls.
- D. If a geogrid sample fails to meet the quality control requirements of this Section the Geogrid Manufacturer shall sample and test, at the expense of the Manufacturer, rolls manufactured in the same lot, or at the same time, as the failing roll. Sampling and testing of rolls shall continue until a pattern of acceptable test results is established to bound the failed roll(s).
- E. Additional sample testing may be performed, at the Geogrid Manufacturer's discretion and expense, to identify more closely any non-complying rolls and/or to qualify individual rolls.
- F. Sampling shall, in general, be performed on sacrificial portions of the geogrid material such that repair is not required. The Geogrid Manufacturer shall sample and test the geogrid, at a minimum once every 130,000 ft², to demonstrate that the geogrid properties conform to the values specified in Table 31 05 19.19-1.
- G. The Geogrid Manufacturer shall comply with the certification and submittal requirements of these Specifications.

2.3 PACKING AND LABELING

- A. Geogrid shall be supplied in rolls wrapped in relatively impermeable and opaque protective covers.
- B. Geogrid rolls shall be marked or tagged with the following information:
 - 1. Manufacturer's name;
 - 2. Product identification;
 - 3. Lot or batch number;
 - 4. Roll number; and

5. Roll dimensions.

2.4 TRANSPORTATION, HANDLING, AND STORAGE

- A. Handling, unloading, storage, and care of the geogrid prior to and following installation at the site, is the responsibility of the Contractor. The Contractor shall be liable for any damage to the materials incurred prior to final acceptance by the Engineer.
- B. The geogrid shall be protected from sunlight, excessive heat or cold, puncture, or other damaging or deleterious conditions. The geogrid shall be protected from mud, dirt, and dust. Any additional storage procedures required by the Geogrid Manufacturer shall be the responsibility of the Contractor.

PART 3 - EXECUTION

3.1 FAMILIARIZATION

- A. Prior to implementing any of the work described in this Section, the Contractor shall become thoroughly familiar with the site, the site conditions, and all portions of the work falling within this Section.
- B. Inspection:
 - 1. The Contractor shall carefully inspect the installed work of all other Sections and verify that all such work is complete to the point where the installation of this Section may properly commence without adverse effect.
 - 2. If the Contractor has any concerns regarding the installed work of other Sections or the site, the Engineer shall be notified, in writing, prior to commencing the work. Failure to notify the Engineer or installation of the geogrid will be construed as Contractor's acceptance of the related work of all other Sections.

3.2 PLACEMENT

- A. The Contractor shall handle all geogrid in such a manner as to ensure they are not damaged in any way.
- B. The Contractor shall take any necessary precautions to prevent damage to underlying materials during placement of the geogrid.
- C. After unwrapping the geogrid from its opaque cover, the geogrid shall not be

left exposed for a period in excess of 15 days unless a longer exposure period is approved in writing by the Geogrid Manufacturer.

- D. The Contractor shall anchor or weight all geogrid with sandbags, or the equivalent, to prevent wind uplift.

3.3 SEAMS AND OVERLAPS

- A. Geogrid shall be overlapped a minimum of 12 inches.

3.4 REPAIR

- A. Any holes or tears in the geogrid shall be repaired using a patch made from the same geogrid. Geogrid patches shall be overlapped a minimum of 12 inches. Should any tear exceed 50% of the width of the roll, that roll shall be removed and replaced.

3.5 PLACEMENT OF OVERLYING MATERIALS

- A. The Contractor shall place overlying materials (aggregate, rebar, rebar chairs, concrete, etc.) on top of the geogrid in such a manner as to ensure that:
 - 1. The geogrid and the underlying materials are not damaged;
 - 2. Minimum slippage occurs between the geogrid and the underlying layers during placement; and
 - 3. Excess stresses are not produced in the geogrid.
- B. Sections of plywood or other approved methods shall be employed by the Contractor in highly trafficked areas and where materials are to be stockpiled (i.e. under rebar bundles) to minimize the potential for damage to the underlying geogrid.
- C. Equipment shall not be driven directly on the geogrid.

3.6 PROTECTION OF WORK

- A. The Contractor shall use all means necessary to protect all work of this Section.
- B. In the event of damage, the Contractor shall make repairs and replacements to the satisfaction of the Engineer at the expense of the Contractor.

PART 4 - PAYMENT AND MEASUREMENT

- A. Geogrids shall be measured for payment by the square yard of geogrid

placed, not including any material for overlaps or splices.

END OF SECTION

SECTION 31 05 19.29

GEOWEB

PART 1 - GENERAL

1.1 SUMMARY

- A. Work Included: This section includes providing all material, labor, tools and equipment for installation of "Cellular Confinement with Aggregate and Geotextile for Stabilization" and "Cellular Confinement with Aggregate and Geotextile for Road Shoulders" as shown in the Contract Documents and as specified in this section.
- B. The Cellular Confinement System shall be used for lateral stabilization of placed aggregate.

1.2 RELATED SECTIONS AND DIVISIONS

- A. The applicable provisions of the General Conditions shall govern the work in this Section.
- B. Section 00 10 00 – Summary of Work
- C. Section 01 33 00 – Submittal Procedures
- D. Section 31 05 13 – Soils for Earthwork
- E. Section 31 05 16 – Aggregates for Earthwork
- F. Section 31 05 19.13 – Geotextile
- G. Section 31 05 19.19 – Geogrid
- H. Section 31 22 16.13 – Roadway Subgrade Reshaping
- I. Section 31 25 14 – Erosion and Sedimentation Control
- J. Section 31 25 14.13 – Hydraulically Applied Erosion Control
- K. Section 32 10 00 – Asphalt Concrete Paving
- L. Section 33 40 00 – Drainage

1.3 REFERENCES

- A. American Association of State Highway and Transportation Officials (AASHTO)

- B. AASHTO M 218 - Steel Sheet, Zinc-Coated (Galvanized) for Corrugated Steel Pipe.
- C. AASHTO M 288 - Geotextile Specification for Highway Applications
- D. American Society of Testing and Materials (ASTM)
- E. ASTM D 1505 - Density of Plastics by the Density-Gradient Technique.
- F. ASTM D 1603 - Standard Test for Carbon Black in Olefin Plastics
- G. ASTM D 1693 - Environmental Stress-Cracking of Ethylene Plastics.
- H. ASTM D 5199 - Measuring Nominal Thickness of Geotextiles and Geomembranes.
- I. ASTM E 41 - Terminology Relating to Conditioning.

1.4 SUBMITTALS

- A. Submit manufacturer's shop drawings in accordance with Section 01 33 00 including Manufacturer's product data, samples and section layout.
- B. Manufacturer's Certificate of Analysis: Manufacturer shall supply certificate of analysis containing the following test results for the cellular confinement material used for project: Base Resin Lot Number(s), Resin Density per ASTM-1505, Production Lot Number(s), Material Thickness, Short Term Seam Peel Strength, and percentage of Carbon Black.

1.5 QUALITY ASSURANCE AND CONTROL

- A. The cellular confinement system material shall be provided from a single Manufacturer for the entire project.
- B. The Manufacturer's Quality Management System shall be certified and in accordance with International Standards Organization (ISO) 9001:2008 certification. Any substitute materials submitted shall provide a certification that their cellular confinement manufacturing process is part of an ISO program and a certification will be required specifically stating that their testing facility is certified and in accordance with ISO. An ISO certification for the substitute material will not be acceptable unless it is proven it pertains specifically to the geocell manufacturing operations.
- C. The Manufacturer shall provide certification of compliance to all applicable testing procedures and related specifications upon the customer's written

request. Request for certification shall be submitted no later than the date of order placement.

- D. Pre-Installation Meeting: Prior to installation of any materials, conduct a pre-installation meeting to discuss the scope of work and review installation requirements. The pre-installation meeting shall be attended by all parties involved in the installation of the cellular confinement system.
- E. Manufacturer's Field Representative Qualifications:
 - 1. Manufacturer shall provide a qualified field representative on site at the start of construction to ensure the system is installed in accordance with the Contract Documents.
 - 2. Manufacturer of any substitute materials to be used shall certify that a representative can meet the above criteria and will be on site for initial construction start up. Manufacturers will be required to provide proof the representative meets these qualifications.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to site in Manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and Manufacturer.
- B. The materials shall be stored in accordance with Manufacturer's instructions. The materials shall be protected from damage and away from direct sunlight.
- C. The materials shall be delivered, unloaded and installed in a manner to prevent and minimize damage.

1.7 WARRANTY

- A. The Manufacturer shall warrant each section that it ships to be free from defects in materials and workmanship at the time of manufacture. The Manufacturer's exclusive liability under this warranty or otherwise will be to furnish without charge to the original f.o.b. point a replacement for any section which proves to be defective under normal use and service during the 10-year period which begins on the date of shipment. The Manufacturer reserves the right to inspect any allegedly defective section in order to verify the defect and ascertain its cause.
- B. This warranty shall not cover defects attributable to causes or occurrences beyond the Manufacturer's control and unrelated to the manufacturing

process, including, but not limited to, abuse, misuse, mishandling, neglect, improper storage, improper installation, improper alteration or improper application.

- C. In no event shall the Manufacturer be liable for any special, indirect, incidental or consequential damages for the breach of any express or implied warranty or for any other reason, including negligence, in connection with the cellular confinement system.

PART 2 - MATERIALS

2.1 ACCEPTABLE MANUFACTURER

1. The cellular confinement system material shall meet the standards of the manufacturer listed below: Presto Geosystems, PO Box 2399, Appleton, Wisconsin 54912 2399
2. Toll Free: (800) 548 3424. Phone: (920) 738 1328. Fax: (920) 738 1222.
3. E Mail: info@prestogeo.com. Website: www.prestogeo.com.

2.2 CELLULAR CONFINEMENT SYSTEM

A. Manufacturing Certification

1. The Manufacturer shall have earned a certificate of registration, which demonstrates that its quality-management system for its Geoweb cellular confinement system is currently registered to the ISO 9001:2008 and CE quality standards.

B. Base Materials

1. Polyethylene Stabilized with Carbon Black
 - a. Density shall be 58.4 to 60.2 pound/ft³ (0.935 to 0.965 g/cm³) in accordance with ASTM D 1505.
 - b. Environmental Stress Crack Resistance (ESCR) shall be 5000 hours in accordance with ASTM D 1693.
 - c. Ultra-Violet light stabilization with carbon black.
 - d. Carbon Black content shall be 1.5 to 2 percent by weight, through addition of a carrier with certified carbon black content.
 - e. Carbon black shall be homogeneously distributed throughout material.
 - f. The manufacturer must have an in-place quality control to prevent

irregularities in strip material.

C. Cell Properties

1. Individual cells shall be uniform in shape and size when expanded.
2. Individual cell dimensions (nominal) shall be dimensions +/- 10%.
3. Cell dimensions:
 - a. Length shall be 8.8 inches (224 mm).
 - b. Width shall be 10.2 inches (259 mm).
 - c. Nominal area shall be 44.8 in² (289 cm²) plus or minus 1%.
 - d. Nominal depth shall be 6 inches (150 mm).

D. Strip Properties and Assembly

1. Perforated Textured Strip/Cell
 - a. Strip sheet thickness shall be 50 mil (1.27 mm), minus 5 percent, plus 10 percent in accordance with ASTM D 5199. Determine thickness flat, before surface disruption.
 - b. Polyethylene strips shall be textured surface with a multitude of rhomboidal (diamond shape) indentations.
 - c. Textured sheet thickness shall be 60 mil plus or minus 6 mil (1.52 mm plus or minus 0.15 mm).
 - d. Indentation surface density shall be 140 to 200 per in² (22 to 31 per cm²).
 - e. Perforated with horizontal rows of 0.4 inch (10 mm) diameter holes.
 - f. Perforations within each row shall be 0.75 inches (19 mm) on-center.
 - g. Horizontal rows shall be staggered and separated 0.50 inches (12 mm) relative to hole centers.
 - h. Edge of strip to nearest edge of perforation shall be a minimum of 0.3 inches (8 mm).
 - i. Centerline of spot weld to nearest edge of perforation shall be a minimum of 0.7 inches (18 mm).
 - j. A slot with a dimension of 3/8 inch x 1-3/8 inch (10 mm x 35 mm) is standard in the center of the non-perforated areas and at the center of each weld.

2. Assembly of Cell Sections

- a. Fabricate using strips of sheet polyethylene each with a length of 142 inches (3.61 m) and a width equal to cell depth.
- b. Connect strips using full depth ultrasonic spot-welds aligned perpendicular to the longitudinal axis of strip.
- c. Ultrasonic weld melt-pool width shall be 1.0 inch (25 mm) maximum.
- d. Weld spacing for GW20V-cell sections shall be 14.0 inches plus or minus 0.10 inch (356 mm plus or minus 2.5 mm).

B. Cell Seam Strength Tests

1. Minimum seam strengths are required by design and shall be reported in test results. Materials submitted with average or typical values will not be accepted. Written certification of minimum strengths must be supplied to the engineer at the time of submittals.
2. Short-Term Seam Peel-Strength Test
 - a. Cell seam strength shall be uniform over full depth of cell.
 - b. Minimum seam peel strength shall be 480 lbf (2,130 N) for 6 inch (150 mm) depth.
3. Long-Term Seam Peel-Strength Test
 - a. Conditions: Minimum of 7 days in a temperature-controlled environment that undergoes change on a 1 hour cycle from room temperature to 130 °F (54 °C).
 - b. Room temperature shall be in accordance with ASTM E41.
 - c. Test samples shall consist of two, four-inch (100 mm) wide strips welded together.
 - d. Test sample consisting of two carbon black stabilized strips shall support a 160 pound (72.5 kg) load for test period.
4. 10,000-hour Seam Peel Strength Certification
 - a. Manufacturer shall provide data showing that the high-density polyethylene resin used to produce the cellular confinement sections has been tested using an appropriate number of seam samples and varying loads to generate data indicating that the seam peel strength shall survive a loading of at least 209 lbf (95 kg)

for a minimum of 10,000 hours.

2.3 INTEGRAL COMPONENTS

A. ATRA® Tendon Clip

1. The ATRA Tendon Clip is a molded, high-strength polyethylene device with a locking member and post with minimum pull-through of 420 lbs (191 kg).
2. The ATRA Tendon Clip is the recommended anchorage connection method for securing sections with tendons and transferring the driving gravity forces to the cell wall.

B. ATRA® Stake Clip

1. The ATRA Stake Clip is a molded, high-strength polyethylene device available in standard (0.5 inch) and metric (10–12 mm) versions.
2. ATRA Stake Clips can be installed as an end cap on standard (0.5 inch) and metric (10–12 mm) steel reinforcing rods to form ATRA Anchors.
3. ATRA® Key
4. ATRA keys shall be constructed of polyethylene and provide a high strength connection with minimum pull-through of 275 lbs (125 kg).
5. ATRA keys shall be used to connect sections together at each interleaf and end to end connection.

2.4 STAKE ANCHORAGE (IF REQUIRED)

A. ATRA® Anchors

1. ATRA Anchors shall consist of standard (0.5 inch) or metric (10–12 mm) steel reinforcing rod with an ATRA® Stake Clip attached as an end cap.
2. ATRA anchors shall be assembled by inserting the ATRA Stake Clip onto the reinforcing rod so that the end is flush with the top of the ATRA Stake Clip. Prior to attaching the ATRA Stake Clip, the reinforcing rod shall be beveled and free from all burrs.
3. The anchor length and placement shall be as shown in the Contract Documents.

B. ATRA® Glass Fiber Reinforced Polymer (GFRP) Anchors

1. ATRA GFRP Anchors shall be pre-assembled units consisting of the ATRA Stake Clip inserted onto a GFRP stake.
2. The glass reinforcement content shall be 75% minimum by weight and shall be continuous longitudinal filament.
3. Polymer shall be vinyl ester, isophthalic polyester or other matrix material.
4. The outer surface shall be sand coated and deformed by a helical wrap of glass.
5. The minimum compressive strength shall be 95 kips (655 MPa) in accordance with ASTM D 638.
6. The anchor shall be non-magnetic, non-conducting and corrosion resistant.
7. The anchor length and placement shall be as shown in the Contract Documents.

2.5 TENDON ANCHORAGE (IF REQUIRED)

A. Tendon Type

1. Woven Polypropylene - [TPP 55]
 - a. Material shall be bright yellow, high-tenacity, industrial-continuous-filament, polypropylene yarn woven into a braided strap.
 - b. Minimum break strength shall be 1250 lbf (5.56 kN)
2. Woven Polyester - [TP 67] [TP 93]
 - a. Material shall be bright, high-tenacity, industrial-continuous-filament, polyester yarn woven into a braided strap.
 - b. Elongation shall be 9 to 15 percent at break.
 - c. Minimum break strength shall be [1506 lbf (6.70 kN) for TP-67] [2090 lbf (9.30 kN) for TP-93].
3. Woven Kevlar - [TK-89] [TK-133], [TK-178]
 - a. Material shall be Kevlar® Aramid material woven into a strap.
 - b. Minimum break strength shall be [2000 lbf (8.90 kN) for TK-89] [3000 lbf (13.34 kN) for TK-133] [4000 lbf (17.8 kN) for TK-178].

B. Types of Tendon Anchorage

1. Tendons, ATRA Tendon Clips and Geoweb Buried at Crest.
2. Tendons, ATRA Tendon Clips and ATRA Anchors.
3. Tendons, ATRA Tendon Clips and ATRA GFRP Anchors.
4. Tendons, ATRA Tendon Clips and Deadman Pipe Anchorage.
5. Tendons, ATRA Tendon Clips and Earth Anchors.

2.6 CELL INFILL MATERIALS

- A. Cell infill material shall be #357 coarse aggregate per ASTM C33 and Section 31 05 16.
- B. Infill material shall be free of any foreign material.
- C. Clays and silts are not acceptable infill material.
- D. Infill material shall be free-flowing and not frozen when placed in the sections.

2.7 ADDITIONAL COMPONENTS

- A. Trade Name or Equal
 1. All trade projects can be replace with approved equal per Section 4-1.6 Trade Names or Equal of the SSPWC.
- B. Geotextile
 1. The geotextile separation layer shall be as specified in the Construction Drawings and Section 31 05 19.13 of these Specifications.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify site conditions are as indicated on the drawings. Notify the Engineer if site conditions are not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.
- B. Verify layout of structure is as indicated on the drawings. Notify the Engineer if layout of structure is not acceptable. Do not begin preparation or installation until unacceptable conditions have been corrected.

3.2 INSTALLATION OF CELLULAR CONFINEMENT SYSTEM

- A. Prepare sub grade and install protection system in accordance with Manufacturer's recommendations.
- B. On-site time for installation assistance by the Manufacturer's field representative shall be 2 day(s) with one trip. All travel and expense costs for Manufacturer's field representative installation assistance shall be included in the base bid price.
- C. Sub Grade Preparation:
 - 1. Excavate or fill foundation soils so top of installed section is flush with or slightly lower than adjacent terrain or final grade as indicated on the drawings or as directed by the Engineer.
 - 2. Install geotextile separation layer on prepared surfaces ensuring required overlaps are maintained and outer edges of geotextile are buried in accordance with the Manufacturer's recommendations.
- D. Section Placement and Connection
 - 1. Verify all sections are expanded uniformly to required dimensions and that outer cells of each section are correctly aligned. Interleaf or overlap edges of adjacent sections. Ensure upper surfaces of adjoining sections are flush at joint and adjoining cells are fully aligned at the cell wall slot.
 - 2. Connect the sections with ATRA keys at each interleaf and end to end connection. Insert the ATRA key through the cell wall I-slot before inserting through the adjacent cell. Turn the ATRA key 90 degrees to lock the sections together.
- E. Aggregate Infill Placement
 - 1. Place specified infill in expanded cells with suitable material handling equipment, such as a backhoe, front-end loader, conveyor, or crane-mounted skip.
 - 2. Limit drop height to a maximum of 3 feet (1 m) to prevent panel distortion.
 - 3. Fill sections from the edge of pavement to outside edge of shoulder or in accordance with Engineer's direction.
 - 4. Infill material shall be free-flowing when placed into the sections.

5. Evenly spread infill and ensure the infill extends two (2) inches above the cell walls for installation of cellular confinement stabilization BMPs.
6. Evenly spread infill and ensure the infill is flush with the cell walls or higher for installation of the cellular confinement shoulders.

PART 4 - MEASUREMENT AND PAYMENT

- A. The unit price for "Cellular Confinement System with Aggregate and Geotextile for Road Shoulders" shall include costs for all grading, subgrade preparation, and furnish/install of the cellular confinement system, cell infill materials (#357 coarse aggregate), and woven geotextile mat (Mirafi 500X or approved equal).
- B. The unit price for "Cellular Confinement System with Aggregate and Geotextile for Stabilization" shall include costs for all grading, subgrade preparation, and furnish/install of the cellular confinement system, cell infill materials (#357 coarse aggregate), and woven geotextile mat (Mirafi HP 570 or approved equal).

SECTION 31 14 13.16

SOIL STOCKPILING

PART 1 - GENERAL

- A. All soil stockpiles shall conform to the following requirements, where applicable, unless otherwise noted in these Specifications:
1. The Contractor shall be solely responsible for the proper management of soil stockpiles as outlined below.
 2. Soil stockpiles shall be placed outside of concentrated flow paths.
 3. The perimeter of stockpiles shall be protected at the end of each day using temporary perimeter sediment barriers.
 4. Water shall be applied to soil stockpiles for dust control in conformance with Section 01 57 26.
 5. Soil stockpiles shall be covered or protected with soil stabilization immediately following cessation of use if the soil stockpile is not scheduled to be used within 14 days, or after 14 days of unplanned inactivity, as applicable.
 6. Soil stockpiles shall be covered or protected with soil stabilization in the event of a predicted rain event.
 7. Proper management of soil stockpiles is required for the duration of the project.
 8. Any additional soil stockpile management Best Management Practices (BMPs) prescribed in the current Industrial General Permit (IGP) Storm Water Pollution Prevention Plan (SWPPP) for the Miramar Landfill facility are required to be implemented during the project.

PART 2 - MATERIALS (NOT USED)

PART 3 - EXECUTION (NOT USED)

PART 4 - MEASUREMENT AND PAYMENT

- A. All costs for equipment and labor associated with soil stockpiling for this project shall be included in the various Bid items. No separate payment for this item shall be made.

END OF SECTION

SECTION 31 22 16.13
ROADWAY SUBGRADE RESHAPING

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall provide prepared subgrade for installation of asphalt concrete, and associated materials in accordance with the Contract Documents.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 Submittal Procedures
 - 2. Section 01 55 26 Traffic Control
 - 3. Section 31 05 13 Soils for Earthwork
 - 4. Section 31 05 16 Aggregates for Earthwork
 - 5. Section 31 05 19.13 Geotextile
 - 6. Section 31 05 19.19 Geogrid
 - 7. Section 31 14 13.16 Soil Stockpiling
 - 8. Section 32 10 00 Asphalt Concrete Paving

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the Regional and City of San Diego Supplement Amendments.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, materials testing reports, job-mix formulas, and other pertinent information satisfactory to the Engineer, demonstrating that materials and methods Contractor proposes to use will comply with the provisions of this Section. Submittals shall be in accordance with the requirements of Section 01 33 00.

PART 2 - PRODUCTS

2.1 USE OF EXISTING MATERIALS

- A. It is anticipated that roadway subgrade reshaping will not involve the import of additional materials. If additional materials are required to achieve design grades, the Contractor shall utilize milled asphalt that is located on site. The City will provide these materials at no cost to the Contractor. The Contractor shall be responsible for loading, hauling, placing, moisture conditioning, and compacting the material. If milled asphalt is not available, the Contractor shall import Class II Base as needed and approved by the Engineer.

PART 3 - EXECUTION

3.1 SUBGRADE PREPARATION

- A. The subgrade shall be prepared to create the lines and grades to be reflected in the ultimate project improvement final grade. The Contractor's proposed sequencing and methods for achieving the design intent for development of the subgrade shall be outlined in the submitted Earthwork Operations Plan.
- B. Subgrade preparation and placement of Aggregate base shall be in accordance with SSPWC Section 301, except where superseded by these specifications.
- C. Subgrade shall be graded with machinery sufficient to remove loose and unsuitable soils prior to placement of aggregate base. Subgrade acceptance will be by proof roll. The geotechnical design engineer will be contacted at least 48 hours prior to the scheduled proof roll and the geotechnical design engineer or his/her representative shall be onsite for the proof roll. The proof roll shall be conducted according to the direction of the geotechnical design engineer or his/her representative with a fully loaded three-axle dump truck. Areas identified during the proof roll as unacceptable shall be excavated to a depth sufficient to reach competent soils, moisture conditioned, and recompacted per SSPWC Section 301-1.

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICE COMPLETENESS

- A. The contract unit price for each of the following civil improvements shall include full compensation for all labor, material and equipment required to construct the improvements in accordance with the Contract Documents, Construction Drawings, Specifications, and manufacturer's

recommendations. Quantities installed beyond the limits indicated on the drawings will not be compensated unless previously authorized by the Engineer.

4.2 SUBGRADE PREPARATION

- A. If subgrade is required to be excavated and recompacted, payment for such unclassified excavation will be made according to SSPWC 300-2.9. The geotechnical engineer or his or her representative will be notified at least 48 hours before excavation is scheduled to commence and will be present for excavation activities. Areas and depths to be excavated will be determined by the geotechnical engineer at the time of excavation. Quantities excavated and recompacted beyond the limits determined by the geotechnical engineer will not be compensated unless previously authorized by the Engineer.
- B. All costs for Subgrade Preparation shall include full compensation for all labor, material, and equipment required for scarifying, grading, processing, and compaction of final subgrade. All costs for subgrade preparation shall be included in the specific elements of work and there shall be no separate payment made.

END OF SECTION

SECTION 31 25 14

EROSION AND SEDIMENTATION CONTROL

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall furnish all labor, materials, tools, supervision, transportation, equipment, and incidentals necessary for the installation of erosion and sediment controls. The work shall be carried out as specified herein and in accordance with the Construction Drawings.
- B. The work shall include, but not be limited to, delivery, storage, and placement of the various drainage components of the project.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 Submittal Procedures
 - 2. Section 01 56 00 Environmental Protection
 - 3. Section 015723 Temporary Storm Water Pollution Controls
 - 4. Section 015726 Site Watering for Dust Control
 - 5. Section 33 40 00 Drainage
 - 6. Section 31 14 13.16 Soil Stockpiling

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the Regional and City of San Diego Supplemental Amendments.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, materials testing reports, job-mix formulas, and other pertinent information satisfactory to the Engineer,

demonstrating that materials and methods the Contractor proposes to use will comply with the provisions of this Section. Submittals shall be in accordance with the requirements of Section 01 33 00 - Submittals.

- B. Suitability Tests of Proposed Materials: For materials not produced by a supplier currently authorized by the City Materials and Testing Lab, tests for conformance with the Specifications shall be performed before start of the Work. The samples shall be identified to show the name of the material, aggregate source, name of the supplier, contract number, and the segment of the Work where the material represented by the sample is to be used. Results of all tests shall be submitted to the Construction Manager for approval. Materials to be tested shall include aggregate base, coarse and fine aggregate for paving mixtures, mineral filler, and asphalt binder.
- C. The Contractor shall submit certification and test records of all proposed materials showing that they meet the applicable requirements.

1.5 QUALITY ASSURANCE

- A. Quality assurance testing will be provided by the City Materials and Testing Lab. This does not relieve the Contractor from securing the necessary construction control testing during construction when required by the contract documents.

PART 2 - PRODUCTS

2.1 TRACKING CONTROL GRATE

- A. The tracking control grate shall consist of cross members resting on steel beams with steel members lying on the steel beams and shall be 10 feet wide by 8 feet long sections.

2.2 TRACKING CONTROL AGGREGATE BASE

- A. Materials for tracking control aggregate base shall conform to the requirements of Section 31 05 16.

2.3 COMPOST-FILLED SLOPE INTERRUPTION DEVICE

- A. Slope interruption devices shall be a three-dimensional tube of multi-filament polypropylene fabric filled with 0.25-inch to 0.50-inch compost to achieve a nominal finished diameter of eight (8) inches.

2.4 STRAW WATTLES

- A. Straw wattles shall consist of burlap wrapped exterior and an interior made from 100% weed free rice straw to achieve a nominal finished diameter of nine (9) inches.

2.5 WOODEN STAKES

- A. Wooden stakes shall be 2-inch x 2-inch x 18-inches in length per Construction Drawings.

2.6 WATER TRUCK

- A. Materials for water truck shall conform to the requirements of Section 01 57 26.

2.7 SEEDING MIXTURES

- A. Seeding mixtures shall consist of Seed Mixture A or Seed Mixture B as depicted in the Construction Drawings. Seed mixtures should consist of the following species and application rates:

2.8 HYDROSEED

- A. Hydroseed shall be applied using the following materials and application rates per the Construction Drawings:

Seed Mixture

SPECIES	COMMON NAME	*PLS lbs./acre
Bromus Carinatus 'Cucamonga'	Cucamonga Brome	10
Bromus Carinatus	California Brome	10
Festuca Microstachys	Small Fescue	6
Trifolium Ciliolatum	Foothill Clover	3
	Total PLS lbs/acre	29

*NOTE: PLS % = % Purity X % Germination.

MATERIAL	APPLICATION RATE (lbs/acres)
Wood, cellulose, or straw fiber	500
Seed Mixture A	31.25

2.9 HYDRAULIC MULCH

- A. Hydraulic Mulch shall be applied using the following materials and application rates per the Construction Drawings:

Hydraulic Mulch Application Rates – Erosion Control Area 2

MATERIAL	APPLICATION RATE (lbs/acres)
Wood, cellulose, or straw fiber	3,000
Guar type tackifier	150

Hydraulic Mulch Application Rates – Erosion Control Area 3

MATERIAL	APPLICATION RATE (lbs/acres)
Wood, cellulose, or straw fiber	2,500
Guar type tackifier	125

Hydraulic Mulch Application Rates – Erosion Control Area 4

MATERIAL	APPLICATION RATE (lbs/acres)
Wood, cellulose, or straw fiber	2,500
Guar type tackifier	125

PART 3 - EXECUTION

3.1 TRACKING CONTROL DEVICE

- A. Tracking control structure shall be constructed as shown on the Construction Drawings.
- B. A concrete mud slab will form the base of the structure for stability and to provide a non-erosive service for maintenance and sediment removal.
- C. The structure must be capable of safely carrying wheel loads from fully-loaded trash trucks and water pulls common to the landfill site.
- D. A minimum clearance of 1 foot shall be provided between the racks and the top of the mud slab.

3.2 EROSION CONTROL AREA 1 (SHEETS G-2, C-1)

- A. Compost filled slope interruption devices shall be installed along contour at

intervals specified in the Construction Drawings. The slope interruption device shall be installed directly on the soil surface. Wooden stakes shall be placed on the contour at intervals specified in the Construction Drawings to form a supporting framework for the installation of the slope interruption device. The slope interruption device shall be installed on the upslope side of the row of wooden stakes and compressed into place to achieve ground contact. The ends of the slope interruption devices shall be overlapped a minimum of (2) feet.

- B. Following installation of the slope interruption devices, the temporarily removed compost mulch shall be repositioned to cover soil exposed during slope interruption device installation to achieve a depth of 6 inches.

3.3 EROSION CONTROL AREA 2 – ALTERNATE A (SHEETS G-2, C-1)

- A. Apply water prior to roughening to facilitate de-compaction of soil.
- B. Roughen soil surface no more than 2-inches to loosen up existing surface compaction.
- C. Soil berms shall be placed at two hundred (200) foot intervals along the contour.
- D. Construct soil berms using a grader blade. Soil berms shall be constructed with localized material and wheel-compacted to a constructed height of eight (8) to twelve (12) inches in height and two (2) feet in width.
- E. Apply two (2) inches of 0.25-inch to 0.50-inch sized West Miramar Landfill-produced compost on roughened soil surface and incorporate compost into the soil by tilling or disking to a maximum depth of four (4) inches.
- F. Imprint and seed area between soil berms using a mechanical imprinter. A mechanical imprinter is a device that roughens the soil by creating small geometric depression approximately four (4) inches in depth. The seed mixture specified per location on Construction Drawings shall be applied at the time of imprinting:
- G. Following soil berm installation, imprinting, and seeding, the area shall be capped with hydromulch. Hydromulch shall be hydraulically sprayed from multiple directions to eliminate “shadowing” and accomplish complete soil coverage. :

3.4 EROSION CONTROL AREA 3 (SHEETS G-2, C-1)

- A. Grade soil surface to eliminate existing erosional features (i.e. rills).
- B. Apply water prior to roughening to facilitate de-compaction of soil. Roughen soil surface no more than two (2) inches in depth to loosen up existing compaction.
- C. Following surface de-compaction, track-walk up and down slopes with bulldozer such that the tracks are perpendicular to slope.
- D. Install nine (9) inch diameter straw wattles per manufacturers' specifications along contour at forty (40) foot intervals. Wattles shall be composed of 100% weed-free agricultural straw encased in a biodegradable burlap.
- E. Following straw wattle installation, the area shall be hydroseeded.
- F. Following hydroseeding, the area shall be capped with hydromulch. Hydromulch shall be hydraulically sprayed from multiple directions to eliminate "shadowing" and to accomplish complete soil coverage.

3.5 EROSION CONTROL AREA 4 (SHEETS G-2, C-1)

- A. Apply water prior to roughening to facilitate de-compaction of soil.
- B. Roughen soil surface no more than 2-inches to loosen up existing surface compaction within limits (width) of swale and gabion check dam structure.
- C. Install gabion check structures followed by stabilized equipment crossings at spacing indicated on C-2.
- D. Following installation of gabion check structures and stabilized equipment crossings, the area shall be hydroseeded
- E. Following soil berm installation, imprinting, and seeding, the area shall be capped with hydromulch. Hydromulch shall be hydraulically sprayed from multiple directions to eliminate "shadowing" and accomplish complete soil coverage. :

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICE COMPLETENESS

- A. The contract unit price for each of the following civil improvements shall include full compensation for all labor, material and equipment required to construct the improvements in accordance with the Contract Documents, Construction Drawings, Specifications, and manufacturer's recommendations. Quantities installed beyond the limits indicated on the drawings will not be compensated unless previously authorized by the Engineer.

4.2 TRACKING CONTROL DEVICE (SHEET C-7, DETAIL 6)

- A. The unit price for "Tracking Control Device" shall include costs for grading, subgrade preparation, and furnish/install of all materials required to fully complete the installation per the detail. No separate payment will be made for geotextile, aggregate, etc.
- B. Payment for "Tracking Control Device" shall be determined by multiplying the accepted number of devices installed by the unit price in the contract.

4.3 EROSION CONTROL AREA 1 (SHEETS G-2, C-1)

- A. The unit price for "Erosion Control Area 1" shall include costs for site preparation and furnish/install of all materials required to fully complete the installation per the plan.
- B. Payment for "Erosion Control Area 1" shall be determined by multiplying the accepted number of linear feet of the improvement installed by the unit price in the contract.

4.4 EROSION CONTROL AREA 2 - ALTERNATE A (SHEETS G-2, C-1)

- A. The unit price for "Erosion Control Area 2" shall include costs for site preparation and furnish/install of all materials required to fully complete the installation per the plan. No separate payment will be made for import fill, etc.
- B. Payment for "Erosion Control Area 2" shall be determined by multiplying the accepted number of acres of the improvement completed by the unit price in the contract.

4.5 EROSION CONTROL AREA 3 (SHEETS G-2, C-1)

- A. The unit price for "Erosion Control Area 3" shall include costs for site

preparation and furnish/install of all materials required to fully complete the installation per the plan.

- B. Payment for "Erosion Control Area 3" shall be determined by multiplying the accepted number of acres of the improvement completed by the unit price in the contract.

4.6 EROSION CONTROL AREA 4 (SHEETS G-2, C-1)

- A. The unit price for "Erosion Control Area 4" shall include costs for site preparation and furnish/install of all materials required to fully complete the installation per the plan.
- B. Payment for "Erosion Control Area 4" shall be determined by multiplying the accepted number of acres of the improvement completed by the unit price in the contract.

END OF SECTION

SECTION 32 10 00
ASPHALT CONCRETE PAVING

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall provide asphalt concrete pavement, and associated materials in accordance with the Contract Documents.
- B. The Contractor shall install all pavement markings and in accordance with the Contract Documents.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 Submittal Procedures
 - 2. Section 01 55 26 Traffic Control
 - 3. Section 31 05 13 Soils for Earthwork
 - 4. Section 31 05 16 Aggregates for Earthwork
 - 5. Section 31 05 19.13 Geotextile
 - 6. Section 31 05 19.19 Geogrid
 - 7. Section 31 14 13.16 Soil Stockpiling
 - 8. Section 31 22 16.13 Roadway Subgrade Reshaping

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the Regional and City of San Diego Supplement Amendments.

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, materials testing reports, job-mix

formulas, and other pertinent information satisfactory to the Engineer, demonstrating that materials and methods Contractor proposes to use will comply with the provisions of this Section. Submittals shall be in accordance with the requirements of Section 01 33 00 - Submittals.

- B. Suitability Tests of Proposed Materials: For materials not produced by a supplier currently authorized by the City Materials and Testing Lab, tests for conformance with the Specifications shall be performed before start of the Work. The samples shall be identified to show the name of the material, aggregate source, name of the supplier, contract number, and the segment of the Work where the material represented by the sample is to be used. Results of all tests shall be submitted to the Construction Manager for approval. Materials to be tested shall include coarse and fine aggregate for paving mixtures, mineral filler, and asphalt binder.
- C. The Contractor shall submit certification and test records of all proposed materials showing that they meet the applicable requirements.

1.5 QUALITY ASSURANCE

- 1. Quality assurance testing will be provided by the City Materials and Testing Lab. This does not relieve the Contractor from securing the necessary construction control testing during construction when required by the contract documents.

PART 2 - PRODUCTS

2.1 PRIME COAT

- A. The prime coat shall be liquid asphalt complying with SSPWC Subsection 302-5.3

2.2 TACK COAT

- A. The tack coat material shall comply with SSPWC Subsection 302-5.4

2.3 ASPHALT CONCRETE

- A. Asphalt Concrete (AC) shall be furnished in accordance with the requirements of Section 203-6 and Section 203-7 of the SSPWC, or SSPWC Section 400-4 (as appropriate) and shall be ¾" B-DMC PG 70-10 mix or approved equal.
- B. Where indicated on the Construction Drawings, AC pavement shall be placed

against a header in conformance with Section 302-5.5 of the SSPWC.

C. AC mix designs shall be submitted for the Engineer review and approval.

2.4 PAVEMENT MARKING PAINT

A. Pavement marking paint shall comply with SSPWC Section 214.

PART 3 - EXECUTION

3.1 AGGREGATE BASE

A. Subgrade preparation and placement of Aggregate base shall be in accordance with SSPWC Section 301.

3.2 TACK COAT

A. Where required, a tack coat shall be applied in accordance with the requirements of SSPWC Subsection 302-5.4.

3.3 ASPHALT CONCRETE

A. Headers measuring 2-inch by 4- inch shall be firmly staked in the proper positions along all edges other than those where the pavement is to be placed against existing soil, concrete, or paved surfaces.

B. Asphalt concrete paving shall be constructed in accordance with SSPWC Subsection 302-5.

C. Asphalt concrete speed humps shall be constructed in accordance with the Construction Drawings.

D. Existing asphalt pavement that has been gouged, marred or scarred during construction shall be repaired by the Contractor in accordance with Section 302-3 in compliance with the City of San Diego Standard Specifications for Public Works Construction ("Whitebook") 2015 edition. The repair shall consist of asphalt patching and/or seal and sand. Repairs of asphalt pavement shall be as determined at the sole discretion of the Engineer.

3.4 TRAFFIC MARKING

A. Application of paint shall comply with SSPWC Section 314.

B. Longitudinal pavement markings shall be 4 to 6 inches wide in accordance with the Federal Highway Administration Manual on Uniform Traffic Control

Devices.

- C. Longitudinal pavement markings shall include roadway centerlines in accordance with CalTrans 2015 Standard Plans A20A detail 21 and right edgelines in accordance with CalTrans 2015 Standard Plan A20B detail 27B.
- D. Retroreflective markers shall be placed between the roadway centerlines at a center-to-center spacing of 80 feet. No retroreflective markers shall be placed on the right edgelines.
- E. Pavement markings for Speed Humps shall be white markings placed on the speed in accordance with Federal Highway Administration Manual on Uniform Traffic Control Devices, Figure 3B-29, Option B.
- F. Pavement Advanced Warning Markings for Speed Humps shall be white marking placed on the road pavement in accordance with Federal Highway Administration Manual on Uniform Traffic Control Devices, Figure 3B-21.

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICE COMPLETENESS

- A. The contract unit price for each of the following civil improvements shall include full compensation for all labor, material and equipment required to construct the improvements in accordance with the Contract Documents, Construction Drawings, Specifications, and manufacturer's recommendations. Quantities installed beyond the limits indicated on the drawings will not be compensated unless previously authorized by the Engineer.
- B. Section 301-2.4

4.2 ASPHALT CONCRETE PAVEMENT

- A. Payment for AC pavement will be by the ton in accordance with SSPWC Section 302-5.9 and include all materials, labor, and equipment for paving, including speed humps.

4.3 PAINTED PAVEMENT/CURB MARKINGS

- A. All lay-out, application of paint, retroreflective markers, and other appurtenances labor, and equipment, as required to complete the project striping as indicated by the Contract Documents shall be considered as

included in the Contractor's unit price per linear foot of road to be marked. Pavement markings shall include all centerlines, edgelines, and other pavement markings as indicated on the Construction Drawings.

- B. Final payment shall be based on field verification that the pavement markings have been installed as indicated in these specifications and the Construction Drawings.

END OF SECTION

SECTION 33 40 00

DRAINAGE

PART 1 - GENERAL

1.1 WORK OF THIS SECTION

- A. The Contractor shall furnish all labor, materials, tools, supervision, transportation, equipment, and incidentals necessary for the installation of drainage systems. The work shall be carried out as specified herein and in accordance with the Construction Drawings.
- B. The work shall include, but not be limited to, delivery, storage, and placement of the various drainage components of the project.

1.2 RELATED SECTIONS

- A. The Work of the following Sections applies to the Work of this Section. Other Sections, not referenced below, shall also apply to the extent required for proper performance of this Work.
 - 1. Section 01 33 00 Submittals
 - 2. Section 01 57 23 Temporary Storm Water Pollution Controls
 - 3. Section 01 56 00 Environmental Protection
 - 4. Section 31 05 16 Aggregates for Earthwork
 - 5. Section 31 05 19.13 Geotextile
 - 6. Section 31 05 19.19 Geogrid
 - 7. Section 31 05 19.29 Geoweb
 - 8. Section 31 25 14 Erosion and Sedimentation Control

1.3 REFERENCE SPECIFICATIONS, CODES AND STANDARDS

- A. Except as otherwise indicated in this Section, the Contractor shall comply with the latest adopted edition of the Standard Specifications for Public Works Construction (SSPWC) together with the latest adopted editions of the Regional and City of San Diego Supplemental Amendments.
- B. Drivable Grass

1. American Society for Testing and Materials (ASTM):
2. ASTM D-422 - Particle Size Analysis
3. ASTM D-698 - Laboratory Compaction Characteristics of Soil - Standard Proctor
4. ASTM D-1557 - Laboratory Compaction Characteristics of Soil – Modified Proctor
5. ASTM C-39/39M – Std. Test Method for Compressive Strength of Cylindrical Concrete Specimens
6. ASTM C-33 Std. Spec. for Concrete Aggregates
7. ASTM C31/ C31M Standard Practice for Making and Curing Concrete Test Specimens in the Field
8. ASTM C 150 Std. Spec for Portland Cement
9. ASTM C94 / C94M Std. Spec. for Ready – Mixed Concrete
10. ASTM C 1157 Std. Performance Specification for Hydraulic Cement
11. ASTM C595 Std. Spec. for Blended Hydraulic Cement
12. ASTM C618 Std. Spec. for Coal Fly Ash and Raw or Calcined Natural Pozzolan for use in Concrete*
13. ASTM C1611 / C1611M Std. Test Method for Slump Flow of Self-Consolidating Concrete
14. ASTM C989 Std. Spec. for Ground Granulated Blast-Furnace Slag for use in Concrete and Mortars *
15. ASTM C979 Std. Spec. for Pigment for Integrally Colored Concrete
16. ACI 201 American Concrete Institute- Report on Durability
17. ACI 211 American Concrete Institute- Std. Practice for Selecting Proportions for Normal, Heavy Weight, and Mass Concrete

* Denotes regional applicability

C. Gabion Basket

1. ASTM A975-97 Standard Specification for Double-Twisted Hexagonal Mesh Gabions and Revet Mattresses (Metallic-Coated Steel Wire or Metallic-Coated Steel Wire with Polyvinyl Chloride (PVC) Coating)
2. ASTM A641/A641M-03 Specification for Zinc Coated (Galvanized) Carbon Steel Wire
3. ASTM A370-97a Test Methods and Definitions for Mechanical Testing of Steel Products
4. ASTM A90/A90M-01 Test Method for Weight (Mass) of Coating on Iron and Steel Articles with Zinc or Zinc-Alloy Coating
5. ASTM A313/A313M-98 Specification for Chromium-Nickel Stainless and Heat-Resisting Steel Spring Wire
6. ASTM A764-95(2001) Specification for Steel Wire, Carbon, Drawn Galvanized and Galvanized at Size for Mechanical Springs

1.4 CONTRACTOR SUBMITTALS

- A. The Contractor shall submit, in writing, materials testing reports, job-mix formulas, and other pertinent information satisfactory to the Engineer, demonstrating that materials and methods Contractor proposes to use will comply with the provisions of this Section. Submittals shall be in accordance with the requirements of Section 01 33 00 – Submittal Procedures.
- B. Suitability Tests of Proposed Materials: For materials not produced by a supplier currently authorized by the City Materials and Testing Lab, tests for conformance with the Specifications shall be performed before start of the Work. The samples shall be identified to show the name of the material, aggregate source, name of the supplier, contract number, and the segment of the Work where the material represented by the sample is to be used. Results of all tests shall be submitted to the Construction Manager for approval. Materials to be tested shall include aggregate base, coarse and fine aggregate for paving mixtures, mineral filler, and asphalt binder.
- C. The Contractor shall submit certification and test records of all proposed materials showing that they meet the applicable requirements.

1.5 QUALITY ASSURANCE

- A. Quality assurance testing will be provided by the City Materials and Testing Lab. This does not relieve the Contractor from securing the necessary construction control testing during construction when required by the contract documents.
- B. Drivable Grass Installer Qualifications: An experienced installer who has successfully completed installations of pavers or other pavement systems on projects of similar or larger scope and magnitude.

PART 2 - PRODUCTS

2.1 WOVEN GEOTEXTILE MAT (HIGH TENSILE STRENGTH)

- A. Woven geotextile mat (high tensile strength) shall conform to the requirements of Section 31 05 19 of this document.

2.2 RIP-RAP

- A. Materials for rip-rap shall conform to the requirements of Section 31 05 16 of this document.

2.3 DRIVABLE GRASS®

- A. Permeable, Flexible, Plantable Pavement System: Drivable Grass®

1. Nominal Dimensions in inches (l x w x h)	24 x 24 x 1.5
2. Gross Area of Each Mat in square feet	4
3. Weight of Each Mat in pounds	45
4. Mats per pallet (each)	60
5. Area Covered per Pallet in square feet	240

- B. Color** Buff/Tan, Grey

1. Flexibility (minimum radius of curvature in inches)	12
2. Concrete Compressive Strength @ 28 days in pounds per square inch (psi)	5000
3. Propriety Grid Reinforcement	Engineered Plastic

- C. **Other colors available for special order

D. Woven Geotextile Mat – Materials for woven geotextile mat shall conform to the requirements of Section 31 05 19 of this document.

2.4 GABION BASKET

A. Woven Wire Mesh

1. Dimensions in feet (l x w x h) = 9 x 3 x 1.5
2. Minimum nine (9) Gauge Wire (Zinc Coated)
3. All tests on the wire must be performed prior to manufacturing the mesh.
 - *Tensile strength:* both the wire used for the manufacture of gabions and the lacing wire, shall have a maximum tensile strength of 75,000 psi (515 MPa), in accordance with ASTM A641/A641M-03.
 - *Elongation:* the test must be carried out on a sample at least 12 in. (30 cm) long. Elongation shall not be less than 12%, in accordance with ASTM A370-97a.
 - *Zinc coating:* minimum quantities of zinc according to ASTM A641/A641M-03, Class III soft temper coating.
 - *Adhesion of zinc coating:* the adhesion of the zinc coating to the wire shall be such that, when the wire is wrapped six turns around a mandrel having four times the diameter of the wire, it does not flake or crack when rubbing it with the bare fingers, in accordance with ASTM 641/a641m-03.
4. Galvanized (zinc coated) woven wire mesh gabions (8 x 10 mesh type):
 - *Wire mesh:* Diameter- 0.120 in. (3.05 mm)
 - *Selvedge wire:* Diameter – 0.153 in. (3.90 mm)
 - *Mesh opening:* Nominal Dimension D = 3.25 in. (83 mm), as per Fig. 1
5. Galvanized (zinc coated) lacing wire and internal stiffeners:
 - *Lacing wire:* Diameter – 0.087 in. (2.20 mm)
 - *Cross tie/stiffener wire:* Diameter – 0.087 in. (2.20 mm)
 - *Performed Stiffener:* Diameter – 0.153 in. (3.9 mm) internal.

6. Steel Mesh Properties

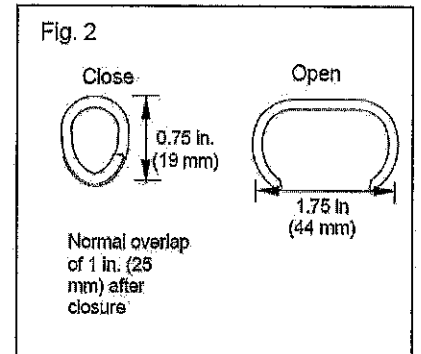
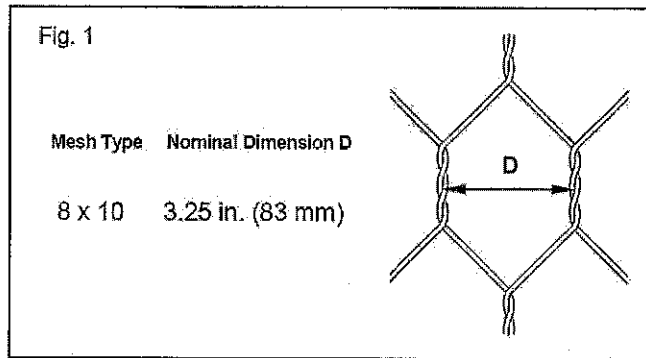
- *Mesh Tensile Strength* shall have a minimum strength of 3500 lb/ft (51.1 kN/m) when tested in accordance with ASTM A975 section 13.1.1
- *Punch Test Resistance* shall have a minimum resistance of 6000 lb (26.7 kN) when tested in accordance with ASTM A975 section 13.1.4.
- *Connection to selvages* shall have a minimum resistance of 1400 lb/ft (20.4 kN/m) when tested in accordance with ASTM A975.
- *Spenax Fasteners (Overlapping Fasteners):*

7. Overlapping fasteners may be used in lieu of, or to complement, lacing wire for basket assembly and installation. The spacing of the fasteners during all phases of assembly and installation shall be in accordance with spacing based on 1,400 lb/ft (20.4 kN/m) pull apart resistance for galvanized mesh when tested in accordance with ASTM A 975 section 13.1.2, with a nominal spacing of 4 in. (100 mm), and not to exceed 6 in. (150 mm).

- *Galvanized Fasteners:* Diameter = 0.120 in. (3.05 mm), according to ASTM A313/A313M-98, Type 302, Class I.
- *Tensile strength:* 230,000 to 273,000 psi (1586-1882 MPa) in accordance with ASTM A764-95(2001)
- *Proper installation of rings:* A properly formed Spenax fastener shall have a nominal overlap of one in. after closure (Fig. 2)

B. Tolerances

1. Wire: Zinc coating, in accordance with ASTM A64/A641M-03, Class III soft temper coating.
2. Gabion sizes: +/- 5% on the length, width, and height.
3. Mesh opening: Tolerances on the hexagonal, double twisted wire mesh opening shall not exceed +/- 10% on the nominal dimension D values (see Fig. 1):



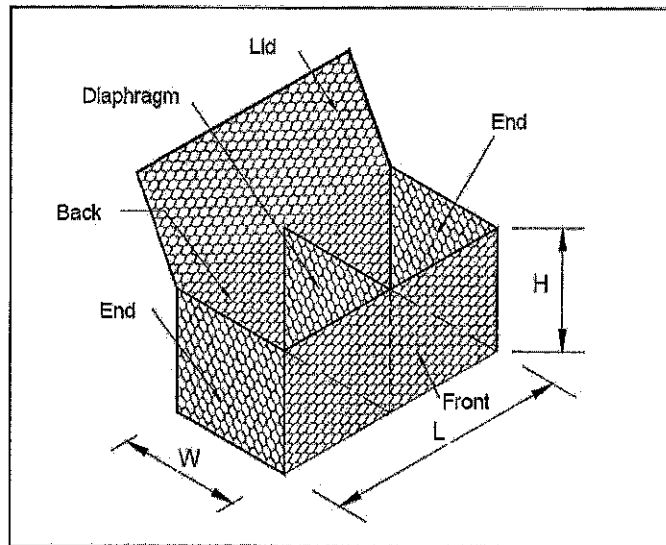
C. Standard Unit Size

Table of sizes for gabions			
L=Length ft (m)	W=Width ft (m)	H=Height ft (m)	# of cells
6 (1.8)	3 (0.9)	3 (0.9)	2
9 (2.7)	3 (0.9)	3 (0.9)	3
12 (3.6)	3 (0.9)	3 (0.9)	4
6 (1.8)	3 (0.9)	1.5 (0.45)	2
9 (2.7)	3 (0.9)	1.5 (0.45)	3
12 (3.6)	3 (0.9)	1.5 (0.45)	4
6 (1.8)	3 (0.9)	1 (0.3)	2
9 (2.7)	3 (0.9)	1 (0.3)	3
12 (3.6)	3 (0.9)	1 (0.3)	4
4.5 (1.4)	3 (0.9)	3 (0.9)	1

All sizes and dimensions are nominal. Tolerances of $\pm 5\%$ of the width, and length height, of the gabions shall be permitted.

D. Fabrication

1. Gabions shall be manufactured and shipped with all components mechanically connected at the production facility. The front, base, back and lid of the gabions shall be woven into a single unit. The ends and diaphragm(s) shall be factory connected to the base. All perimeter edges of the mesh forming the basket and top, or lid, shall be selvaged with wire having a larger diameter. The gabion is divided into cells by means of diaphragms positioned at approximately 3 ft (1 m) centers. The diaphragms shall be secured in position to the base so that no additional lacing is necessary at the jobsite.



E. Rock

1. The aggregate for gabions shall comply with CalTrans Rip Rap No. 2 in accordance with Section 31 05 16. The aggregate shall be hard, angular to round, durable and of such quality that they shall not disintegrate on exposure to water or weathering during the life of the structure.

2.5 TEMPORARY RAIL (TYPE K)

- A. Temporary Rail (Type K) shall consist of 10-foot Type II Portland Cement ASTM C 150 and Federal Specifications on Cement, SS-C-1960/3, Type I/II Low Alkali, minimum compressive strength 4000 psi at 28 days.
- B. Reinforcing Bar: ASTM A 615, Grade 40
- C. Secondary Reinforcing: Polypropylene fibers shall be added to the concrete, and improve durability.

2.6 MONOFILAMENT GRAVEL BAGS

- A. Bags shall be 14" x 26" monofilament bags filled with gravel.

2.7 FREE STANDING DEBRIS FENCE

- A. Free standing debris fence shall consist of 6-ft high x 10-ft long, 1 5/8-in 16 gauge frame, chain link fence with 2-in to 2.5-in openings, and one vertical and one horizontal bracing tube (or equivalent product).

- B. Fence ground stand shall consist of a 24-in by 24-in 1 5/8-in tubing, with schedule 40 cross brace (or equivalent product).
- C. Panel clamps for 1 5/8-in pipe.
- D. Carriage bolts 3/8-in by 2.5-in.
- E. Non-toxic corrosion inhibitor protection sealant.
- F. 19-gauge chicken wire with 1-in openings.
- G. Plastic quick ties.

2.8 FLARED END SECTION

- A. Flared End Sections shall conform to the following table requirement of 36-inch pipe diameter. Flared end sections shall be made of pre-galvanized steel.

Table 1
End Sections for Round Pipe (2-2/3" x 1/2", 3" x 1" and 5" x 1")

Pipe Diameter Inches	Edge	Approximate Dimensions, Inches (1)					W (Max. Width) (Inches)	Approx. Slope
		A (Min.) (Inches)	B (Max.) (Inches)	H (Min.) (Inches)	F (Min.) (Inches)	L (2/3") (Inches)		
12	10	5	7.5	6	22	21	44	2:1/4
15	10	6	9	6	26	26	52	2:1/2
18	10	7	10	6	34	31	58	2:1/8
21	12	8	12	6	40	36	66	2:1/8
24	10	9	13	6	46	41	72	2:1/8
30	12	11	16	8	55	51	88	2:1/8
36	12	13	20	9	70	60	105	2:1/8
42	12	15	25	10	82	69	122	2:1/8
48	13	17	29	12	88	78	131	2:1/8
54	12	17	33	12	100	84	143	2:1/8
60	12/10	17	38	12	112	87	157	1:1/8
66	12/10	17	39	12	118	87	162	1:5/8
72	12/10	17	41	12	126	87	169	1:1/2
78	12/10	17	48	12	150	87	178	1:5/8
84	12/10	17	52	12	156	87	184	1:1/3

Note: Larger sizes available in some locations.

PART 3 - EXECUTION

3.1 WOVEN GEOTEXTILE MAT

- A. Installation of woven geotextile mat (high tensile strength) shall conform to the requirements of Section 31 05 19 of this document and as shown on the Construction Drawings.

3.2 RIP-RAP

- A. Installation of rip-rap shall conform to the requirements of Section 31 05 16

of this document.

3.3 DRIVABLE GRASS®

A. Subgrade Preparation

1. Vertical depth to accommodate Drivable Grass® mat thickness.
2. Excavate to the dimensions shown on Construction Drawings and smooth surface prior to installation of woven geotextile fabric.

B. Woven Geotextile Mat

1. Installation of woven geotextile mat (high tensile strength) shall conform to the requirements of Section 31 05 19 of this document.

C. Installation of Concrete Mats

1. Install concrete mats upgradient from outlet downgradient to inlet on top of geotextile mat. Anchor concrete mats in place with four (4) 8-inch galvanized ring shank in per mat.
2. The surface elevation of the concrete mats shall be 1/8 to 1/4 inch above adjacent drainage inlets, concrete collars or inlets.
3. Lippage: No greater than 1/8 inch difference in height between concrete mats.

3.4 GABION BASKET

A. Assembly

1. Gabions are supplied folded flat and packed in bundles. The units are assembled individually by erecting the sides, ends, and diaphragms, ensuring that all panels are in the correct position, and the tops of all sides are aligned. The four corners shall be connected first, followed by the internal diaphragms to the outside walls. All connections should use lacing wire or fasteners as previously described in Section 2.4.A.3 and 2.4.A.5
2. The procedure for using lacing wire consists of cutting a sufficient length of wire, and first looping and/or twisting to secure the lacing wire to the wire mesh. Proceed to lace with alternating double and single loops through every mesh opening approximately every 6 inch pulling each

loop tight and finally securing the end of the lacing wire to the wire mesh by looping and/or twisting.

3. The use of fasteners shall be in accordance with the manufacturer's recommendations as specified in Section 2.4.A.5.

B. Excavation

1. Excavation for the embedment of the gabion baskets shall be performed per the Construction Drawings and these Specifications, especially Section 31 05 13.
2. Excavation of the drainage swale in which the gabion baskets are placed shall be performed per the Construction Drawings and these Specifications, especially Section 31 05 13. The typical drainage swale cross section shall be trapezoidal, 18 feet wide at the bottom, 0.5 feet deep, with side slopes at 10:1, or per direction of the Engineer.

C. Installation

1. After assembly, the gabion baskets are set in their final position and are securely joined together along the vertical and top edges of their contact surfaces using the same connecting procedure(s) described in Section 3.4.A. Whenever a structure required more than one layer, the upper empty baskets shall also be connected to the top of the lower layer along the front and back edges of the contact surface using the same connecting procedure(s) described in Section 3.4.A.

D. Filling

1. Baskets shall be filled with rock as specified in Section 31 05 16 of this document. During the filling operation, some manual stone placement is required to minimize voids. It is also recommended to slightly overfill the baskets by 1 to 2 inches to allow for settlement of the rock. The cells shall be filled in stages so that local deformation may be avoided. That is, at no time shall any cell be filled to depth exceeding 1-foot higher than the adjoining cell.

E. Internal Connecting Wires

1. Internal Connecting Wires with lacing wire shall connect the exposed face of a cell to the adjacent side of the cell. Preformed stiffeners are

installed at 45° to the face/side of the unit, extending an equal distance along each side being braced (approximately 1 ft. An exposed face is any side of a gabion cell that will be exposed or unsupported after the structure is completed.

F. Lid Closing

1. Once the gabion baskets are completely full, the lids are pulled tight until the lid meets the perimeter edges of the basket. A tool such as a lid closer can be used. The lid must then be tightly laced and/or fastened along all edges, ends and tops of diaphragm(s) in the same manner as described in Section 3.4.A.

G. Mesh Cutting and Folding

1. Where shown on the drawings or otherwise directed by the engineer, the basket mesh shall be cut, folded and fastened together to suit existing site conditions. The mesh must be cleanly cut and surplus mesh either folded back or overlapped so that it can be securely fastened together with lacing wire or fasteners in the manner described in Section 3.4.A. Any reshaped gabions shall be assembled, installed, filled and closed as specified in the previous sections.

3.5 TEMPORARY RAIL (TYPE K)

- A. Temporary railing (Type K) 10-foot sections shall be installed at gabion check structures located upstream and downstream of cellular confinement stabilization.

3.6 MONOFILAMENT GRAVEL BAGS

- A. Monofilament gravel bags shall be installed 3 bags high by 6 bags long in a pyramid shape on the interior side of all spaces within and between temporary railing (Type K).

3.7 FREE STANDING DEBRIS FENCE

A. Installation

1. Install temporary fence panels in ground stands. Arrange fence panels adjacent and up-gradient of inlet protection aggregate. Secure fence panels with panel clamps and carriage bolts (minimum one per side).

2. Attach chicken wire to lower three feet of up-gradient size of fence panel using plastic quick tie.
3. Seal temporary fence panels, ground stands and panel clamps with non-toxic corrosion inhibitor protection.
4. Stabilize ground stands with 14 inch x 26 inch monofilament bags filled with gravel. Minimum of two bags per each stand leg (eight bags total per stand).

3.8 FLARED END SECTION

- A. Flared end sections shall be joined to end of pipe sections, forming a continuous, one piece structure. Flared end sections will be attached with a ½" threaded rod.

PART 4 - MEASUREMENT AND PAYMENT

4.1 CONTRACT UNIT PRICE COMPLETENESS

- A. The contract unit price for each of the following civil improvements shall include full compensation for all labor, material and equipment required to construct the improvements in accordance with the Contract Documents, Construction Drawings, Specifications, and manufacturer's recommendations. Quantities installed beyond the limits indicated on the drawings will not be compensated unless previously authorized by the Engineer.

4.2 ARTICULATED CONCRETE BLOCK CHANNEL ON ROAD GRADES >5% (SHEET C-7, DETAIL 8)

- A. The unit price for "Articulated Concrete Block Channel on Road Grades >5%" shall include costs for grading, subgrade preparation, and furnish/install of articulated concrete block mat. The unit price shall not include cost to furnish/install woven geotextile mat, which will be paid under a separate bid item.
- B. Payment for "Articulated Concrete Block Chanel on Grades >5%" shall be determined by multiplying the accepted number of square feet of the completed improvement by the unit price in the contract.

4.3 CHANNEL WITH COARSE AGGREGATE ON ROAD GRADES < 5% (SHEET C-7,

DETAILS 7 AND 9)

- A. The unit price for "Channel with Coarse Aggregate on Road Grades <5%" shall include costs for grading, subgrade preparation, and furnish/install of coarse aggregate. The unit price shall not include cost to furnish/install woven geotextile mat, which will be paid under a separate bid item.
- B. Payment for "Channel with Coarse Aggregate on Road Grades <5%" shall be determined by multiplying the accepted number of square feet of the completed improvement by the unit price in the contract.

4.4 LOW FLOW CROSSING (SHEET C-6, DETAIL 4)

- A. The unit price for "Low Flow Crossing" shall include costs for grading, subgrade preparation, and furnish/install of all materials required to fully construct the crossing per the plan detail. No separate payment will be made for geotextile, articulated concrete block, aggregate, etc.
- B. Payment for "Low Flow Crossing" shall be determined by multiplying the accepted number of crossings completed by the unit price in the contract.

4.5 INLET PROTECTION (SHEET C-6, DETAIL 2)

- A. The unit price for "Inlet Protection" shall include costs for grading, subgrade preparation, and furnish/install of all materials required to fully construct the BMP per the plan detail. No separate payment will be made for geotextile, aggregate, etc.
- B. Payment for "Inlet Protection" shall be determined by multiplying the accepted number of installations completed by the unit price in the contract.

4.6 LOWER GREENERY INLET PROTECTION (SHEET C-6, DETAIL 5)

- A. The unit price for "Lower Greenery Inlet Protection" shall include costs for grading, subgrade preparation, and furnish/install of all materials required to fully construct the BMP per the plan detail. No separate payment will be made for geotextile, aggregate, etc.
- B. Payment for "Lower Greenery Inlet Protection" shall be determined by multiplying the accepted number of installations completed by the unit price in the contract.

4.7 GREENERY GABION CHECK STRUCTURES (SHEET C-6, DETAIL 3)

- A. The unit price for "Greenery Gabion Check Structures" shall include costs for embedment excavation, grading, subgrade preparation, and furnish/install of all materials required to fully construct the structures per the plan detail. No separate payment will be made for geotextile, aggregate, etc.
- B. Payment for "Greenery Gabion Check Structures" shall be determined by multiplying the accepted number of installations completed by the unit price in the contract.

4.8 TYPE 2 ENERGY DISSIPATERS

- A. The unit price for "Type 2 Energy Dissipaters" shall include costs for grading, subgrade preparation, and furnish/install of all materials required to fully construct the structures per the standard detail. No separate payment will be made for geotextile, aggregate, etc.
- B. Payment for "Type 2 Energy Dissipaters" shall be determined by multiplying the accepted number of installations completed by the unit price in the contract.

END OF SECTION

SUPPLEMENTARY SPECIAL PROVISIONS

APPENDICES

APPENDIX A
CEQA CONSISTENCY EVALUATION MEMO



THE CITY OF SAN DIEGO

MEMORANDUM

DATE: August 3, 2017
TO: Hamid Fathi, Associate Engineer – Civil, Environmental Services Department
FROM: Elena Pascual, Junior Planner, Planning Department
SUBJECT: Miramar Landfill Storm Water Improvements Project - 15162 Evaluation

The CEQA and Environmental Policy Section of the Planning Department has completed a California Environmental Quality Act (CEQA) Section 15162 consistency evaluation for the Miramar Landfill Storm Water Improvements project by the City of San Diego's Environmental Services Department (ESD), which is described in greater detail as follows.

Previously Certified CEQA Document

On July 13, 2007, the San Diego City Council certified a Final Environmental Impact Report (FEIR) for the Miramar Service Life Extension / Height Increase project (Project No. 122833 / SCH No. 2006051004).

Background

On July 13, 2007, the San Diego City Council certified the Final Environmental Impact Report (FEIR) for the Miramar Service Life Extension / Height Increase project (Project No. 122833 / SCH No. 2006051004). The FEIR, which analyzed the environmental effects associated with increasing the permitted height of the West Miramar Landfill, also addressed the modifications and maintenance that would need to be made to the existing drainage control system to accommodate the landfill's vertical expansion.

Scope of Proposed Activity

The proposed project is a Best Management Practices (BMP) implementation project. The project includes the design and implementation of source control BMPs to reduce sediment and other pollutants in storm water discharges at the West Miramar Waste Disposal Facility. Implemented BMPs will include asphalt pavement, rock inlet protection, rock and articulated concrete mats, earthen berms, hydro seed and hydraulic mulch, slope interrupters, and tracking controls, all within the existing, disturbed, landfill footprint. Asphalt pavement, stabilized road shoulders and construction of stabilized roadside ditches will also be implemented in select sections of the Main Haul Road.

CEQA Guidelines Section 15162 Consistency Evaluation

The CEQA Section of the Environment & Policy Analysis Division of the Planning Department

has reviewed the proposed Best Management Practices (BMP) implementation project and has found that the project is consistent with the Proposed Project section analyzed in the 2007 FEIR. Implementation of the proposed project, which includes designing and implementing source control BMPs to reduce sediment and other pollutants in storm water discharge, lists improvements to the existing drainage system consistent with those analyzed in the 2007 FEIR. Thus, the proposed project would be consistent with the 2007 FEIR in accordance with CEQA Guidelines Section 15162 and Public Resources Code Section 21166.

Section 15162 Criteria

When an EIR has been certified or a negative declaration adopted for a project, no subsequent EIR shall be prepared for that project unless the lead agency determines, on the basis of substantial evidence in the light of the whole record, one or more of the following:

- (1) Substantial changes are proposed in the project which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
- (2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR or negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
- (3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete or the negative declaration was adopted, shows any of the following:
 - (A) The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
 - (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
 - (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
 - (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.

None of the three criteria listed above has occurred, therefore the CEQA and Environmental Policy Section of the Planning Department determined there is no need to prepare subsequent or supplemental environmental documents for the proposed amendments.

CEQA 15162 Consistency Evaluation

The CEQA and Environmental Policy Section of the Planning Department reviewed the

proposed project and conducted a CEQA Section 15162 consistency evaluation pursuant to Public Resources Code 21166 and CEQA Guidelines Section 15162. The proposed project would not result in new significant direct, indirect, or cumulative impacts over and above those disclosed in the previously certified 2007 FEIR.

Elena Pascual

Elena Pascual
Junior Planner
Planning Department

cc: Rebecca Malone, Senior Planner, Planning Department

APPENDIX B

FIRE HYDRANT METER PROGRAM

CITY OF SAN DIEGO CALIFORNIA DEPARTMENT INSTRUCTIONS	NUMBER DI 55.27	DEPARTMENT Water Department
SUBJECT FIRE HYDRANT METER PROGRAM (FORMERLY: CONSTRUCTION METER PROGRAM)	PAGE 1 OF 10	EFFECTIVE DATE October 15, 2002
	SUPERSEDES DI 55.27	DATED April 21, 2000

1. **PURPOSE**

- 1.1 To establish a Departmental policy and procedure for issuance, proper usage and charges for fire hydrant meters.

2. **AUTHORITY**

- 2.1 All authorities and references shall be current versions and revisions.
- 2.2 San Diego Municipal Code (NC) Chapter VI, Article 7, Sections 67.14 and 67.15
- 2.3 Code of Federal Regulations, Safe Drinking Water Act of 1986
- 2.4 California Code of Regulations, Titles 17 and 22
- 2.5 California State Penal Code, Section 498B.0
- 2.6 State of California Water Code, Section 110, 500-6, and 520-23
- 2.7 Water Department Director

Reference

- 2.8 State of California Guidance Manual for Cross Connection Programs
- 2.9 American Water Works Association Manual M-14, Recommended Practice for Backflow Prevention
- 2.10 American Water Works Association Standards for Water Meters
- 2.11 U.S.C. Foundation for Cross Connection Control and Hydraulic Research Manual

3. **DEFINITIONS**

- 3.1 **Fire Hydrant Meter:** A portable water meter which is connected to a fire hydrant for the purpose of temporary use. (These meters are sometimes referred to as Construction Meters.)

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	SUPERSEDES DI 55.27	DATED April 21, 2000

- 3.2 **Temporary Water Use:** Water provided to the customer for no longer than twelve (12) months.
- 3.3 **Backflow Preventor:** A Reduced Pressure Principal Assembly connected to the outlet side of a Fire Hydrant Meter.

4. **POLICY**

- 4.1 The Water Department shall collect a deposit from every customer requiring a fire hydrant meter and appurtenances prior to providing the meter and appurtenances (see Section 7.1 regarding the Fees and Deposit Schedule). The deposit is refundable upon the termination of use and return of equipment and appurtenances in good working condition.
- 4.2 Fire hydrant meters will have a 2 ½" swivel connection between the meter and fire hydrant. The meter shall not be connected to the 4" port on the hydrant. All Fire Hydrant Meters issued shall have a Reduced Pressure Principle Assembly (RP) as part of the installation. Spanner wrenches are the only tool allowed to turn on water at the fire hydrant.
- 4.3 The use of private hydrant meters on City hydrants is prohibited, with exceptions as noted below. All private fire hydrant meters are to be phased out of the City of San Diego. All customers who wish to continue to use their own fire hydrant meters must adhere to the following conditions:
 - a. Meters shall meet all City specifications and American Water Works Association (AWWA) standards.
 - b. Customers currently using private fire hydrant meters in the City of San Diego water system will be allowed to continue using the meter under the following conditions:
 - 1. The customer must submit a current certificate of accuracy and calibration results for private meters and private backflows annually to the City of San Diego, Water Department, Meter Shop.

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2. The meter must be properly identifiable with a clearly labeled serial number on the body of the fire hydrant meter. The serial number shall be plainly stamped on the register lid and the main casing. Serial numbers shall be visible from the top of the meter casing and the numbers shall be stamped on the top of the inlet casing flange.
3. All meters shall be locked to the fire hydrant by the Water Department, Meter Section (see Section 4.7).
4. All meters shall be read by the Water Department, Meter Section (see Section 4.7).
5. All meters shall be relocated by the Water Department, Meter Section (see Section 4.7).
6. These meters shall be tested on the anniversary of the original test date and proof of testing will be submitted to the Water Department, Meter Shop, on a yearly basis. If not tested, the meter will not be allowed for use in the City of San Diego.
7. All private fire hydrant meters shall have backflow devices attached when installed.
8. The customer must maintain and repair their own private meters and private backflows.
9. The customer must provide current test and calibration results to the Water Department, Meter Shop after any repairs.
10. When private meters are damaged beyond repair, these private meters will be replaced by City owned fire hydrant meters.

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11. When a private meter malfunctions, the customer will be notified and the meter will be removed by the City and returned to the customer for repairs. Testing and calibration results shall be given to the City prior to any re-installation.
 12. The register shall be hermetically sealed straight reading and shall be readable from the inlet side. Registration shall be in hundred cubic feet.
 13. The outlet shall have a 2 ½ "National Standards Tested (NST) fire hydrant male coupling.
 14. Private fire hydrant meters shall not be transferable from one contracting company to another (i.e. if a company goes out of business or is bought out by another company).
- 4.4 All fire hydrant meters and appurtenances shall be installed, relocated and removed by the City of San Diego, Water Department. All City owned fire hydrant meters and appurtenances shall be maintained by the City of San Diego, Water Department, Meter Services.
- 4.5 If any fire hydrant meter is used in violation of this Department Instruction, the violation will be reported to the Code Compliance Section for investigation and appropriate action. Any customer using a fire hydrant meter in violation of the requirements set forth above is subject to fines or penalties pursuant to the Municipal Code, Section 67.15 and Section 67.37.
- 4.6 **Conditions and Processes for Issuance of a Fire Hydrant Meter**
- Process for Issuance
- a. Fire hydrant meters shall only be used for the following purposes:
 1. Temporary irrigation purposes not to exceed one year.

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2. Construction and maintenance related activities (see Tab 2).
 - b. No customer inside or outside the boundaries of the City of San Diego Water Department shall resell any portion of the water delivered through a fire hydrant by the City of San Diego Water Department.
 - c. The City of San Diego allows for the issuance of a temporary fire hydrant meter for a period not to exceed 12 months (365 days). An extension can only be granted in writing from the Water Department Director for up to 90 additional days. A written request for an extension by the consumer must be submitted at least 30 days prior to the 12 month period ending. No extension shall be granted to any customer with a delinquent account with the Water Department. No further extensions shall be granted.
 - d. Any customer requesting the issuance of a fire hydrant meter shall file an application with the Meter Section. The customer must complete a "Fire Hydrant Meter Application" (Tab 1) which includes the name of the company, the party responsible for payment, Social Security number and/or California ID, requested location of the meter (a detailed map signifying an exact location), local contact person, local phone number, a contractor's license (or a business license), description of specific water use, duration of use at the site and full name and address of the person responsible for payment.
 - e. At the time of the application the customer will pay their fees according to the schedule set forth in the Rate Book of Fees and Charges, located in the City Clerk's Office. All fees must be paid by check, money order or cashiers check, made payable to the City Treasurer. Cash will not be accepted.
 - f. No fire hydrant meters shall be furnished or relocated for any customer with a delinquent account with the Water Department.
 - g. After the fees have been paid and an account has been created, the

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meter shall be installed within 48 hours (by the second business day). For an additional fee, at overtime rates, meters can be installed within 24 hours (within one business day).

4.7 Relocation of Existing Fire Hydrant Meters

- a. The customer shall call the Fire Hydrant Meter Hotline (herein referred to as "Hotline"), a minimum of 24 hours in advance, to request the relocation of a meter. A fee will be charged to the existing account, which must be current before a work order is generated for the meter's relocation.
- b. The customer will supply in writing the address where the meter is to be relocated (map page, cross street, etc). The customer must update the original Fire Hydrant Meter Application with any changes as it applies to the new location.
- c. Fire hydrant meters shall be read on a monthly basis. While fire hydrant meters and backflow devices are in service, commodity, base fee and damage charges, if applicable, will be billed to the customer on a monthly basis. If the account becomes delinquent, the meter will be removed.

4.8 Disconnection of Fire Hydrant Meter

- a. After ten (10) months a "Notice of Discontinuation of Service" (Tab 3) will be issued to the site and the address of record to notify the customer of the date of discontinuance of service. An extension can only be granted in writing from the Water Department Director for up to 90 additional days (as stated in Section 4.6C) and a copy of the extension shall be forwarded to the Meter Shop Supervisor. If an extension has not been approved, the meter will be removed after twelve (12) months of use.
- b. Upon completion of the project the customer will notify the Meter Services office via the Hotline to request the removal of the fire hydrant meter and appurtenances. A work order will be generated

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for removal of the meter.

- c. Meter Section staff will remove the meter and backflow prevention assembly and return it to the Meter Shop. Once returned to the Meter Shop the meter and backflow will be tested for accuracy and functionality.
- d. Meter Section Staff will contact and notify Customer Services of the final read and any charges resulting from damages to the meter and backflow or its appurtenance. These charges will be added on the customer's final bill and will be sent to the address of record. Any customer who has an outstanding balance will not receive additional meters.
- e. Outstanding balances due may be deducted from deposits and any balances refunded to the customer. Any outstanding balances will be turned over to the City Treasurer for collection. Outstanding balances may also be transferred to any other existing accounts.

5. **EXCEPTIONS**

- 5.1 Any request for exceptions to this policy shall be presented, in writing, to the Customer Support Deputy Director, or his/her designee for consideration.

6. **MOBILE METER**

- 6.1 Mobile meters will be allowed on a case by case basis. All mobile meters will be protected by an approved backflow assembly and the minimum requirement will be a Reduced Pressure Principal Assembly. The two types of Mobile Meters are vehicle mounted and floating meters. Each style of meters has separate guidelines that shall be followed for the customer to retain service and are described below:

- a) **Vehicle Mounted Meters:** Customer applies for and receives a City owned Fire Hydrant Meter from the Meter Shop. The customer mounts the meter on the vehicle and brings it to the Meter Shop for

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inspection. After installation is approved by the Meter Shop the vehicle and meter shall be brought to the Meter Shop on a monthly basis for meter reading and on a quarterly basis for testing of the backflow assembly. Meters mounted at the owner's expense shall have the one year contract expiration waived and shall have meter or backflow changed if either fails.

b) **Floating Meters:** Floating Meters are meters that are not mounted to a vehicle. **(Note: All floating meters shall have an approved backflow assembly attached.)** The customer shall submit an application and a letter explaining the need for a floating meter to the Meter Shop. The Fire Hydrant Meter Administrator, after a thorough review of the needs of the customer, (i.e. number of jobsites per day, City contract work, lack of mounting area on work vehicle, etc.), may issue a floating meter. At the time of issue, it will be necessary for the customer to complete and sign the "Floating Fire Hydrant Meter Agreement" which states the following:

- 1) The meter will be brought to the Meter Shop at 2797 Caminito Chollas, San Diego on the third week of each month for the monthly read by Meter Shop personnel.
- 2) Every other month the meter will be read and the backflow will be tested. This date will be determined by the start date of the agreement.

If any of the conditions stated above are not met the Meter Shop has the right to cancel the contract for floating meter use and close the account associated with the meter. The Meter Shop will also exercise the right to refuse the issuance of another floating meter to the company in question.

Any Fire Hydrant Meter using reclaimed water shall not be allowed use again with any potable water supply. The customer shall incur the cost of replacing the meter and backflow device in this instance.

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7. FEE AND DEPOSIT SCHEDULES

7.1 **Fees and Deposit Schedules:** The fees and deposits, as listed in the Rate Book of Fees and Charges, on file with the Office of the City Clerk, are based on actual reimbursement of costs of services performed, equipment and materials. These deposits and fees will be amended, as needed, based on actual costs. Deposits, will be refunded at the end of the use of the fire hydrant meter, upon return of equipment in good working condition and all outstanding balances on account are paid. Deposits can also be used to cover outstanding balances.

All fees for equipment, installation, testing, relocation and other costs related to this program are subject to change without prior notification. The Mayor and Council will be notified of any future changes.

8. UNAUTHORIZED USE OF WATER FROM A HYDRANT

8.1 Use of water from any fire hydrant without a properly issued and installed fire hydrant meter is theft of City property. Customers who use water for unauthorized purposes or without a City of San Diego issued meter will be prosecuted.

8.2 If any unauthorized connection, disconnection or relocation of a fire hydrant meter, or other connection device is made by anyone other than authorized Water Department personnel, the person making the connection will be prosecuted for a violation of San Diego Municipal Code, Section 67.15. In the case of a second offense, the customer's fire hydrant meter shall be confiscated and/or the deposit will be forfeited.

8.3 Unauthorized water use shall be billed to the responsible party. Water use charges shall be based on meter readings, or estimates when meter readings are not available.

8.4 In case of unauthorized water use, the customer shall be billed for all applicable charges as if proper authorization for the water use had been obtained, including but not limited to bi-monthly service charges, installation charges and removal charges.

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- 8.5 If damage occurs to Water Department property (i.e. fire hydrant meter, backflow, various appurtenances), the cost of repairs or replacements will be charged to the customer of record (applicant).

Water Department Director

- Tabs: 1. Fire Hydrant Meter Application
2. Construction & Maintenance Related Activities With No Return To Sewer
3. Notice of Discontinuation of Service

APPENDIX

Administering Division: Customer Support Division

Subject Index: Construction Meters
Fire Hydrant
Fire Hydrant Meter Program
Meters, Floating or Vehicle Mounted
Mobile Meter
Program, Fire Hydrant Meter

Distribution: DI Manual Holders



Application for Fire (EXHIBIT A) Hydrant Meter

(For Office Use Only)

NS REQ	FAC#
DATE	BY

METER SHOP (619) 527-7449

Meter Information

Application Date	Requested Install Date:
------------------	-------------------------

Fire Hydrant Location: (Attach Detailed Map//Thomas Bros. Map Location or Construction drawing.) <u>Zip:</u>	<u>T.B.</u>	<u>G.B. (CITY USE)</u>
Specific Use of Water:		
Any Return to Sewer or Storm Drain, if so, explain:		
Estimated Duration of Meter Use: <input type="text"/>	<input type="checkbox"/>	Check Box if Reclaimed Water

Company Information

Company Name:			
Mailing Address:			
City:	State:	Zip:	Phone: ()
*Business license#		*Contractor license#	
A Copy of the Contractor's license OR Business License is required at the time of meter issuance.			
Name and Title of Billing Agent: <small>(PERSON IN ACCOUNTS PAYABLE)</small>			Phone: ()
Site Contact Name and Title:			Phone: ()
Responsible Party Name:			Title:
Cal ID#			Phone: ()
Signature:		Date:	
Guarantees Payment of all Charges Resulting from the use of this Meter. Insures that employees of this Organization understand the proper use of Fire Hydrant Meter			

Fire Hydrant Meter Removal Request	Requested Removal Date:
Provide Current Meter Location if Different from Above:	
Signature:	Title: Date:
Phone: ()	Pager: ()

<input type="checkbox"/> City Meter	<input type="checkbox"/> Private Meter
Contract Acct #:	Deposit Amount: \$ 936.00 Fees Amount: \$ 62.00
Meter Serial #	Meter Size: 05 Meter Make and Style: 6-7
Backflow #	Backflow Size: Backflow Make and Style:
Name:	Signature: Date:

WATER USES WITHOUT ANTICIPATED CHARGES FOR RETURN TO SEWER

Auto Detailing
Backfilling
Combination Cleaners (Vactors)
Compaction
Concrete Cutters
Construction Trailers
Cross Connection Testing
Dust Control
Flushing Water Mains
Hydro Blasting
Hydro Seeing
Irrigation (for establishing irrigation only; not continuing irrigation)
Mixing Concrete
Mobile Car Washing
Special Events
Street Sweeping
Water Tanks
Water Trucks
Window Washing

Note:

1. If there is any return to sewer or storm drain, then sewer and/or storm drain fees will be charges.

Date

Name of Responsible Party
Company Name and Address
Account Number: _____

Subject: Discontinuation of Fire Hydrant Meter Service

Dear Water Department Customer:

The authorization for use of Fire Hydrant Meter # _____, located at (*Meter Location Address*) ends in 60 days and will be removed on or after (*Date Authorization Expires*). Extension requests for an additional 90 days must be submitted in writing for consideration 30 days prior to the discontinuation date. If you require an extension, please contact the Water Department, or mail your request for an extension to:

City of San Diego
Water Department
Attention: Meter Services
2797 Caminito Chollas
San Diego, CA 92105-5097

Should you have any questions regarding this matter, please call the Fire Hydrant Hotline at (619) _____ - _____.

Sincerely,

Water Department

APPENDIX C

MATERIALS TYPICALLY ACCEPTED BY CERTIFICATE OF COMPLIANCE

Materials Typically Accepted by Certificate of Compliance

1. Soil amendment
2. Fiber mulch
3. PVC or PE pipe up to 16 inch diameter
4. Stabilizing emulsion
5. Lime
6. Preformed elastomeric joint seal
7. Plain and fabric reinforced elastomeric bearing pads
8. Steel reinforced elastomeric bearing pads
9. Waterstops (Special Condition)
10. Epoxy coated bar reinforcement
11. Plain and reinforcing steel
12. Structural steel
13. Structural timber and lumber
14. Treated timber and lumber
15. Lumber and timber
16. Aluminum pipe and aluminum pipe arch
17. Corrugated steel pipe and corrugated steel pipe arch
18. Structural metal plate pipe arches and pipe arches
19. Perforated steel pipe
20. Aluminum underdrain pipe
21. Aluminum or steel entrance tapers, pipe downdrains, reducers, coupling bands and slip joints
22. Metal target plates
23. Paint (traffic striping)
24. Conductors
25. Painting of electrical equipment
26. Electrical components
27. Engineering fabric
28. Portland Cement
29. PCC admixtures
30. Minor concrete, asphalt
31. Asphalt (oil)
32. Liquid asphalt emulsion
33. Epoxy

APPENDIX D

SAMPLE CITY INVOICE WITH SPEND CURVE

City of San Diego, CM&FS Div., 9753 Chesapeake Drive, SD CA 92123

Project Name:

Work Order No or Job Order No.

City Purchase Order No.

Resident Engineer (RE):

RE Phone#: Fax#:

Contractor's Name:

Contractor's Address:

Contractor's Phone #:

Contractor's fax #:

Contact Name:

Invoice No.

Invoice Date:

Billing Period: (To)

Item #	Item Description	Contract Authorization				Previous Totals To Date		This Estimate		Totals to Date	
		Unit	Price	Qty	Extension	%/QTY	Amount	% / QTY	Amount	% / QTY	Amount
1					\$ -		\$ -		\$ -	0.00	\$ -
2					\$ -		\$ -		\$ -	0.00%	\$ -
3					\$ -		\$ -		\$ -	0.00%	\$ -
4					\$ -		\$ -		\$ -	0.00%	\$ -
5					\$ -		\$ -		\$ -	0.00%	\$ -
6					\$ -		\$ -		\$ -	0.00%	\$ -
7					\$ -		\$ -		\$ -	0.00%	\$ -
8					\$ -		\$ -		\$ -	0.00%	\$ -
5					\$ -		\$ -		\$ -	0.00%	\$ -
6					\$ -		\$ -		\$ -	0.00%	\$ -
7					\$ -		\$ -		\$ -	0.00%	\$ -
8					\$ -		\$ -		\$ -	0.00%	\$ -
9					\$ -		\$ -		\$ -	0.00%	\$ -
10					\$ -		\$ -		\$ -	0.00%	\$ -
11					\$ -		\$ -		\$ -	0.00%	\$ -
12					\$ -		\$ -		\$ -	0.00%	\$ -
13					\$ -		\$ -		\$ -	0.00%	\$ -
14					\$ -		\$ -		\$ -	0.00%	\$ -
15					\$ -		\$ -		\$ -	0.00%	\$ -
16					\$ -		\$ -		\$ -	0.00%	\$ -
17	Field Orders				\$ -		\$ -		\$ -	0.00%	\$ -
	CHANGE ORDER No.				\$ -		\$ -		\$ -	0.00%	\$ -
					\$ -		\$ -		\$ -	0.00%	\$ -
Total Authorized Amount (including approved Change Order)					\$ -		\$ -		\$ -	Total Billed	\$ -

SUMMARY

A. Original Contract Amount	\$ -
B. Approved Change Order #00 Thru #00	\$ -
C. Total Authorized Amount (A+B)	\$ -
D. Total Billed to Date	\$ -
E. Less Total Retention (5% of D)	\$ -
F. Less Total Previous Payments	\$ -
G. Payment Due Less Retention	\$0.00
H. Remaining Authorized Amount	\$0.00

I certify that the materials
have been received by me in
the quality and quantity specified

Resident Engineer

Construction Engineer

Retention and/or Escrow Payment Schedule

Total Retention Required as of this billing (Item E)	\$0.00
Previous Retention Withheld in PO or in Escrow	\$0.00
Add'l Amt to Withhold in PO/Transfer in Escrow:	\$0.00
Amt to Release to Contractor from PO/Escrow:	

Contractor Signature and Date: _____

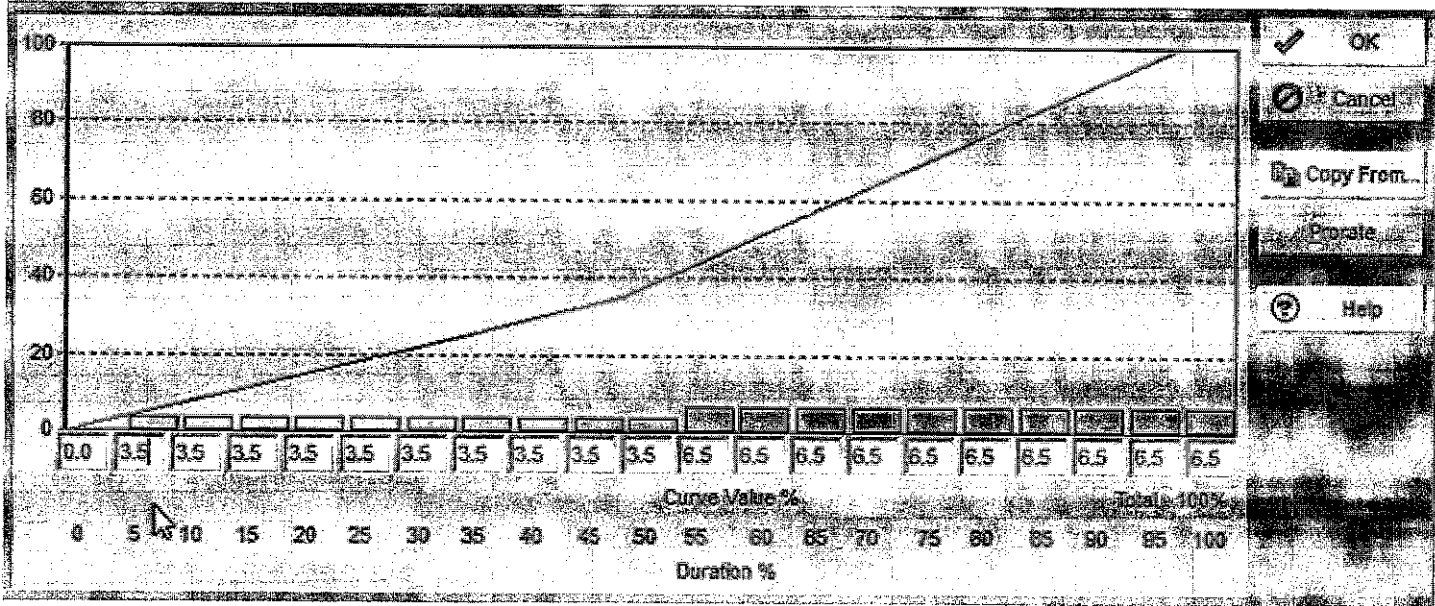
Sample Project Spend Curve

Incremental Curve Value
Duration % Increment

Sample Date Entries Required

0.0%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%	6.5%
0%	5%	10%	15%	20%	25%	30%	35%	40%	45%	50%	55%	60%	65%	70%	75%	80%	85%	90%	95%	100%

Sample Screenshot from Primavera P6



APPENDIX E
HAZARDOUS LABEL AND FORMS

HAZARDOUS WASTE

**STATE AND FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE, OR PUBLIC SAFETY
AUTHORITY, OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY
OR THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES**

GENERATOR NAME _____

ADDRESS _____

EPA NO. _____

CITY _____ STATE _____ ZIP _____

EPA ID NO. _____ MANIFEST DOCUMENT NO. _____

EPA WASTE NO. _____ CA WASTE NO. _____ ACCUMULATION START DATE _____

CONTENTS / COMPOSITION _____

PROPER DOT HAZARDOUS MATERIAL NAME _____

TECHNICAL NAME (S) _____

UNNA NO. WITH PREFIX _____

PHYSICAL STATE: SOLID LIQUID

HAZARDOUS PROPERTIES: CORROSIVE REACTIVE FLAMMABLE TOXIC OTHER _____

HANDLE WITH CARE!

CONTAINS HAZARDOUS OR TOXIC WASTES

INCIDENT/RELEASE ASSESSMENT FORM ¹

If you have an emergency, Call 911

Handlers of hazardous materials are required to report releases. The following is a tool to be used for assessing if a release is reportable. Additionally, a non-reportable release incident form is provided to document why a release is not reported (see back).

Questions for Incident Assessment:

- | | YES | NO |
|---|--------------------------|--------------------------|
| 1. Was anyone killed or injured, or did they require medical care or admitted to a hospital for observation? | <input type="checkbox"/> | <input type="checkbox"/> |
| 2. Did anyone, other than employees in the immediate area of the release, evacuate? | <input type="checkbox"/> | <input type="checkbox"/> |
| 3. Did the release cause off-site damage to public or private property? | <input type="checkbox"/> | <input type="checkbox"/> |
| 4. Is the release greater than or equal to a reportable quantity (RQ)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 5. Was there an uncontrolled or unpermitted release to the air? | <input type="checkbox"/> | <input type="checkbox"/> |
| 6. Did an uncontrolled or unpermitted release escape secondary containment, or extend into any sewers, storm water conveyance systems, utility vaults and conduits, wetlands, waterways, public roads, or off site? | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. Will control, containment, decontamination, and/or clean up require the assistance of federal, state, county, or municipal response elements? | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. Was the release or threatened release involving an unknown material or contains an unknown hazardous constituent? | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. Is the incident a threatened release (a condition creating a substantial probability of harm that requires immediate action to prevent, reduce, or mitigate damages to persons, property, or the environment)? | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. Is there an increased potential for secondary effects including fire, explosion, line rupture, equipment failure, or other outcomes that may endanger or cause exposure to employees, the general public, or the environment? | <input type="checkbox"/> | <input type="checkbox"/> |

If the answer is YES to any of the above questions – report the release to the California Office of Emergency Services at 800-852-7550 and the local CUPA daytime: (619) 338-2284, after hours: (858) 565-5255. Note: other state and federal agencies may require notification depending on the circumstances.

Call 911 in an emergency

If all answers are NO, complete a Non Reportable Release Incident Form (page 2 of 2) and keep readily available. Documenting why a “no” response was made to each question will serve useful in the event questions are asked in the future, and to justify not reporting to an outside regulatory agency.

If in doubt, report the release.

¹ This document is a guide for accessing when hazardous materials release reporting is required by Chapter 6.95 of the California Health and Safety Code. It does not replace good judgment, Chapter 6.95, or other state or federal release reporting requirements.

EMERGENCY RELEASE FOLLOW - UP NOTICE REPORTING FORM

A	BUSINESS NAME	FACILITY EMERGENCY CONTACT & PHONE NUMBER () -		
B	INCIDENT MO DAY YR DATE	TIME OES NOTIFIED	(use 24 hr time)	OES CONTROL NO.
C	INCIDENT ADDRESS LOCATION	CITY / COMMUNITY	COUNTY	ZIP
D	CHEMICAL OR TRADE NAME (print or type)		CAS Number	
D	CHECK IF CHEMICAL IS LISTED IN 40 CFR 355, APPENDIX A <input type="checkbox"/>		CHECK IF RELEASE REQUIRES NOTIFICATION UNDER 42 U.S.C. Section 9603 (a) <input type="checkbox"/>	
D	PHYSICAL STATE CONTAINED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	PHYSICAL STATE RELEASED <input type="checkbox"/> SOLID <input type="checkbox"/> LIQUID <input type="checkbox"/> GAS	QUANTITY RELEASED	
D	ENVIRONMENTAL CONTAMINATION <input type="checkbox"/> AIR <input type="checkbox"/> WATER <input type="checkbox"/> GROUND <input type="checkbox"/> OTHER	TIME OF RELEASE	DURATION OF RELEASE — DAYS — HOURS — MINUTES	
E	ACTIONS TAKEN			
F	KNOWN OR ANTICIPATED HEALTH EFFECTS (Use the comments section for addition information)			
F	<input type="checkbox"/> ACUTE OR IMMEDIATE (explain) _____			
F	<input type="checkbox"/> CHRONIC OR DELAYED (explain) _____			
F	<input type="checkbox"/> NOTKNOWN (explain) _____			
G	ADVICE REGARDING MEDICAL ATTENTION NECESSARY FOR EXPOSED INDIVIDUALS			
H	COMMENTS (INDICATE SECTION (A - G) AND ITEM WITH COMMENTS OR ADDITIONAL INFORMATION)			
I	CERTIFICATION: I certify under penalty of law that I have personally examined and I am familiar with the information submitted and believe the submitted information is true, accurate, and complete.			
I	REPORTING FACILITY REPRESENTATIVE (print or type) _____			
I	SIGNATURE OF REPORTING FACILITY REPRESENTATIVE _____ DATE: _____			

EMERGENCY RELEASE FOLLOW-UP NOTICE REPORTING FORM INSTRUCTIONS

GENERAL INFORMATION:

Chapter 6.95 of Division 20 of the California Health and Safety Code requires that written emergency release follow-up notices prepared pursuant to 42 U.S.C. § 11004, be submitted using this reporting form. Non-permitted releases of reportable quantities of Extremely Hazardous Substances (listed in 40 CFR 355, appendix A) or of chemicals that require release reporting under section 103(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 [42 U.S.C. § 9603(a)] must be reported on the form, as soon as practicable, but no later than 30 days, following a release. The written follow-up report is required in addition to the verbal notification.

BASIC INSTRUCTIONS:

- The form, when filled out, reports follow-up information required by 42 U.S.C § 11004. Ensure that all information requested by the form is provided as completely as possible.
- If the incident involves reportable releases of more than one chemical, prepare one report form for each chemical released.
- If the incident involves a series of separate releases of chemical(s) at different times, the releases should be reported on separate reporting forms.

SPECIFIC INSTRUCTIONS:

Block A: Enter the name of the business and the name and phone number of a contact person who can provide detailed facility information concerning the release.

Block B: Enter the date of the incident and the time that verbal notification was made to OES. The OES control number is provided to the caller by OES at the time verbal notification is made. Enter this control number in the space provided.

Block C: Provide information pertaining to the location where the release occurred. Include the street address, the city or community, the county and the zip code.

Block D: Provide information concerning the specific chemical that was released. Include the chemical or trade name and the Chemical Abstract Service (CAS) number. Check all categories that apply. Provide best available information on quantity, time and duration of the release.

Block E: Indicate all actions taken to respond to and contain the release as specified in 42 U.S.C. § 11004(c).

Block F: Check the categories that apply to the health effects that occurred or could result from the release. Provide an explanation or description of the effects in the space provided. Use Block H for additional comments/information if necessary to meet requirements specified in 42 U.S.C. § 11004(c).

Block G: Include information on the type of medical attention required for exposure to the chemical released. Indicate when and how this information was made available to individuals exposed and to medical personnel, if appropriate for the incident, as specified in 42 U.S.C. § 11004(c).

Block H: List any additional pertinent information.

Block I: Print or type the name of the facility representative submitting the report. Include the official signature and the date that the form was prepared.

MAIL THE COMPLETED REPORT TO:

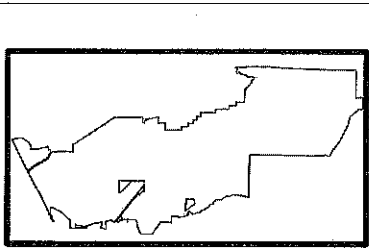
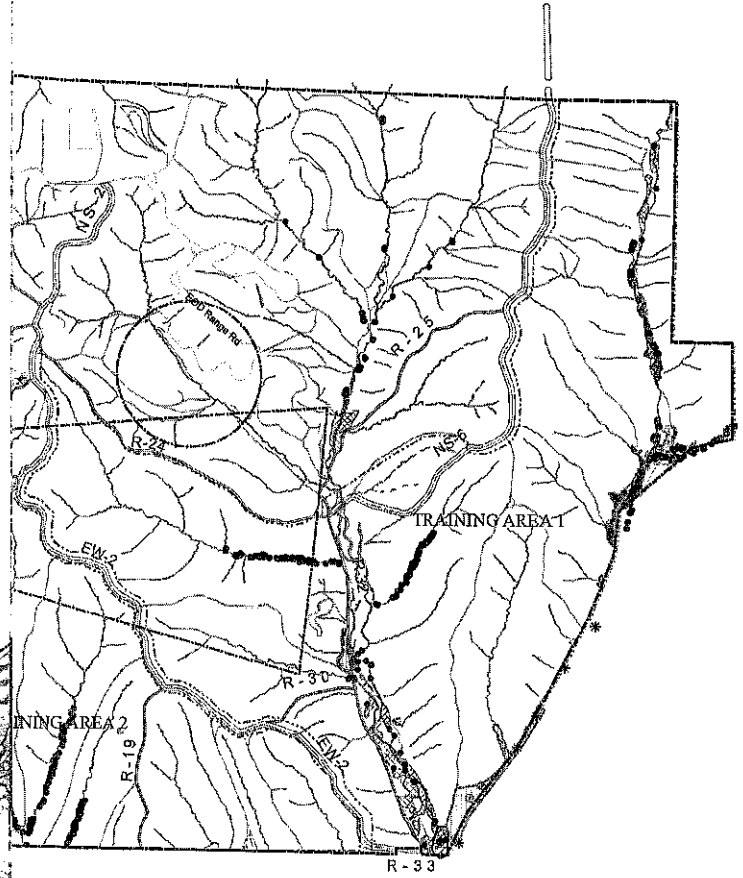
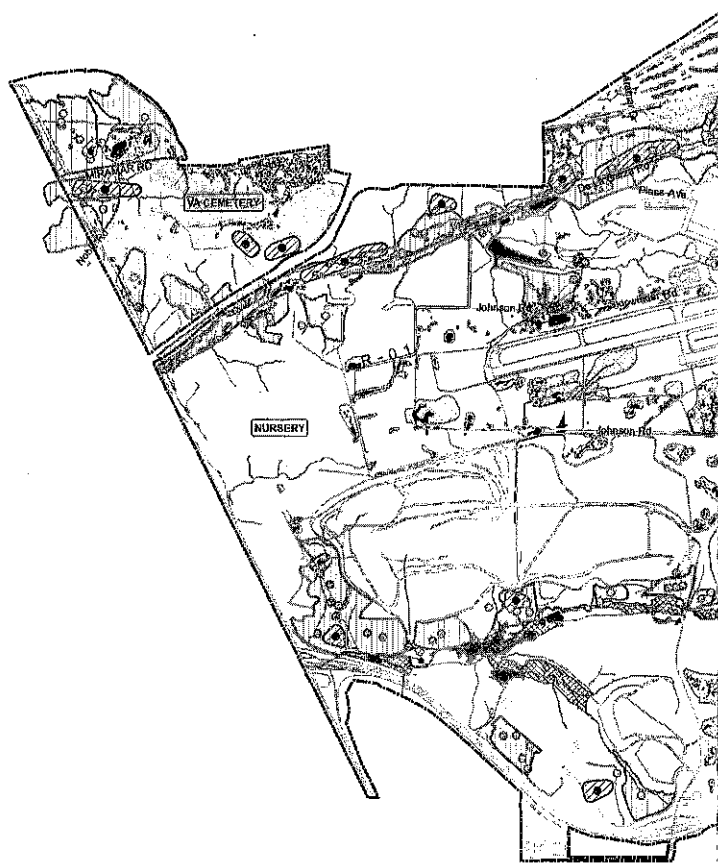
**State Emergency Response Commission (SERC)
Attn: Section 304 Reports
Hazardous Materials Unit
3650 Schriever Avenue
Mather, CA 95655**

NOTE: Authority cited: Sections 25503, 25503.1 and 25507.1, Health and Safety Code. Reference: Sections 25503(b)(4), 25503.1, 25507.1, 25518 and 25520, Health and Safety Code.

APPENDIX F

MCAS SENSITIVE RESOURCES MAP

MCAS MIRAMAR SENSITIVE RESOURCES FEBRUARY 2016



MARINE CORPS AIR STATION MIRAMAR



Marine Corps Air Station Miramar
 Environmental Natural Resources
 Phone: (760) 434-2000
 FAX: (760) 434-2001
 E-mail: enr@mcas.miramar.af.mil
 Website: www.mcas.miramar.af.mil
 THE NORTH AVENUE
 WASHINGTON, D.C. 20330-3000
 NAVY AERONAUTICAL
 HAD 83

Endangered Species
 (2012 CENSUS)
 (2006 CENSUS)
 IR SIGHTINGS
 CATCHER SIGHTINGS
 TERRITORIES
 Map Publisher USE AREAS
 CATCHER USE AREAS

Areas Surveyed for Vernal Pool Resources
 VERNAL POOLS / PONDED SITES WITH ENDANGERED SPECIES
 VERNAL POOLS / PONDED SITES SURVEYED (NO ENDANGERED SPECIES)
 VERNAL POOL SURVEY WATERSHEDS

Other Sensitive Areas
 ADDITIONAL SENSITIVE RESOURCES
 POSSIBLE WATERS OF THE U.S.
 NATIVE GRASSLAND
 OAK WOODLAND
 RARE OTAY CEANOTHUS

APPENDIX G

SAMPLE OF PUBLIC NOTICE

FOR SAMPLE REFERENCE ONLY



PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

The work will consist of:

- Saw-cutting and trench work on Ingulf Street from Morena Boulevard to Galveston Street to install new water mains, water laterals and fire hydrants.
- Streets where trenching takes place will be resurfaced and curb ramps will be upgraded to facilitate access for persons with disabilities where required.
- This work is anticipated to be complete in your community by December 2016.

How your neighborhood may be impacted:

- Water service to some properties during construction will be provided by a two-inch highline pipe that will run along the curb. To report a highline leak call 619-515-3525.
- Temporary water service disruptions are planned. If planned disruptions impact your property, you will receive advance notice.
- Parking restrictions will exist because of the presence of construction equipment and materials.
- "No Parking" signs will be displayed 72 hours in advance of the work.
- Cars parked in violation of signs will be TOWED.

Hours and Days of Operation:

Monday through Friday X:XX AM to X:XX PM

City of San Diego Contractor:

Company Name: XXX XXX XXXX



PROJECT TITLE

Work on your street will begin within one week to replace the existing water mains servicing your community.

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Hours and Days of Operation:

Monday through Friday X:XX AM to X:XX PM

City of San Diego Contractor:

Company Name: XXX XXX XXXX

To contact the City of San Diego: Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP

Ⓢ This information is available in alternative formats upon request.
Miramar Landfill Storm Water Improvements
Appendix G – Sample Public Notice

To contact the City of San Diego: Public Works
619-533-4207 | engineering@sandiego.gov | sandiego.gov/CIP

Ⓢ This information is available in alternative formats upon request.

APPENDIX H

DRAINAGE CALCULATIONS

GEOSYNTEC CONSULTANTS

COMPUTATION COVER SHEET

Miramar Landfill Storm Water

Project

Client: City of San Diego

Project: Improvements

#: SC0834 **Task #:** 13/01

Hydrology and Hydraulic Calculations for Channel, Low Flow Crossings, and Energy Dissipaters

TITLE OF COMPUTATIONS

COMPUTATIONS BY:	Signature			06/30/2017
				DATE
	Printed Name	Olivia Lincoln		
	and Title	Staff Engineer		

ASSUMPTIONS AND PROCEDURES				
CHECKED BY:	Signature			06/30/2017
(Peer Reviewer)				DATE
	Printed Name	Miguel Parames		
	and Title	Project Engineer		

COMPUTATIONS CHECKED BY:	Signature			06/30/2017
				DATE
	Printed Name	Miguel Parames		
	and Title	Project Engineer		

COMPUTATIONS	Signature			06/30/2017
BACKCHECKED BY: (Originator)				DATE
	Printed Name	Olivia Lincoln		
	and Title	Staff Engineer		

APPROVED BY:	Signature			06/30/2017
(PM or Designate)				DATE
	Printed Name	Courtney Wilson		
	and Title	Senior Engineer		

APPROVAL NOTES:

REVISIONS (Number and initial all revisions)

NO.	SHEET	DATE	BY	CHECKED BY	APPROVAL

**MIRAMAR LANDFILL STORM WATER IMPROVEMENTS
HYDROLOGY AND HYDRAULIC CALCULATIONS
CITY OF SAN DIEGO, CALIFORNIA**

1. PURPOSE

This calculation package was prepared in support of the Miramar Landfill Storm Water Improvements construction plans for the West Miramar Landfill (Facility). Supporting calculations for drainage channels, low flow crossings, and energy dissipaters are included in this report. The calculation package was prepared on behalf of the City of San Diego Environmental Services Department (City ESD) in accordance with Agreement No. H166594, Task Order 13.

2. BACKGROUND

The Facility is enrolled for coverage under the State Water Resource Control Board's (SWRCB) Storm Water Industrial General Permit (IGP) (Order 2014-005-DWQ) (WDID #9 371005556). The City is responsible for implementing the seven IGP-required minimum BMPs, including erosion and sediment controls, to reduce pollutants in industrial storm water discharges. The Facility implements a number of erosion and sediment control BMPs, which include dust control, inlet and outlet protection, energy dissipation, slope stabilization (mulch application), and sediment basins. However, concentrations of total suspended solids (TSS) and metals (aluminum (Al), total iron (Fe) and total zinc (Zn)) possibly associated with sediment, are present in storm water discharges in amounts that exceed the IGP's Numeric Action Levels (NALs). Elevated concentrations of Chemical Oxygen Demand (COD) and total Phosphorus (P) are also present at concentrations that exceed the IGP's NALs that may be associated with compost or waste materials. Based on the storm water data collected during the 2016-2017 reporting year, the Facility will become a Level 2 Discharger for these constituents on 1 July 2017 and more robust BMPs (advanced and treatment control BMPs) will be needed to address the Level 2 Requirement. The City is evaluating storm water treatment options; however, opportunities to minimize mobilization of sediment and other pollutants through source and run-off control BMPs are needed in conjunction with storm water treatment to control pollutant discharges.

This calculation package provides supporting calculations for several run-off control BMPs as part of the Miramar Landfill Storm Water Improvement construction plans.

3. HYDROLOGIC ANALYSIS

The City of San Diego Drainage Design Manual (DDM) (City of San Diego, 2017) requires that the Rational Method be used when conducting hydrologic studies of areas less than 0.5 square miles (320 acres). The Rational Method is outlined in the DDM; peak discharge is determined using Eq. 1.

$$Q = CiA \qquad \text{Eq. 1}$$

Where:

Q = peak discharge (cfs)

C = runoff coefficient expressed as that percentage of rainfall which becomes surface runoff (unitless)

i = average rainfall intensity for a storm duration equal to the time of concentration (T_c) for the contributing Drainage Area (inches/hour)

A = area (acres)

3.1 DRAINAGE AREA (A) AND RUNOFF COEFFICIENT (C)

Drainage Areas (A) were determined using existing topographic contours provided by City (dated 2014 and 2016). Delineations for the Drainage Areas and associated longest flow paths and are shown in Figure 1 through Figure 4. Drainage area acreage and length of flow path are summarized in Table 1.

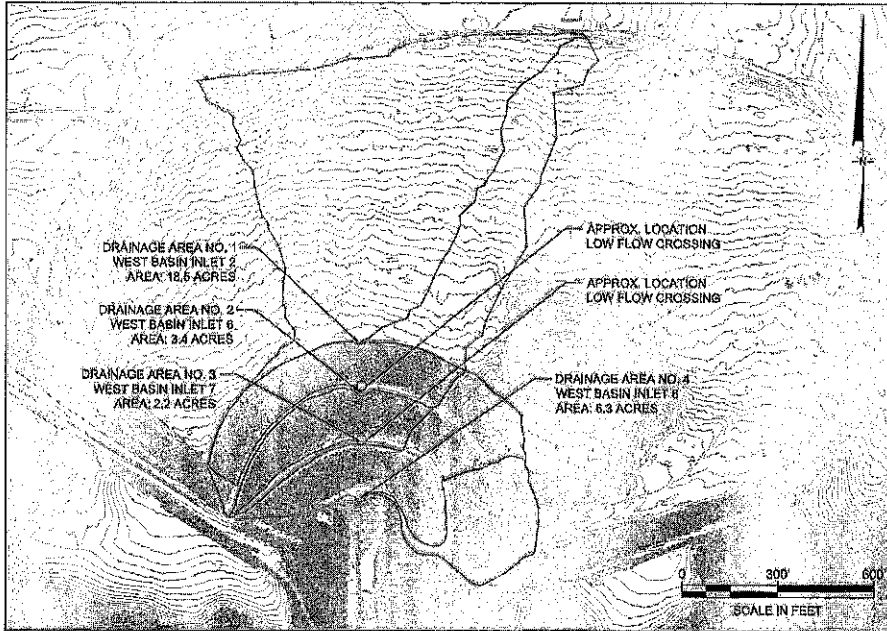


Figure 1: West Basin Delineations

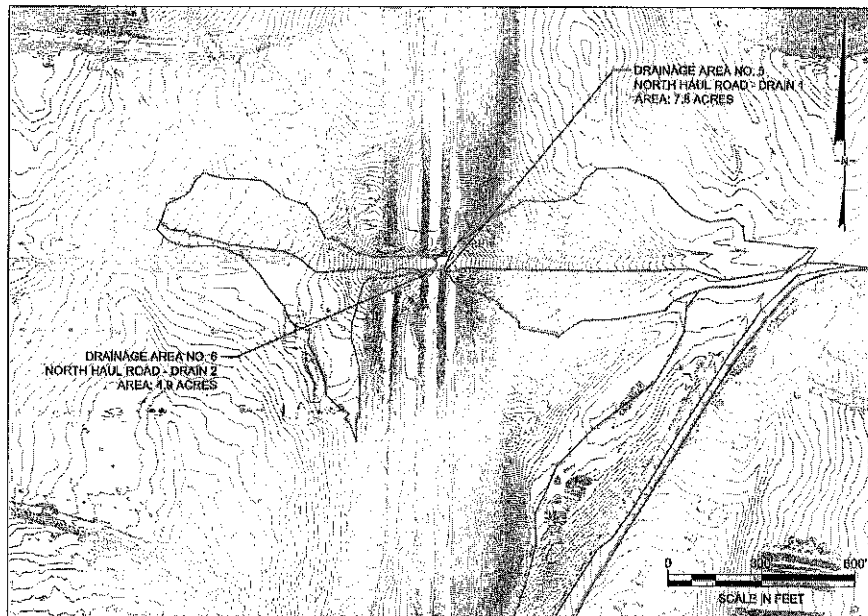


Figure 2: North Haul Road Delineations

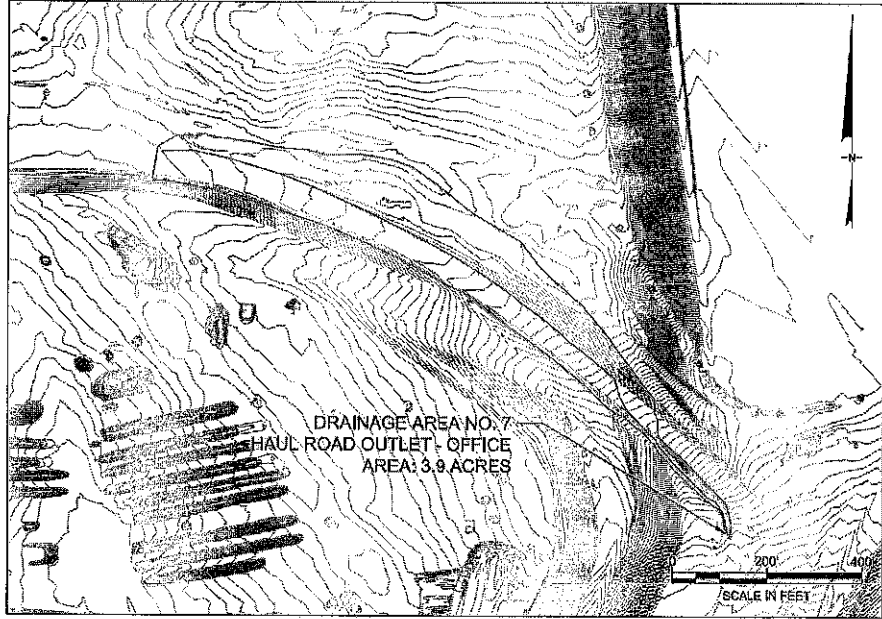


Figure 3: Haul Road Outlet Office Delineation



Figure 4: South Haul Road Delineation

The runoff coefficient (C) for the project site was calculated by methodology found in the San Diego County Hydrology Manual (Section, 2003). The runoff coefficient is the fraction of the rainfall that runs off the surface, and is largely dependent on percent impervious surface. Using Table 3-1 of the San Diego County Hydrology Manual, which provides runoff coefficients for various percentages of imperviousness, and Eq. 2 below, a weighted average runoff coefficient was calculated for each Drainage Area. Coefficients ranged from 0.35 to 0.61 and are shown on Table 1.

$$C = 0.9 \times (\% \text{ impervious}) + C_p \times (1 - \% \text{ impervious}) \quad \text{Eq. 2}$$

Where:

C = runoff coefficient expressed as that percentage of rainfall which becomes surface runoff (unitless)

C_p = pervious coefficient runoff value for the soil type (shown in Table 3-1 in the San Diego County Hydrology Manual as Undisturbed Natural Terrain/Permanent Open, Space, 0% Impervious). 0.35 used for D soil type.

Table 1: Drainage Area and Longest Flow Path

Drainage Area No.	Drainage Area Name	Drainage Area (acres)	Longest Flow Path (feet)	Runoff Coefficient (C)
1	West Basin Inlet 2	18.5	1288	0.35
2	West Basin Inlet 6	3.4	658	0.35
3	West Basin Inlet 7	2.2	471	0.35
4	West Basin Inlet 8	6.3	830	0.35
5	North Haul Road - Drain 1	7.8	1200	0.47
6	North Haul Road - Drain 2	4.9	892	0.51
7	Haul Road Outlet Office	3.9	1509	0.61
8	South Haul Road - Drain 1	8.9	2132	0.55

3.3 TIME OF CONCENTRATION AND RAINFALL INTENSITY (I)

The time of concentration is the time required for runoff to flow from the most remote part of the watershed to the designated outlet. The DDM specifies that the time of concentration for urban drainage systems is the summation of the "inlet time," (Ti), and the "travel time," (Tt). Ti represents the time required for the storm water to flow to the first inlet of the system, or overland flow. Tt represents the flow within a storm drain system and is not applicable to this application. Per the DDM, the overland flow component of inlet time, and for the purpose of this study the Time of Concentration (Tc) may be estimated by use of Eq. 3 below.

$$T_c = \frac{1.8(1.1 - C)\sqrt{D}}{\sqrt[3]{S}} \quad \text{Eq. 3}$$

Where:

- Tc = time of concentration (hours)
- C = runoff coefficient (unitless)
- S = slope (%)
- D = flow path (feet)

Time of Concentration results are summarized in Table 2. Elevations and slopes were obtained via topographic surface data.

Table 2: Time of Concentration

Drainage Area No.	Drainage Area Name	Remote Elevation (ft)	Outfall Elevation (ft)	Slope (%)	Tc (min)
1	West Basin Inlet 2	447	414	2.56	35.4
2	West Basin Inlet 6	405	370	5.32	19.8
3	West Basin Inlet 7	371	330	8.70	14.2
4	West Basin Inlet 8	384	288	11.57	17.2
5	North Haul Road - Drain 1	466	414	4.33	23.9
6	North Haul Road - Drain 2	459	405	6.05	17.3
7	Haul Road Outlet - Office	469	412.03	3.78	21.8
8	South Haul Road - Drain 1	467	408	2.77	32.7

The Time of Concentration was used to determine the rainfall intensity assuming the time of concentration is equal to the duration of rainfall. Rainfall intensity (i) was determined from intensity-duration-frequency (IDF) values for the project site obtained from NOAA Atlas 14, Volume 6, Version 2.3 dataset (NOAA, 2017). Table 3 shows the 100-year intensity durations for the project site, and shows the corresponding linearly-interpolated intensities for the 8 Drainage Areas.

Table 3: NOAA Point Precipitation Frequency Estimates

Duration	100-year Intensity (in/hr)
5	3.77
10	2.71
15	2.18
30	1.50
60	1.06

Table 4: Rainfall Intensity

Drainage Area No.	Drainage Area Name	Duration (i.e. Tc) (min)	100-year Intensity (in/hr)
			100
1	West Basin Inlet 2	35.4	1.42
2	West Basin Inlet 6	19.8	1.96
3	West Basin Inlet 7	14.2	2.26
4	West Basin Inlet 8	17.2	2.08
5	North Haul Road - Drain 1	23.9	1.78
6	North Haul Road - Drain 2	17.3	2.08
7	Haul Road Outlet - Office	21.8	1.87
8	South Haul Road - Drain 1	32.7	1.46

3.4 Calculations and Results

The results of the Rational Method are summarized in Table 5. Peak discharges in Table 5 were used for drainage conveyance hydraulic calculations summarized in Sections 4 and 5.

Table 5: Peak Discharge

Drainage Area No.	Drainage Area Name	Peak Discharge (CFS) 100 Year
1	West Basin Inlet 2	9.21
2	West Basin Inlet 6	2.35
3	West Basin Inlet 7	1.75
4	West Basin Inlet 8	4.57
5	North Haul Road – Drain 1	6.61
6	North Haul Road – Drain 2	5.27
7	Haul Road Outlet – Office	4.50
8	South Haul Road – Drain 1	7.13

4. DRAINAGE CONVEYANCE HYDRAULIC CALCULATIONS

The proposed drainage channels for Drainage Areas 5, 6, 7, and 8 were designed to convey the 100-year flow with a minimum freeboard of 0.5 feet. The Manning's Equation for open channel flow (shown below) was used to estimate velocity and flow depth for the 100 year return interval.

$$Q = \frac{1.486}{n} AR^{2/3} S^{1/2} \quad \text{Eq. 4}$$

Where:

- Q = flow rate (cfs)
- n = Manning's roughness coefficient
- S = channel slope (ft/ft)
- A = wetted area (ft²)
- R = hydraulic radius (ft)

Table 6 presents the channel design parameters for the proposed channels. Table 7 presents flow depth and velocity for the 100-year peak flows (see Attachment A for supporting back-up calculations).

Table 6: Channel Characteristics

Drainage Area No.	Drainage Area Name	Average Channel Slope (ft/ft)	Manning's Roughness Estimated*	Bottom Width (ft)	Top Width (ft)	Approx. Side Slope (H:V)	Channel Depth (ft)
5	North Haul Road - Drain 1	0.073	0.035	3.3	6	1:1	1
6	North Haul Road - Drain 2	0.055	0.035	3.3	6	1:1	1
7	Haul Road Outlet - Office	0.034	0.035	3.3	6	1:1	1
8	South Haul Road - Drain 1	0.039	0.035	3.3	6	1:1	1

* Manning's Roughness Estimated = (0.025 – 0.039 for articulated concrete blocks (Soil Retention, 2017). Value of 0.035 used for analysis.

Table 7: Channel Calculations

Drainage Area No.	Drainage Area Name	100-year	
		Velocity (ft/s)	Flow Depth (ft)
5	North Haul Road - Drain 1	4.8	0.38
6	North Haul Road - Drain 2	6.1	0.25
7	Haul Road Outlet - Office	3.9	0.32
8	South Haul Road - Drain 1	4.3	0.44

5. LOW FLOW CROSSINGS

Two low flow crossings are proposed at locations where run-off discharges into down drains eventually flowing into the West Sediment Basin. These low flow crossings are proposed where the down drain directly discharges across the road (outlet of Drainage Areas 1 and 2). Peak flows from Table 5 were combined to estimate peak flow at the various down drain discharge locations and are presented in Table 8. Table 9 presents down drain characteristics and Table 10 presents the low flow crossing characteristics. Hydraulic calculations were performed for these two low flow crossings using HY-8 Culvert Modeling Software (Federal Highway Administration, 2016) to estimate flow velocities for the 100-year return intervals and are presented on Table 11 (see Attachment B for supporting back-up calculations).

Table 8: Low Flow Crossing / Down Drain Peak Flows

Drainage Area No.	Peak Discharge (CFS) 100 Year
1	9.28
1 and 2	11.62

Table 9: Down Drain Characteristics

Drainage Area No.	Pipe Diameter (ft)	Inlet Elevation (ft)	Outlet Elevation (ft)	Pipe Length (ft)	Ave. Slope (ft/ft)	Manning's Roughness Estimated
1	3	374	374	120	0.36	0.018
1 and 2	3	372	332	120	0.33	0.018

Table 10: Low Flow Crossing Characteristics

Drainage Area No.	Ave. Slope (ft/ft)	Manning's Roughness	Bottom Width (ft)	Top Width (ft)	Channel Depth (ft)
1	0.0231	0.035	10	20	0.5
1 and 2	0.0905	0.035	10	20	0.5

Table 11: Low Flow Crossing Calculations

Drainage Area No.	100-year	
	Pipe Outlet Velocity (ft/s)	Low Flow Velocity (ft/s)
1	25.9	2.5
1 and 2	20.5	4.2

5. ENERGY DISSIPATER CALCULATIONS

Energy dissipaters are required for Drainage Areas 5 and 6. Design velocities for Drainage Areas 5 and 6 were found to be <10 ft/sec. Based on the City of San Diego Standard Drawing SDD-104 and the City of San Diego WhiteBook, the rock classification for the proposed Type 2 energy dissipater is "No. 2 Backing" with a thickness of 1.1 feet for both locations. Table 12 below provides dimensions for the proposed energy dissipaters.

Table 12 : Energy Dissipater

Drainage Area No.	Drainage Area Name	Pipe Dia. or Bottom Width of Channel (ft)	Design Velocity (ft/s)	Dimensions		
				Width (ft)	Length (ft)	Thickness (ft)
5	North Haul Road - Drain 1	2.5	5.2	10	7.5	1.1
6	North Haul Road - Drain 2	3.3	4.2	13.2	9.9	1.1

6. REFERENCES

- City of San Diego. (2017). *Drainage Design Manual*. San Diego. Retrieved from <https://www.sandiego.gov/publicworks/edocrefdrainage>
- Federal Highway Administration. (2016, July). HY-8 Culvert Hydraulic Analysis Program.
- NOAA. (2017, June 23). *NOAA ATLAS 14 POINT PRECIPITATION FREQUENCY ESTIMATES: CA*. Retrieved from National Weather Service: https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html
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- Soil Retention. (2017, 06 23). *Driveable Grass Product Information*. Retrieved from Soil Retention: <http://soilretention.com/drivable-grass/professional/product-info/>

ATTACHMENT A

Drainage Area No.	Drainage Area Name	Critical Depth	Area	R	Slope	Q Geometry	Velocity	Q-Q	Q 100 Year
1	West Basin Inlet 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	West Basin Inlet 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3	West Basin Inlet 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4	West Basin Inlet 6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5	West Basin Inlet 7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6	West Basin Inlet 8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7	Burns & Sons Outlet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8	North Haul Road - Drain 1	0.38	1.4	0.3	0.057	6.6	4.8	0.0	6.6
9	North Haul Road - Drain 2	0.25	0.9	0.2	0.154	5.3	6.1	0.0	5.3
10	Haul Road Outlet - Office	0.32	1.1	0.3	0.048	4.5	3.9	0.0	4.5
11	Upper Greenery Outlet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12	Lower Greenery Outlet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
13	South Haul Road - Drain 1	0.44	1.7	0.4	0.039	7.1	4.3	0.0	7.1
14	Central Basin Inlet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Excel macros iterate critical depth so that Q-Q = 0, using Excel's Goal Seek Program. Q-Q is 'Q geometry' - 'Q 100 Year'

ATTACHMENT B

HY-8 Analysis Results

Culvert Summary Table

Culvert Crossing: Drainage Area 1

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
9.28	9.28	415.02	1.02	0.0*	1-S2n	0.32	0.96	0.32	0.29	25.93	2.47

Culvert Crossing: Drainage Area 1 and 2

Total Discharge (cfs)	Culvert Discharge (cfs)	Headwater Elevation (ft)	Inlet Control Depth(ft)	Outlet Control Depth(ft)	Flow Type	Normal Depth (ft)	Critical Depth (ft)	Outlet Depth (ft)	Tailwater Depth (ft)	Outlet Velocity (ft/s)	Tailwater Velocity (ft/s)
11.62	11.62	373.17	1.17	0.0*	1-S2n	0.36	1.08	0.36	0.23	20.49	4.21

APPENDIX I

PAVEMENT DESIGN CALCULATIONS

**PAVEMENT DESIGN CALCULATIONS
WEST MIRAMAR LANDFILL
SAN DIEGO, CALIFORNIA**

1. INTRODUCTION

The City of San Diego is exploring the possibility of paving the haul road at the West Miramar Landfill leading from the end of the currently paved section to the active waste placement area (Road). This calculation package evaluates possible pavement sections for this road based upon methodologies by the California Department of Transportation (CalTrans), City of San Diego (City), and Tensar International Corporation (Tensar).

2. ASSUMPTIONS

This calculation package assumes an average daily truck traffic of 981 vehicles per day with the landfill operating 365 days a year. All trucks are assumed to be four axle transfer trucks with a gross weight of approximately 80,000 pounds.

The assumed design life of the pavement is two years.

Base materials are assumed to be recycled Class II aggregate base with a minimum R-value of 78. Sub-base materials are assumed to have an R-value greater than 50.

3. LIMITED SERVICE LIFE

Due to expected settlement of the landfill beneath the pavement section, demand on the pavement will be affected by differential settlement in addition to traffic loading. Traditional pavement design methodology does not account for or address differential settlement. This additional demand on the structure may significantly impact the service life of the pavement.

An alternative method to address differential settlement, mechanically stabilized base courses with geosynthetic reinforcement, is available. However, quantitative evaluations of the effectiveness of geosynthetic reinforcement are not available due to limited available case studies and research. It is anticipated that geosynthetic reinforcement will increase the service life of the pavement, but to what extent is not known.

4. CALCULATIONS BY CALTRANS METHODOLOGY

The CalTrans Highway Design Manual [CalTrans, 2016] provides an empirical methodology for designing pavement sections based upon traffic loading and R-value.

4.1 Equivalent Single Axle Loads

From the assumed vehicle weight and number of axles, the load per axle is:

$$\frac{80,000 \text{ lb}}{4 \text{ axles}} = 20,000 \frac{\text{lb}}{\text{axle}}$$

The CalTrans standard Equivalent Single Axle Load is defined based on an 18,000-pound axle load. Therefore, the ESAL per truck can be computed as:

$$20,000 \frac{lb}{axle} \div 18,000 \frac{lb}{axle} \text{ standard load} * 4 \frac{axles}{truck} = 4.4 \text{ ESALs per truck}$$

Total ESALs for the design life of the pavement can be computed as:

$$4.4 \text{ ESAL} * 981 \frac{trucks}{day} * 365 \frac{days}{year} * 2 \text{ year design life} = 3,200,000 \text{ ESALs}$$

4.2 Traffic Index

Traffic Index (TI) is computed based on CalTrans Highway Design Manual (HDM) 613.3(3):

$$TI = 9 * \left(\frac{3,200,000 \text{ ESALs}}{1,000,000} \right)^{0.119} = 10.5$$

Note that for a 10-year design life, the traffic index is 12.5.

5. PAVEMENT SECTION BY CITY OF SAN DIEGO METHODOLOGY

The City provides Pavement Design Standards as Schedule J of the City's standard drawings [City of San Diego, 2016]. Schedule J provides standard pavement sections as a function of street classification, maximum average daily traffic, traffic index, and subgrade R-value. For the Traffic Index of 10.5 and the assumed R-value of 50, the street classification for the Road would be Major (4-Lane). The recommended standard pavement section for this road class is 3.0 inches of asphaltic concrete over 10.0 inches of cement treated base. Alternately, 10.5 inches of asphaltic concrete can be used with no base.

Published gravel factors for cement treated base, aggregate base, and asphalt concrete paving are 1.4, 1.1, and 1.71, respectively [CalTrans, 2000]. Converting the Schedule J pavement section to its gravel equivalent yields and equivalent gravel thickness of 19.1 inches. The proposed section, 4 inches of asphalt concrete over 12 inches of Class II Base, has an equivalent gravel thickness of 20.0 inches. See Table 1 for pavement section equivalency values.

Table 1: Pavement Section Equivalency				
		Thickness (inches)	Gravel Factor	Gravel Equivalent (inches)
Schedule J Section	Asphalt Concrete	3	1.71	5.1
	Cement Treated Base	10	1.4	14.0
	TOTAL GRAVEL EQUIVALENT			19.1
Proposed Section	Asphalt Concrete	4	1.71	6.8
	Class II Base	12	1.1	13.2
	TOTAL GRAVEL EQUIVALENT			20.0

6. CONCLUSION

Based upon the above evaluations, Geosyntec recommends a pavement section consisting of 4 inches of asphalt concrete over 12 inches of CalTrans Class II Aggregate Base. This section

presents a reasonable economy between cost, serviceability, and pavement lifespan. If additional pavement durability and lifespan is desired, alternative pavement sections can be developed incorporating thicker asphalt courses or mechanically stabilized base courses.

7. REFERENCES

American Association of State Highway Transportation Officials (AASHTO), 2014. *Resistance R-Value and Expansion Pressure of Compacted Soils*.

American Association of State Highway Transportation Officials (AASHTO), 1993. *AASHTO Guide for Design of Pavement Structures*.

California Department of Transportation (CalTrans), 2016. *Highway Design Manual*.

California Department of Transportation (CalTrans), 2000. *California Test 301 Method for Determining the R Value of Treated and Untreated Bases, Subbases, and Basement Soils by the Stabilometer*.

City of San Diego, 2016. *Standard Drawings for Public Works Construction*. 2016 Edition. City of San Diego, Public Works Department, Project Implementation Division, Standards and Contract Documents Section.

SWT Engineering, 2016. *Entrance Road Striping Study for the West Miramar Sanitary Landfill*. Report prepared for City of San Diego, May 2016.

Tensar International Corporation, 2014. *SpectraPave4 PRO Software for Subgrade Stabilization Optimization*. Version 4.6.1. January, 2014. www.tensarcorp.com

8. ATTACHMENTS

Attachment 1: Excerpts from CalTrans Highway Design Manual

Attachment 2: San Diego Schedule J

Attachment 3: Laboratory Test Results

ATTACHMENT 1
EXCERPTS FROM CALTRANS HIGHWAY DESIGN
MANUAL

30- and 40-year values by applying the expansion factors.

613.3 Traffic Index Calculation

The Traffic Index (TI) is determined using the following procedures:

(1) *Determine the Projected Equivalent Single Axle Loads (ESALs).* The information obtained from traffic projections and Truck Weight Studies is used to develop 18-kip Equivalent Single Axle Load (ESAL) constants that represent the estimated total accumulated traffic loading for each heavy vehicle (trucks and buses and each of the four truck types during the pavement design life. Typically, buses are assumed to be included in the truck counts due to their relatively low number in comparison to trucks. However, for facilities with high percentage of buses such as high-occupancy vehicle (HOV) lanes and exclusive bus-only lanes, projected bus volumes need to be included in the projection used to determine ESALs. The ESAL constants are used as multipliers of the projected AADTT for each truck type to determine the total cumulative ESALs and in turn the Traffic Index (TI) during the design life for the pavement (see Index 613.3(3)). The ESALs and the resulting TI are the same magnitude for both flexible, rigid, and composite pavement alternatives. The current 10-, 20-, 30-, and 40-year ESAL constants are shown in Table 613.3A.

(2) *Lane Distribution Factors.* Truck/bus traffic on multilane highways normally varies by lane with the lightest volumes generally in the median lanes and heaviest volumes in the outside lanes. Buses are also typically found in HOV lanes. For this reason, the distribution of truck/bus traffic by lanes must be considered in the engineering for all multilane facilities to ensure that traffic loads are appropriately distributed. Because of the uncertainties and the variability of lane distribution of trucks on multilane freeways and expressways, statewide lane distribution factors have been established for pavement engineering of highway facilities in California.

These lane distribution factors are shown in Table 613.3B.

(3) *Traffic Index (TI).* The Traffic Index (TI) is a measure of the number of ESALs expected in the traffic lane over the pavement design life of the facility. The TI does not vary linearly with the ESALs but rather according to the following exponential formula and the values presented in Table 613.3C. The TI is determined to the nearest 0.5.

$$TI = 9.0 \times \left(\frac{ESAL \times LDF}{10^6} \right)^{0.119}$$

Where:

TI = Traffic Index

ESAL = Total number of cumulative 18-kip Equivalent Single Axle Loads

LDF = Lane Distribution Factor (see Table 613.3B)

Index 613.4 contains additional requirements and considerations for determining projected traffic loads.

613.4 Axle Load Spectra

(1) *Development of Axle Load Spectra.* Axle load spectra is an alternative method of measuring heavy vehicle loads that is currently under development for the future mechanistic-empirical design method. Axle load spectra is a representation of normalized axle load distribution developed from weigh-in-motion (WIM) data for each axle type (single, tandem, tridem, and quad) and truck class (FHWA vehicle classes 4 through 13). Axle load spectra do not involve conversion of projected traffic loads into equivalent single axle loads (ESALs), instead traffic load applications for each truck class and axle type are directly characterized by the number of axles within each axle load range.

In order to accurately predict traffic load related damage on a pavement structure, it is important to develop both spatial and temporal axle load spectra for different truck loadings and pavements. The following data is needed to develop axle load spectra:

**Table 613.3A
ESAL Constants**

Vehicle Type (By Axle Classification)	10-Year Constants	20-Year Constants	30-Year Constants	40-Year Constants
2-axle trucks or buses	690	1,380	2,070	2,760
3-axle trucks or buses	1,840	3,680	5,520	7,360
4-axle trucks	2,940	5,880	8,820	11,760
5 or more-axle trucks	6,890	13,780	20,670	27,560

**Table 613.3B
Lane Distribution Factors for Multilane Highways**

Number of Mixed Flow Lanes in One Direction	Factors to be Applied to Projected Annual Average Daily Truck Traffic (AADTT)			
	Mixed Flow Lanes (see Notes 1-6)			
	Lane 1	Lane 2	Lane 3	Lane 4
One	1.0	-	-	-
Two	1.0	1.0	-	-
Three	0.2	0.8	0.8	-
Four	0.2	0.2	0.8	0.8

NOTES:

- Lane 1 is next to the centerline or median.
- For more than four lanes in one direction, use a factor of 0.8 for the outer two lanes plus any auxiliary/collector lanes, use a factor of 0.2 for other mixed flow through lanes.
- For HOV lanes and other inside lanes (non truck lanes), use a factor of 0.2. However, as noted in Index 613.5(1)(b), the TI should not be less than 10 for a 20-year pavement design life, or than 11 for a 40-year pavement design life. Additionally, for freeways and expressways, the maximum TI must not exceed 11 or 12 for a 20-year and 40-year design life, respectively.
- If trucks are permitted to use HOV or other inside lanes, HOV and/or other inside lanes shall be designed to the same standards as found in this table for the outside lanes.
- For lanes devoted exclusively to buses and/or trucks, use a factor of 1.0 based on projected AADTT of mixed-flow lanes for auxiliary and truck lanes, and a separate AADTT based on expected bus traffic for exclusive bus-only lanes.
- The lane distribution factors in this table represent minimum factors and, based on knowledge of local traffic conditions and sound engineering judgment, higher values should be used for specific locations when warranted.

**Table 613.3C
Conversion of ESAL to Traffic Index**

ESAL ⁽¹⁾	TI ⁽²⁾	ESAL ⁽¹⁾	TI ⁽²⁾
4,710		6,600,000	
	5.0		11.5
10,900		9,490,000	
	5.5		12.0
23,500		13,500,000	
	6.0		12.5
47,300		18,900,000	
	6.5		13.0
89,800		26,100,000	
	7.0		13.5
164,000		35,600,000	
	7.5		14.0
288,000		48,100,000	
	8.0		14.5
487,000		64,300,000	
	8.5		15.0
798,000		84,700,000	
	9.0		15.5
1,270,000		112,000,000	
	9.5		16.0
1,980,000		144,000,000	
	10.0		16.5
3,020,000		186,000,000	
	10.5		17.0
4,500,000		238,000,000	
	11.0		17.5 ⁽³⁾
6,600,000		303,000,000	

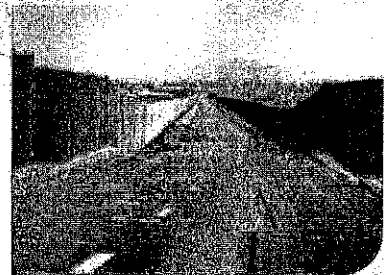
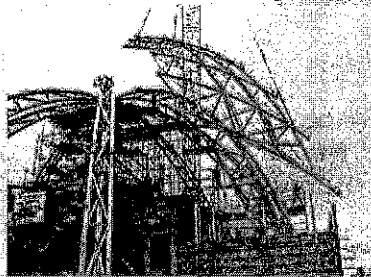
Notes:

- (1) For ESALs less than 5,000 or greater than 300,000,000, use the TI equation to calculate design TI, see Index 613.3(3).
- (2) The determination of the TI closer than 0.5 is not justified. No interpolations should be made.
- (3) For TI's greater than 17.5, use the TI equation, see Index 613.3(3).

ATTACHMENT 2
2016 SAN DIEGO STANDARD DRAWINGS
SCHEDULE J

STANDARD DRAWINGS

For Public Works Construction
2016 Edition



City of San Diego
Standard Drawings
For
Public Works Construction
2016 Edition


Prepared by
Public Works Department
Project Implementation Division
Standards and Contract Documents Section

SCHEDULE "J" PAVEMENT

THE FOLLOWING TABLES ARE TO BE USED TO DETERMINE THE SCHEDULE "J" PAVEMENT DESIGN SECTIONS FOR STREETS, ALLEYS, PARKING LOTS FOR PUBLIC FACILITIES, DRIVEWAYS, AND EASEMENTS, INCLUDING PUBLIC ACCESS EASEMENTS. THESE DESIGNS SHALL BE USED IN THE PUBLIC RIGHT-OF-WAY, OR PRIVATE PROPERTY IN THE AREAS WHERE PUBLIC EASEMENTS ARE GRANTED.

1. RESISTANCE VALUES (R-VALUES) WILL BE DETERMINED FROM SAMPLES TAKEN FROM THE 12" MATERIAL LOCATED IMMEDIATELY BELOW THE FIRST LAYER OF SUBBASE, BASE OR PAVEMENT. THIS 12" SECTION SHALL REPRESENT THE TOP 36 INCHES OF UNIFORM SOILS BELOW THE SUBBASE OR PAVEMENT. IF A LOWER BEARING SOIL IS ENCOUNTERED IN THIS 36" SECTION, THE R-VALUE WILL BE DETERMINED FROM THE LOWEST BEARING SOIL. DETERMINATION OF THE R-VALUE SHALL BE IN ACCORDANCE WITH CALTRANS TEST METHODS 301-F AND 301-G.
2. AVERAGE DAILY TRAFFIC (ADT) IS THE MAXIMUM AVERAGE ANNUAL ADT EXPECTED AT BUILDOUT. FUNCTION SHALL ALSO BE CONSIDERED WHEN DETERMINING THE MINIMUM SCHEDULE "J" PAVEMENT SECTION PER THE ENGINEER.
3. RIGID PAVEMENTS: THE DESIGN THICKNESS SHOWN IN THE TABLES ARE BASED ON A MODIFIED PORTLAND CEMENT ASSOCIATION (PCA) DESIGN. PROJECTS REQUIRING CALTRANS REVIEW SHOULD UTILIZE THE DESIGN METHODS PRESCRIBED IN THE CALTRANS HIGHWAY DESIGN MANUAL.
4. PORTLAND CEMENT CONCRETE (PCC) PAVEMENT SHALL BE CONSTRUCTED IN STREETS ON GRADES GREATER THAN 12.0 PERCENT AND IN ALLEYS AND IN ALLEY INTERSECTIONS. THE PAVEMENT SHALL BE CLASS 560-B-3250 CONCRETE WITH A MINIMUM MODULES OF RUPTURE (MOR) OF 600.
5. NEW PAVEMENT, LESS THAN 6' IN WIDTH, SHALL BE PAVED WITH PORTLAND CEMENT CONCRETE PAVEMENT SECTION NOTED IN SCHEDULE "J" FOR THE STREET CLASSIFICATION PLUS A 1/2" TO 3/4" CLASS F ASPHALT CONCRETE CAP. AN EQUIVALENT SECTION OF LEAN CONCRETE SHALL BE SUBSTITUTED FOR ANY REQUIRED CTB SUBBASE.
6. PERSONNEL FROM THE CITY'S ENGINEERING LABORATORY WILL DESIGNATE WHERE A PRIVATE LABORATORY SHALL SAMPLE FOR R-VALUES.

SHEET 1 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL		M. ROLLINGER	0592	PAVEMENT DESIGN STANDARDS	 1/31/2012
NOTES		G. PARKINSON	0286	SCHEDULE "J"	COORDINATOR R.C.E. 65271 DATE
UPDATED	KA	J. NAGELVOORT	01/12		DRAWING NUMBER SDG-113

STREET CLASSIFICATION	MAX. ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCC (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	50.0 OR GREATER	3.0	5.0	6.0	—	4.5
LOCAL (L.V.R.)	700	5.5		3.0	5.0	6.5	—	5.0
LOCAL (RES.)	1200	6.0		3.0	5.0	6.5	—	5.5
LOCAL (RES.)	2200	6.5		3.0	5.0	6.5	—	6.0
LOCAL (IND.)	2000	8.5		3.0	7.5	7.5	—	8.5
COLLECTOR (RES.)	3500	7.0		3.0	5.0	7.0	—	6.5
COLLECTOR (RES.)	5000	7.5		3.0	5.5	7.0	—	7.5
COLLECTOR (COMM./IND.)	5000	9.5		3.0	8.5	7.5	—	9.0
COLLECTOR (NO FRT)	7500	8.0		3.0	6.5	7.0	—	8.0
COLLECTOR	15000	9.0		3.0	7.5	7.5	—	8.5
MAJOR (4-LANE)	30000	10.5		3.0	10.0	8.0	—	10.5
MAJOR (6-LANE)	40000	11.0		3.5	10.5	8.0	—	11.0
PRIMARY ARTERIAL	50000	11.5		3.5	11.5	8.0	—	11.5
EXPRESSWAY	80000	12.0		3.5	11.5	8.5	—	12.0
EXPRESSWAY	80000	12.5		4.0	12.0	8.5	—	12.5
EXPRESSWAY	100000	13.0		4.0	12.5	9.0	—	13.0

TI = 10.5 and R >= 50

STREET CLASSIFICATION	MAX. ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCC (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	40.0 TO 49.9	3.0	5.0	6.5	—	5.0
LOCAL (L.V.R.)	700	5.5		3.0	5.0	6.5	—	6.0
LOCAL (RES.)	1200	6.0		3.0	5.5	7.0	—	6.5
LOCAL (RES.)	2200	6.5		3.0	6.0	7.0	—	7.0
LOCAL (IND.)	2000	8.5		3.0	9.5	7.5	—	9.5
COLLECTOR (RES.)	3500	7.0		3.0	6.5	7.0	—	8.0
COLLECTOR (RES.)	5000	7.5		3.0	7.5	7.5	—	8.5
COLLECTOR (COMM./IND.)	5000	9.5		3.0	11.0	8.0	—	11.0
COLLECTOR (NO FRT)	7500	8.0		3.0	8.5	7.5	—	9.0
COLLECTOR	15000	9.0		3.0	10.5	8.0	—	10.0
MAJOR (4-LANE)	30000	10.5		3.5	12.5	8.5	—	12.0
MAJOR (6-LANE)	40000	11.0		4.0	12.5	8.5	—	12.5
PRIMARY ARTERIAL	50000	11.5		4.0	13.5	9.0	—	13.0
EXPRESSWAY	60000	12.0		4.5	13.5	9.0	—	13.5
EXPRESSWAY	80000	12.5		4.5	14.5	9.5	—	14.0
EXPRESSWAY	100000	13.0		5.0	15.0	10.0	—	15.0

SHEET 2 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING PAVEMENT DESIGN STANDARDS SCHEDULE "J"	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE <i>[Signature]</i> 1/31/2012 COORDINATOR R.G.E. 65271 DATE
ORIGINAL		M. ROLLINGER	0582		
NOTES		G. PARKINSON	0285		
UPDATED	KA	J. NAGELVOOBT	01/12		
				DRAWING NUMBER	SDG-113

STREET CLASSIFICATION	MAX ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCG (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	36.0 TO 39.9	3.0	5.0	6.5	—	6.0
LOCAL (L.V.R.)	700	5.5		3.0	5.5	7.0	—	6.5
LOCAL (RES.)	1200	6.0		3.0	6.5	7.0	—	7.0
LOCAL (RES.)	2200	6.5		3.0	7.5	7.0	—	8.0
LOCAL (IND.)	2000	8.5		3.0	11.5	8.0	—	10.5
COLLECTOR (RES.)	3500	7.0		3.0	8.5	7.5	—	8.5
COLLECTOR (RES.)	5000	7.5		3.0	9.5	7.5	—	9.0
COLLECTOR (COMM./IND.)	5000	9.5		3.5	13.0	8.5	—	12.0
COLLECTOR (NO FRT)	7500	8.0		3.0	10.5	7.5	—	10.0
COLLECTOR	15000	9.0		3.5	12.0	8.0	—	11.0
MAJOR (4-LANE)	30000	10.5		4.0	14.5	8.5	—	13.5
MAJOR (6-LANE)	40000	11.0		4.5	15.0	9.0	—	14.0
PRIMARY ARTERIAL	50000	11.5		5.0	16.5	9.0	—	14.5
EXPRESSWAY	60000	12.0		5.0	16.5	9.5	—	15.0
EXPRESSWAY	80000	12.5		5.5	17.0	9.5	—	16.0
EXPRESSWAY	100000	13.0		6.0	17.0	10.0	—	17.0

STREET CLASSIFICATION	MAX ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCG (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	20.0 TO 29.9	3.0	5.5	7.0	—	6.5
LOCAL (L.V.R.)	700	5.5		3.0	7.0	7.0	—	7.5
LOCAL (RES.)	1200	6.0		3.0	8.0	7.0	—	8.0
LOCAL (RES.)	2200	6.5		3.0	9.0	7.5	—	8.5
LOCAL (IND.)	2000	8.5		3.5	13.0	8.0	—	11.5
COLLECTOR (RES.)	3500	7.0		3.0	10.0	7.5	—	9.0
COLLECTOR (RES.)	5000	7.5		3.0	11.5	7.5	—	10.0
COLLECTOR (COMM./IND.)	5000	9.5		4.0	15.0	8.5	—	13.0
COLLECTOR (NO FRT)	7500	8.0		3.5	12.0	8.0	—	11.0
COLLECTOR	15000	9.0		4.0	13.5	8.5	—	12.0
MAJOR (4-LANE)	30000	10.5		5.0	16.0	8.5	5.0	14.5
MAJOR (6-LANE)	40000	11.0		5.0	17.0	8.5	5.0	15.5
PRIMARY ARTERIAL	50000	11.5		5.5	17.5	9.0	5.0	16.0
EXPRESSWAY	60000	12.0		6.0	18.0	9.0	5.0	17.0
EXPRESSWAY	80000	12.5		6.0	19.5	8.5	5.0	17.5
EXPRESSWAY	100000	13.0		6.5	20.0	10.0	5.0	18.5

SHEET 3 OF 4

REVISION	BY	APPROVED	DATE
ORIGINAL		M. ROLLINGER	05/02
NOTES		G. PARKINSON	02/05
UPDATED	KA	J. NAGELVOORT	01/12

CITY OF SAN DIEGO - STANDARD DRAWING

**PAVEMENT DESIGN STANDARDS
SCHEDULE "J"**


RECOMMENDED BY THE CITY OF SAN DIEGO
STANDARDS COMMITTEE
H. Hasli
COORDINATOR R.C.E. 65271 DATE 1/31/2012

DRAWING NUMBER **SDG-113**

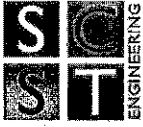
STREET CLASSIFICATION	MAX ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCC (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	10.0 TO 19.9	3.0	7.0	7.0	—	7.5
LOCAL (L.V.R.)	700	5.5		3.0	8.0	7.0	—	8.0
LOCAL (RES.)	1200	6.0		3.0	9.0	7.5	—	8.5
LOCAL (RES.)	2200	6.5		3.0	10.5	7.5	—	9.0
LOCAL (IND.)	2000	8.5		4.0	14.5	8.0	5.0	12.5
COLLECTOR (RES.)	3500	7.0		3.0	12.0	7.5	—	10.0
COLLECTOR (RES.)	5000	7.5		3.5	12.5	8.0	—	11.0
COLLECTOR (COMM./IND.)	5000	9.5		4.5	16.5	8.5	5.0	14.0
COLLECTOR (NO FRT)	7500	8.0		3.5	14.0	8.0	—	11.5
COLLECTOR	15000	9.0		4.5	15.0	8.0	5.0	13.0
MAJOR (4-LANE)	30000	10.5		5.5	18.0	8.5	6.0	15.5
MAJOR (6-LANE)	40000	11.0		6.0	18.5	9.0	6.0	16.5
PRIMARY ARTERIAL	50000	11.5		6.0	20.0	9.0	6.0	17.5
EXPRESSWAY	60000	12.0		6.5	20.5	9.0	6.0	18.5
EXPRESSWAY	80000	12.5		7.0	21.5	9.5	6.0	19.0
EXPRESSWAY	100000	13.0		7.5	22.5	10.0	6.0	20.0

STREET CLASSIFICATION	MAX ADT	MAX TRAFFIC INDEX	"R" VALUE	STANDARD SECTIONS		CONCRETE M.O.R. 600 MIN		FULL DEPTH A.C. (IN)
				A.C. (IN)	CTB (IN)	PCC (IN)	CTB (IN)	
CUL-DE-SAC	200	5.0	0.0 TO 9.9	9.0	8.0	7.0	—	8.5
LOCAL (L.V.R.)	700	5.5		9.0	9.5	7.5	—	9.0
LOCAL (RES.)	1200	6.0		3.0	10.5	7.5	—	9.5
LOCAL (RES.)	2200	6.5		3.0	12.5	7.5	—	10.5
LOCAL (IND.)	2000	8.5		4.5	16.0	8.0	5.0	14.0
COLLECTOR (RES.)	3500	7.0		3.5	13.0	7.5	—	11.5
COLLECTOR (RES.)	5000	7.5		3.5	14.5	8.0	—	12.5
COLLECTOR (COMM./IND.)	5000	9.5		5.0	18.5	8.5	6.0	15.5
COLLECTOR (NO FRT)	7500	8.0		4.0	15.5	8.0	5.0	13.0
COLLECTOR	15000	9.0		6.0	17.0	8.5	5.0	14.5
MAJOR (4-LANE)	30000	10.5		6.0	20.0	9.0	6.0	17.5
MAJOR (6-LANE)	40000	11.0		6.5	21.0	9.0	6.0	18.5
PRIMARY ARTERIAL	50000	11.5		7.0	22.0	9.0	6.0	19.5
EXPRESSWAY	60000	12.0		7.0	23.0	9.5	6.0	20.5
EXPRESSWAY	80000	12.5		7.5	24.0	10.0	6.0	21.5
EXPRESSWAY	100000	13.0		8.0	25.0	10.5	6.0	22.0

SHEET 4 OF 4

REVISION	BY	APPROVED	DATE	CITY OF SAN DIEGO - STANDARD DRAWING	RECOMMENDED BY THE CITY OF SAN DIEGO STANDARDS COMMITTEE
ORIGINAL		M. ROLLINGER	05/02		
NOTES		G. PARKINSON	02/05		
UPDATED		KA. J. NAGELVOORT	01/12		
PAVEMENT DESIGN STANDARDS SCHEDULE "J"				 COORDINATOR R.O.E. 88271 DATE 1/31/2012	
				DRAWING NUMBER SDG-113	

ATTACHMENT 3
LABORATORY TEST RESULTS



R-Value
Cal 301, ASTM D2844

Report Date: 6/30/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:
150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

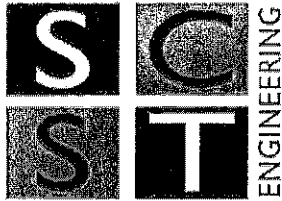
If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.
See R-Value 20171.pdf in the documents section at the end of this report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.



SDVOSB . DVBE . SBE

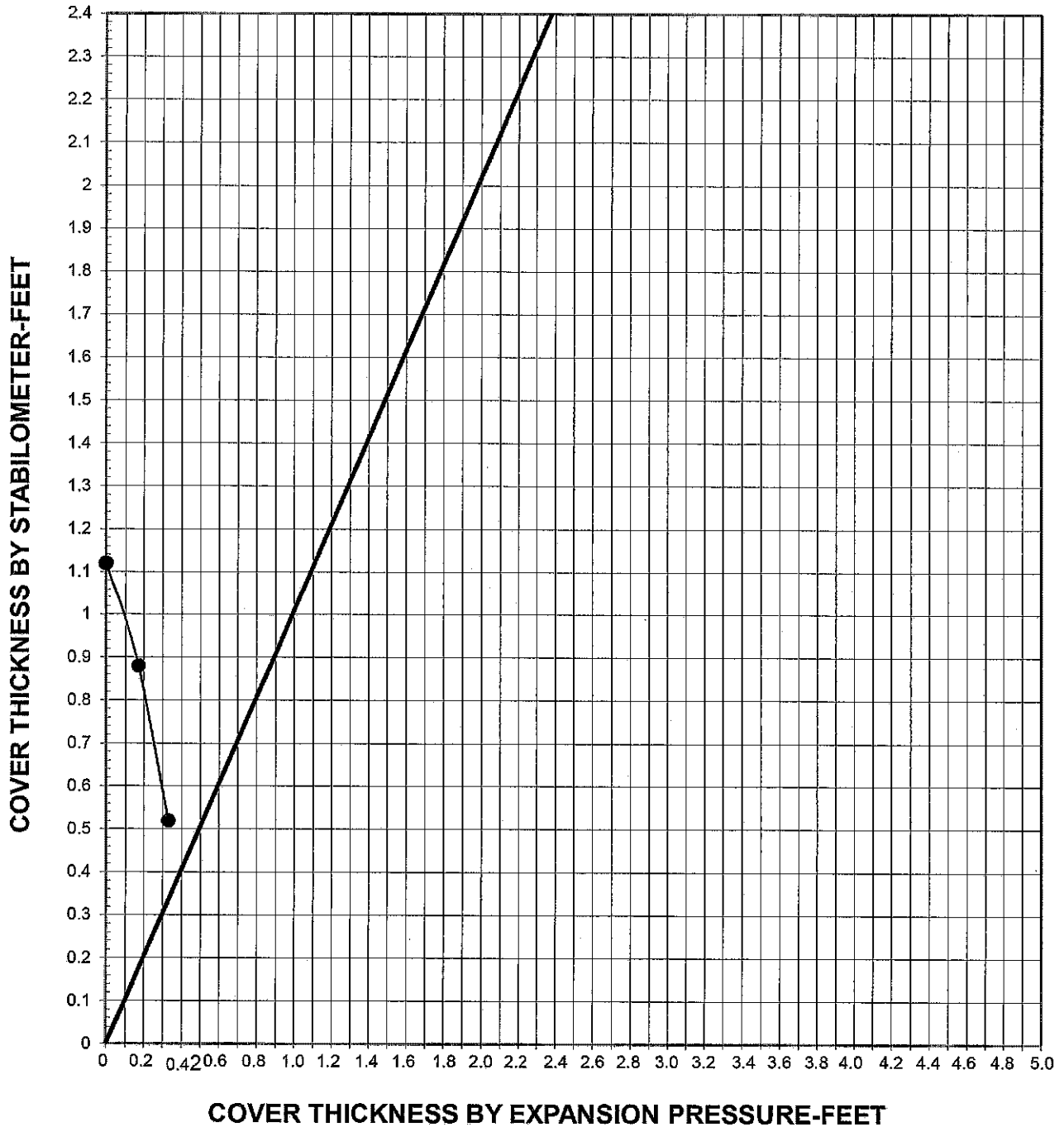
Corporate Headquarters
 6280 Riverdale Street
 San Diego, CA 92120
 P 619.280.4321
 T 877.215.4321
 F 619.280.4717
 W www.scsst.com


Job Name: Miramar Access Road Paving Job Number: 150140N.8
 Client: Geosyntec Consultants Location: Miramar Rd
 Date: 6/28/2017 By: DRB
 Sample I.D.: TP1 Sub Base
 Description: Light Brown Clayey Sand with Gravel

CTM 301 Resistance Value of Treated and Untreated Bases, Subbases and Basement Soils

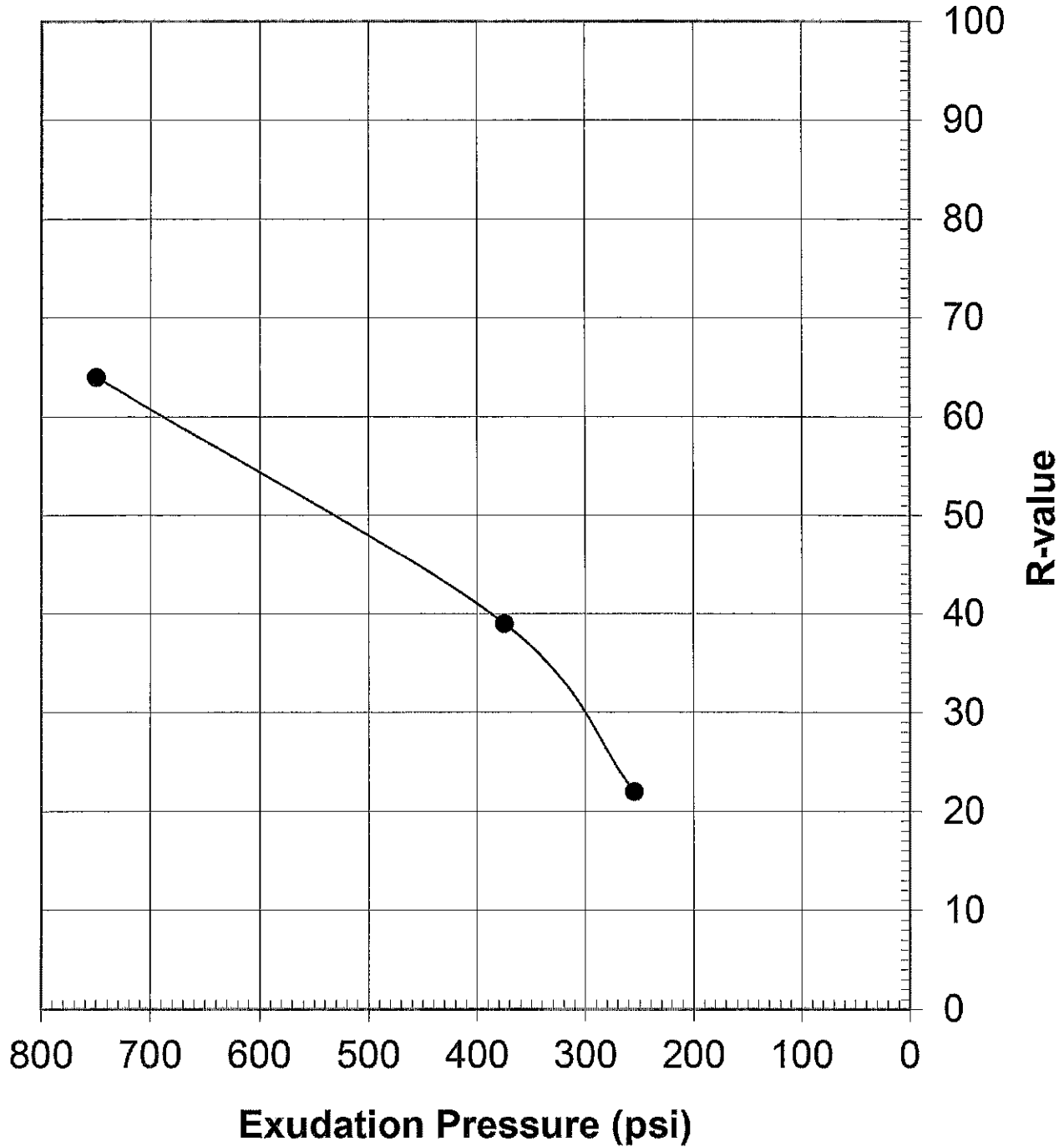
Test Specimen		A	B	C	D
Date Tested		6/28/2017	6/28/2017	6/28/2017	
Compactor Air Pressure	PSI	165	260	350	
Initial Moisture	%	3.8	3.8	3.8	
Soil Wt. Added	GRAMS	1070	1080	1090	
Water Added	ML	80	70	64	
Water Added	%	7.8	6.7	6.1	
Moisture At Compaction	%	11.6	10.5	9.9	
Weight of Briquette & Tare	GRAMS	3201	3188	3205	
Net Weight of Briquette	GRAMS	1147	1147	1150	
Briquette Height	IN	2.5	2.49	2.49	
Density	PCF	124.6	126.3	127.3	
Exudation Pressure	PSI	255	375	750	
Expansion Pressure	PSF	0	22	43	
PH at 1000 Pounds	PSI	49	34	23	
PH at 2000 Pounds	PSI	114	84	48	
Displacement	Turns	3.60	3.50	3.30	
R' Value		22	39	64	
Stabilometer Thickness	FT	1.12	0.88	0.52	
Expansion Thickness	FT	0	0.17	0.33	
Expansion Dial Reading		0000	0005	0010	
R' Value Modifier		0	0	0	
Corrected R-Value		22	39	64	
R-Value by Exudation Pressure			30		
Gravel Equivalent		0.38	0.38	0.38	
Traffic Index		4.5	4.5	4.5	
R-Value by Expansion Pressure			74		
R-Value at Equivalent			30		


EXPANSION PRESSURE CHART

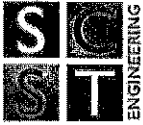


 <p>SOUTHERN CALIFORNIA SOIL AND TESTING, INC.</p>	Job Name: Miramar Access Road Paving	
	By: DRB	Date: 6/28/2017
	Job No.: 150140N.8	Sample No.: TP1 Sub Base
	Gravel Equ: 0.38	Plate No.:

R-value By Exudation Pressure



 SOUTHERN CALIFORNIA SOIL AND TESTING, INC.	Job Name: Miramar Access Road Paving	
	By: DRB	Date: 6/28/2017
	Job No.: 150140N.8	Sample No.: TP1 Sub Base
	R-Value by Ex.: 30	Plate No.:



R-Value
Cal 301, ASTM D2844

Report Date: 6/30/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:
150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

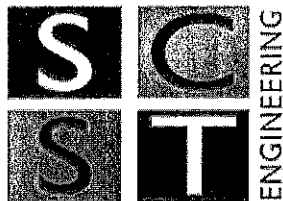
If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.
See R-Value 20172.pdf in the documents section at the end of this report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.



SDVOSB . DVBE . SBE

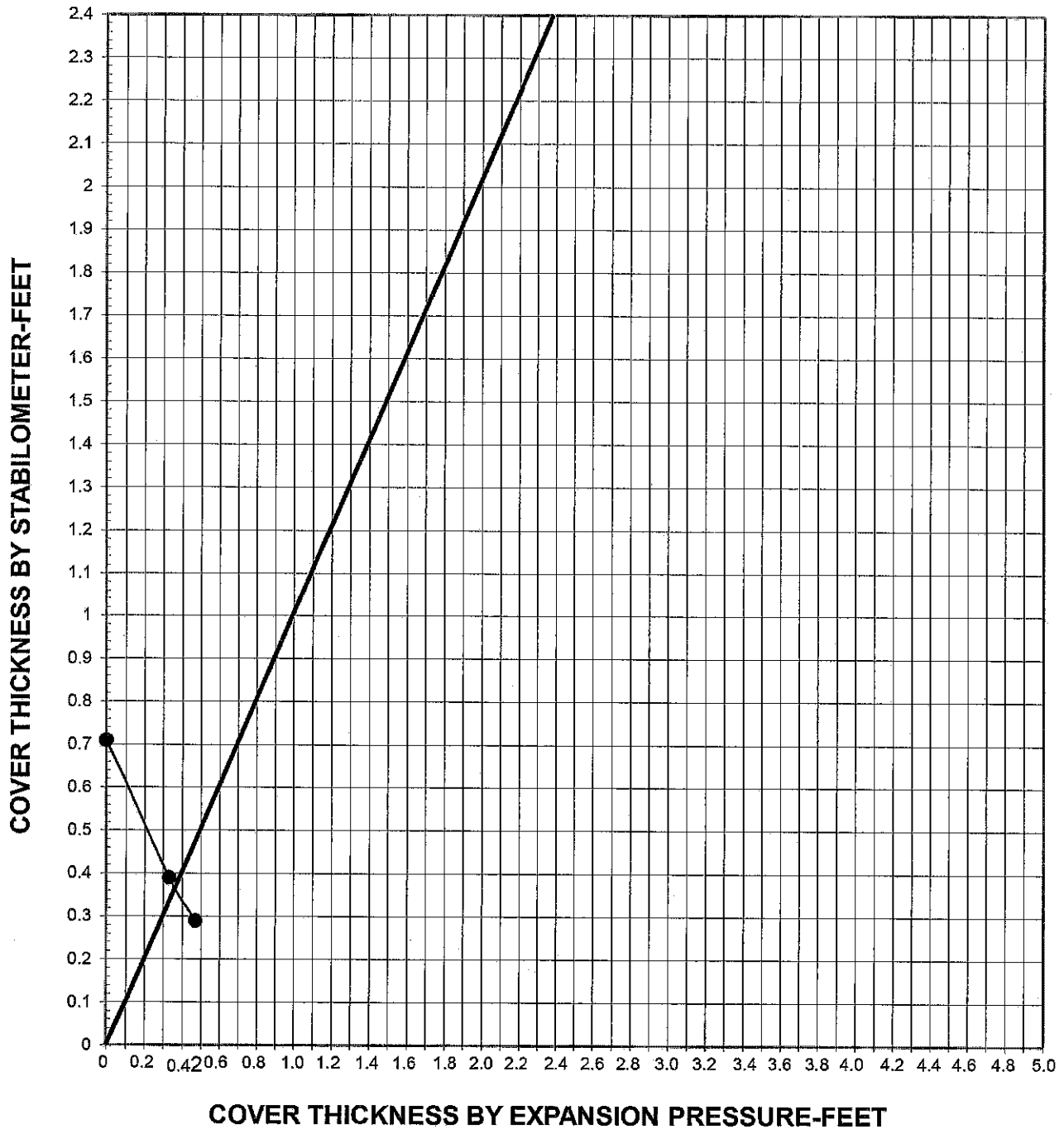
Corporate Headquarters
 6280 Riverdale Street
 San Diego, CA 92120
 P 619.280.4321
 T 877.215.4321
 F 619.280.4717
 W www.scsel.com

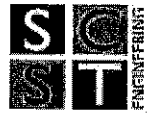
Job Name: Miramar Access Road Paving Job Number: 150140N.8
 Client: Geosyntec Consultants Location: Miramar Rd
 Date: 6/28/2017 By: DRB
 Sample I.D.: TP3 Sub Base
 Description: Brown Sand with Gravel

CTM 301 Resistance Value of Treated and Untreated Bases, Subbases and Basement Soils

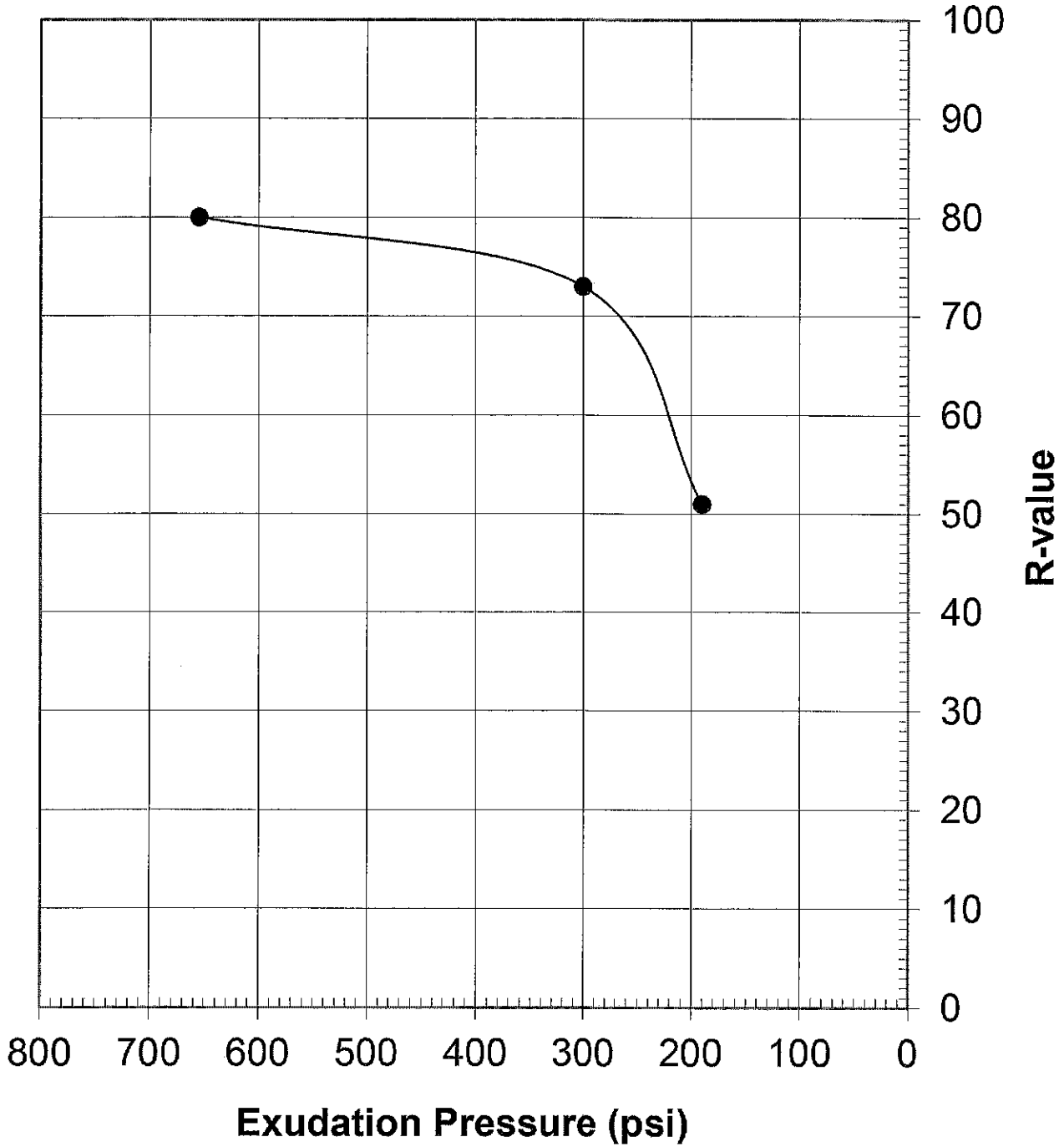
Test Specimen		A	B	C	D
Date Tested		6/28/2017	6/28/2017	6/28/2017	
Compactor Air Pressure	PSI	350	350	350	
Initial Moisture	%	3.7	3.7	3.7	
Soil Wt. Added	GRAMS	1070	1040	1070	
Water Added	ML	60	68	55	
Water Added	%	5.8	6.8	5.3	
Moisture At Compaction	%	9.5	10.5	9	
Weight of Briquette & Tare	GRAMS	3206	3215	3235	
Net Weight of Briquette	GRAMS	1124	1101	1119	
Briquette Height	IN	2.54	2.46	2.52	
Density	PCF	122.5	122.7	123.4	
Exudation Pressure	PSI	300	190	655	
Expansion Pressure	PSF	43	0	61	
PH at 1000 Pounds	PSI	15	28	13	
PH at 2000 Pounds	PSI	28	56	21	
Displacement	Turns	4.25	4.50	4.10	
R' Value		73	51	80	
Stabilometer Thickness	FT	0.39	0.71	0.29	
Expansion Thickness	FT	0.33	0	0.47	
Expansion Dial Reading		0010	0000	0014	
R' Value Modifier		0	0	0	
Corrected R-Value		73	51	80	
R-Value by Exudation Pressure			73		
Gravel Equivalent		0.36	0.36	0.36	
Traffic Index		4.5	4.5	4.5	
R-Value by Expansion Pressure			75		
R-Value at Equivalent			73		


EXPANSION PRESSURE CHART

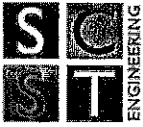


 <p>SOUTHERN CALIFORNIA SOIL AND TESTING, INC.</p>	Job Name: Miramar Access Road Paving	
	By: DRB	Date: 6/28/2017
	Job No.: 150140N.8	Sample No.: TP3 Sub Base
	Gravel Equ: 0.36	Plate No.:

R-value By Exudation Pressure



 SOUTHERN CALIFORNIA SOIL AND TESTING, INC.	Job Name: Miramar Access Road Paving	
	By: DRB	Date: 6/28/2017
	Job No.: 150140N.8	Sample No.: TP3 Sub Base
	R-Value by Ex.: 73	Plate No.:



R-Value
Cal 301, ASTM D2844

Report Date: 6/30/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:
150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

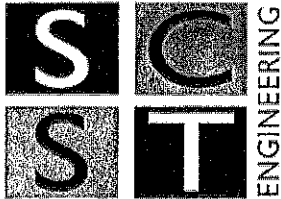
If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.
See R-Value 20173.pdf in the documents section at the end of this report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.



SDVOSB, DYBE, SBE

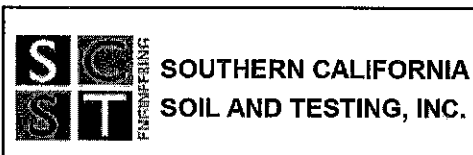
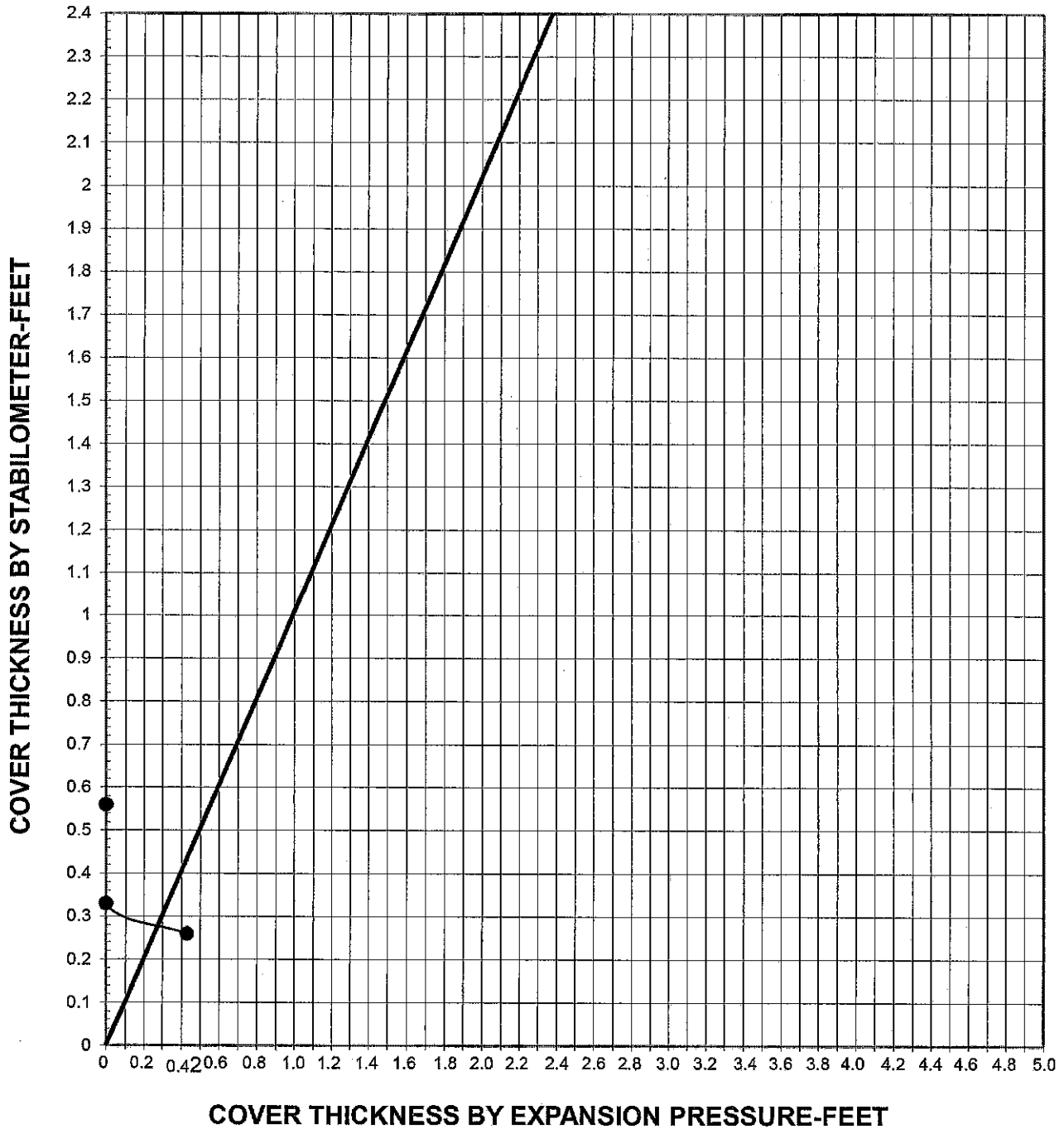
Corporate Headquarters
 6280 Riverdale Street
 San Diego, CA 92120
 P 619.280.4321
 T 877.215.4321
 F 619.280.4717
 W www.scst.com

Job Name: Miramar Access Road Paving Job Number: 150140N.8
 Client: Geosyntec Consultants Location: Miramar Rd
 Date: 6/28/2017 By: DRB
 Sample I.D.: TP4 Sub Base
 Description: Brown Silty Sand with Gravel

CTM 301 Resistance Value of Treated and Untreated Bases, Subbases and Basement Soils

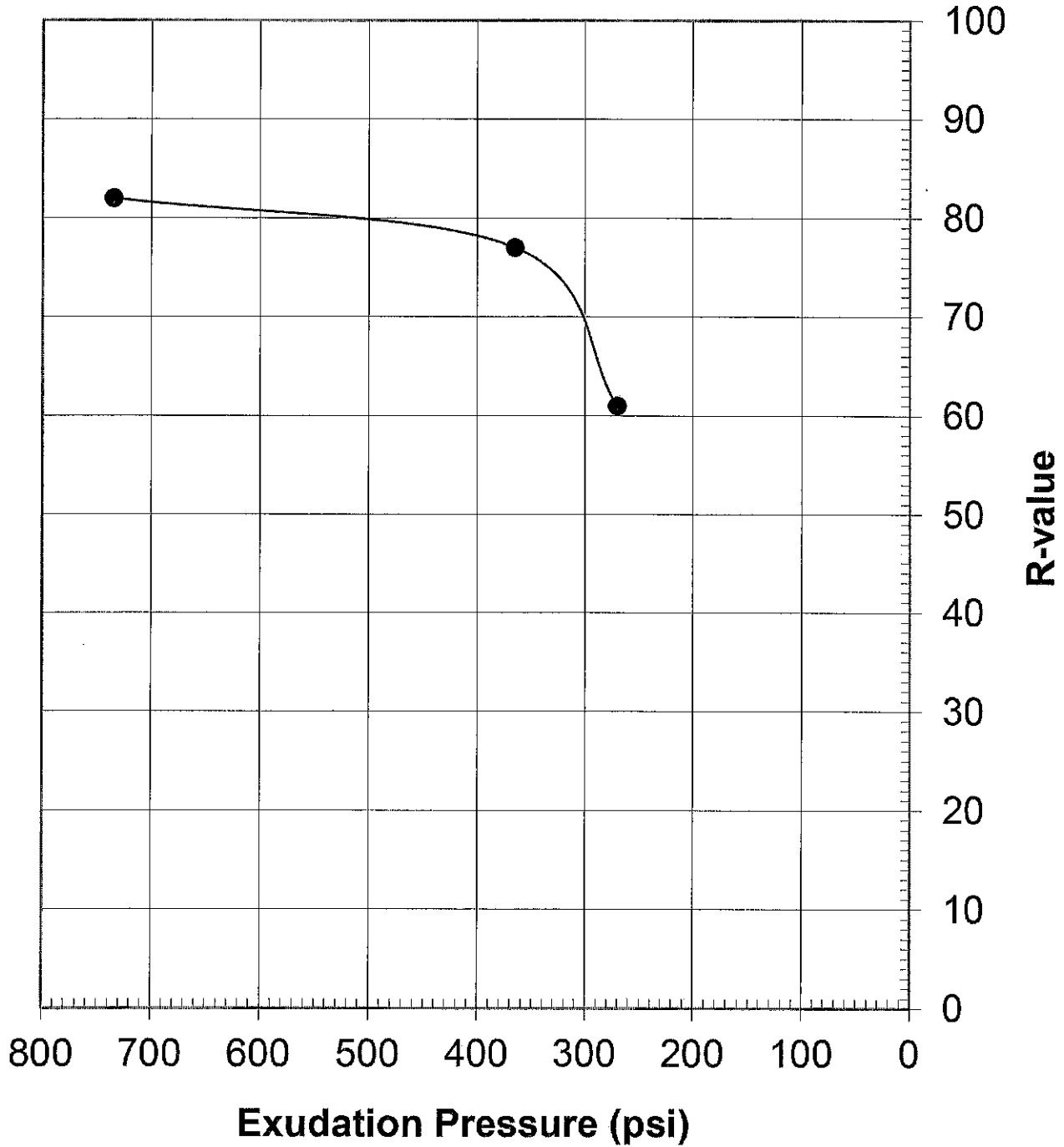
Test Specimen		A	B	C	D
Date Tested		6/28/2017	6/28/2017	6/28/2017	
Compactor Air Pressure	PSI	350	350	350	
Initial Moisture	%	2.9	2.9	2.9	
Soil Wt. Added	GRAMS	1060	1070	1070	
Water Added	ML	70	62	56	
Water Added	%	6.8	6	5.4	
Moisture At Compaction	%	9.7	8.9	8.3	
Weight of Briquette & Tare	GRAMS	3240	3241	3234	
Net Weight of Briquette	GRAMS	1121	1125	1118	
Briquette Height	IN	2.46	2.5	2.46	
Density	PCF	125.9	125.2	127.2	
Exudation Pressure	PSI	270	365	735	
Expansion Pressure	PSF	0	0	56	
PH at 1000 Pounds	PSI	22	14	13	
PH at 2000 Pounds	PSI	45	25	20	
Displacement	Turns	4.10	4.00	3.90	
R' Value		61	77	82	
Stabilometer Thickness	FT	0.56	0.33	0.26	
Expansion Thickness	FT	0	0	0.43	
Expansion Dial Reading		0000	0000	0013	
R' Value Modifier		0	0	0	
Corrected R-Value		61	77	82	
R-Value by Exudation Pressure			70		
Gravel Equivalent		0.27	0.27	0.27	
Traffic Index		4.5	4.5	4.5	
R-Value by Expansion Pressure			81		
R-Value at Equivalent			70		


EXPANSION PRESSURE CHART



Job Name: Miramar Access Road Paving	
By: DRB	Date: 6/28/2017
Job No.: 150140N.8	Sample No.: TP4 Sub Base
Gravel Equ: 0.27	Plate No.:

R-value By Exudation Pressure



 SOUTHERN CALIFORNIA SOIL AND TESTING, INC.	Job Name: Miramar Access Road Paving	
	By: DRB	Date: 6/28/2017
	Job No.: 150140N.8	Sample No.: TP4 Sub Base
	R-Value by Ex.: 70	Plate No.:



Sand Equivalent

Cal 217, ASTM D2419

Report Date: 6/29/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:

Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:

150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

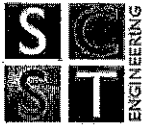
If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

Job Name: Miramar Access Road Paving
Job Number: 150140N.8 Sample: 20171
Location: Miramar Rd TP1 Sub Base
Date Sampled: June 19, 2017 Tested By: DRB

Cal-Test 217 Sand Equivalent

Sand Equivalent **16**



Sand Equivalent

Cal 217, ASTM D2419

Report Date: 6/28/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:

Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:

150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

Job Name: Miramar Access Road Paving
Job Number: 150140N.8 Sample: 20172
Location: Miramar Rd TP3 Sub Base
Date Sampled: June 19, 2017 Tested By: DRB

Cal-Test 217 Sand Equivalent

Sand Equivalent 41



Sand Equivalent

Cal 217, ASTM D2419

Report Date: 6/28/2017

SCST Inc. - San Diego
LEA: 47, Exp: 07/25/2017
6280 Riverdale Street
San Diego, CA 92120
Phone: (619) 280-4321
Fax: (619) 280-4717

Client:
Geosyntec Consultants
11305 Rancho Bernardo Road, # 200
San Diego, CA 92127-1461

Project:
150140N.8
Miramar Access Road Paving - Geosyntec
Consultants Inc.
5180 Convoy Street San Diego CA 92111

In accordance with your request, SCST has performed the subject laboratory testing. Test results are presented in the attached report.

If you have any additional questions or concerns, please contact us at 619.280.4321

Respectfully Submitted,
SCST, Inc.

Job Name: Miramar Access Road Paving
Job Number: 150140N.8 Sample: 20173
Location: Miramar Rd TP4 Sub Base
Date Sampled: June 19, 2017 Tested By: DRB

Cal-Test 217 Sand Equivalent

Sand Equivalent **45**

ATTACHMENT F
INTENTIONALLY LEFT BLANK

ATTACHMENT G
CONTRACT AGREEMENT

CONTRACT AGREEMENT

CONSTRUCTION CONTRACT

This contract is made and entered into between THE CITY OF SAN DIEGO, a municipal corporation, herein called "City", and **RAL Investment, Corp. dba Silverstrand Construction**, herein called "Contractor" for construction of **Miramar Landfill Storm Water Improvements** ; Bid No. **K-18-1599-DBB-3**; in the amount of **Three Million Three Hundred Ninety Seven Thousand Two Hundred and Six Dollars and Eighty Cents (\$3,397,206.80)**, which is comprised of the Base Bid plus Alternate A.

IN CONSIDERATION of the payments to be made hereunder and the mutual undertakings of the parties hereto, City and Contractor agree as follows:

1. The following are incorporated into this contract as though fully set forth herein:
 - (a) The attached Faithful Performance and Payment Bonds.
 - (b) The attached Proposal included in the Bid documents by the Contractor.
 - (c) Reference Standards listed in the Instruction to Bidders and the Supplementary Special Provisions (SSP).
 - (d) That certain documents entitled **Miramar Landfill Storm Water Improvements**, on file in the office of the Public Works Department as Document No. **S-16054**, as well as all matters referenced therein.
2. The Contractor shall perform and be bound by all the terms and conditions of this contract and in strict conformity therewith shall perform and complete in a good and workmanlike manner **Miramar Landfill Storm Water Improvements**. Bid No. **K-18-1599-DBB-3**, San Diego, California.
3. For such performances, the City shall pay to Contractor the amounts set forth at the times and in the manner and with such additions or deductions as are provided for in this contract, and the Contractor shall accept such payment in full satisfaction of all claims incident to such performances.
4. No claim or suit whatsoever shall be made or brought by Contractor against any officer, agent, or employee of the City for or on account of anything done or omitted to be done in connection with this contract, nor shall any such officer, agent, or employee be liable hereunder.
5. This contract is effective as of the date that the Mayor or designee signs the agreement.

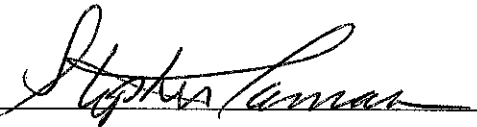
CONTRACT AGREEMENT (continued)

IN WITNESS WHEREOF, this Agreement is signed by the City of San Diego, acting by and through its Mayor or designee, pursuant to Municipal Code §22.3102 authorizing such execution.

THE CITY OF SAN DIEGO

APPROVED AS TO FORM

Mara W. Elliott, City Attorney

By 

By 

Print Name: Stephen Samara
Principal Contract Specialist
Public Works Department

Print Name: Amanda Guy
Deputy City Attorney

Date: 1-26-2018

Date: 2/9/18

CONTRACTOR Rita Investment Corporation

By 

Print Name: Alex Lopez, CFO

Title: CFO

Date: 12/13/2017

City of San Diego License No.: B2001006925

State Contractor's License No.: 927409

DEPARTMENT OF INDUSTRIAL RELATIONS (DIR) REGISTRATION NUMBER: 1000016529

CERTIFICATIONS AND FORMS

The Bidder, by submitting its electronic bid, agrees to and certifies under penalty of perjury under the laws of the State of California, that the certifications, forms and affidavits submitted as part of this bid are true and correct.

Bidder's General Information

To the City of San Diego:

Pursuant to "Notice Inviting Bids", specifications, and requirements on file with the City Clerk, and subject to all provisions of the Charter and Ordinances of the City of San Diego and applicable laws and regulations of the United States and the State of California, the undersigned hereby proposes to furnish to the City of San Diego, complete at the prices stated herein, the items or services hereinafter mentioned. The undersigned further warrants that this bid is not made in the interest of, or on behalf of, any undisclosed person, partnership, company, association, organization, or corporation; that the bid is genuine and not collusive or sham; that the bidder has not directly or indirectly induced or solicited any other bidder to put in a false or sham bid, and has not directly or indirectly colluded, conspired, connived, or agreed with any bidder or anyone else to put in a sham bid, or that anyone shall refrain from bidding; that the bidder has not in any manner, directly or indirectly, sought by agreement, communication, or conference with anyone to fix the bid price of the bidder or any other bidder, or to fix any overhead, profit, or cost element of the bid price, or of that of any other bidder, or to secure any advantage against the public body awarding the contract of anyone interested in the proposed contract; that all statements contained in the bid are true; and, further, that the bidder has not, directly or indirectly, submitted his or her bid price or any breakdown thereof, or the contents thereof, or divulged information or data relative thereto, or paid, and will not pay, any fee to any corporation, partnership, company, association, organization, bid depository, or to any member or agent thereof to effectuate a collusive or sham bid.

The undersigned bidder(s) further warrants that bidder(s) has thoroughly examined and understands the entire Contract Documents (plans and specifications) and the Bidding Documents therefore, and that by submitting said Bidding Documents as its bid proposal, bidder(s) acknowledges and is bound by the entire Contract Documents, including any addenda issued thereto, as such Contract Documents incorporated by reference in the Bidding Documents.

**NON-COLLUSION AFFIDAVIT TO BE EXECUTED BY BIDDER AND SUBMITTED WITH BID UNDER 23
UNITED STATES CODE 112 AND PUBLIC CONTRACT CODE 7106**

State of California

County of San Diego

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

CONTRACTOR CERTIFICATION

DRUG-FREE WORKPLACE

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-17 regarding Drug-Free Workplace as outlined in the WHITEBOOK, Section 7-13.3, "Drug-Free Workplace", of the project specifications, and that;

This company has in place a drug-free workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of subdivisions a) through c) of the policy as outlined.

CONTRACTOR CERTIFICATION

AMERICAN WITH DISABILITIES ACT (ADA) COMPLIANCE CERTIFICATION

I hereby certify that I am familiar with the requirements of San Diego City Council Policy No. 100-4 regarding the American With Disabilities Act (ADA) outlined in the WHITEBOOK, Section 7-13.2, "American With Disabilities Act", of the project specifications, and that:

This company has in place workplace program that complies with said policy. I further certify that each subcontract agreement for this project contains language which indicates the subcontractor's agreement to abide by the provisions of the policy as outlined.

CONTRACTOR CERTIFICATION

CONTRACTOR STANDARDS – PLEDGE OF COMPLIANCE

I declare under penalty of perjury that I am authorized to make this certification on behalf of the company submitting this bid/proposal, that as Contractor, I am familiar with the requirements of City of San Diego Municipal Code § 22.3004 regarding Contractor Standards as outlined in the WHITEBOOK, Section 7-13.4, ("Contractor Standards"), of the project specifications, and that Contractor has complied with those requirements.

I further certify that each of the Contractor's subcontractors whose subcontracts are greater than \$50,000 in value has completed a Pledge of Compliance attesting under penalty of perjury of having complied with City of San Diego Municipal Code § 22.3004.

CONTRACTOR CERTIFICATION

Equal Benefits Ordinance Certification

I declare under penalty of perjury that I am familiar with the requirements of and in compliance with the City of San Diego Municipal Code § 22.4300 regarding Equal Benefits Ordinance.

LIST OF SUBCONTRACTORS

In accordance with the requirements of the "Subletting and Subcontracting Fair Practices Act", Section 4100, of the California Public Contract Code (PCC), the Bidder is to list below the name, address and license number of each Subcontractor who will perform work, labor, render services or specially fabricate and install a portion [type] of the work or improvement, in an amount of or in excess of 0.5% of the Contractor's total Bid. Failure to comply with this requirement may result in the Bid being rejected as non-responsive. The Contractor is to list only one Subcontractor for each portion of the Work. The Bidder's attention is directed to the Special Provisions - General; Paragraph 2-3 Subcontracts, which stipulates the percentage of the Work to be performed with the Bidder's own forces. The Bidder is to also list all SLBE, ELBE, DBE, DVBE, MBE, WBE, OBE, SDB, WoSB, HUBZone, and SDVOSB Subcontractors for which the Bidders are seeking recognition towards achieving any mandatory, voluntary, or both subcontracting participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACTOR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB	WHERE CERTIFIED	CHECK IF JOINT VENTURE PARTNERSHIP
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____							

- ① As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Subcontractor is certified by:
- | | | | |
|--|------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | State of California's Department of General Services | CADoGS |
| City of Los Angeles | LA | State of California | CA |
| U.S. Small Business Administration | SBA | | |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

NAMED EQUIPMENT/MATERIAL SUPPLIER LIST

The Bidder seeking the recognition of equipment, materials, or supplies obtained from Suppliers towards achieving any mandatory, voluntary, or both subcontracting participation percentages is to list the Supplier(s) on the Named Equipment/Material Supplier List. The Named Equipment/Material Supplier List, at a minimum, is to have the name, locations (City) and the **DOLLAR VALUE** of the Suppliers. The Bidder will be credited up to 60% of the amount to be paid to the Suppliers for such materials and supplies unless vendor manufactures or substantially alters materials and supplies in which case 100% will be credited. The Bidder is to indicate (Yes/No) whether listed firm is a supplier or manufacturer. In calculating the subcontractor participation percentages, vendors/suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed dollar value for purposes of calculating the Subcontractor Participation Percentage, Suppliers will receive 60% credit of the listed **DOLLAR VALUE**, whereas manufacturers will receive 100% credit. If no indication provided, listed firm will be credited at 60% of the listed **DOLLAR VALUE** for purposes of calculating the subcontractor participation percentages.

NAME, ADDRESS AND TELEPHONE NUMBER OF VENDOR/SUPPLIER	MATERIALS OR SUPPLIES	DOLLAR VALUE OF MATERIAL OR SUPPLIES (MUST BE FILLED OUT)	SUPPLIER (Yes/No)	MANUFACTURER (Yes/No)	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone OR SDVOSB	WHERE CERTIFIED
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						
Name: _____ Address: _____ City: _____ State: _____ Zip: _____ Phone: _____ Email: _____						

- ① As appropriate, Bidder shall identify Vendor/Supplier as one of the following and shall include a valid proof of certification (except for OBE,SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ② As appropriate, Bidder shall indicate if Vendor/Supplier is certified by:
- | | | | |
|--|------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | State of California's Department of General Services | CADoGS |
| City of Los Angeles | LA | State of California | CA |
| U.S. Small Business Administration | SBA | | |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

SUBCONTRACTORS ADDITIVE/DEDUCTIVE ALTERNATE
(USE ONLY WHEN ADDITIVE ALTERNATES ARE REQUIRED)

ADDITIVE/DEDUCTIVE ALTERNATE	NAME, ADDRESS AND TELEPHONE NUMBER OF SUBCONTRACTOR	CONSTRUCTOR OR DESIGNER	SUBCONTRACT OR LICENSE NUMBER	TYPE OF WORK	DOLLAR VALUE OF SUBCONTRACT	MBE, WBE, DBE, DVBE, OBE, ELBE, SLBE, SDB, WoSB, HUBZone, OR SDVOSB	WHERE CERTIFIED	CHECK IF JOINT VENTURE PARTNERSHIP
	Name: <u>Payco Specialties</u> Address: <u>120 N. Second Ave</u> City: <u>Chula Vista</u> State: <u>CA</u> Zip: <u>91910</u> Phone: <u>619 422 9204</u> Email:	NA	298637 662550	Pavement Markers Striping	\$14,040.10	San Diego SLBE 11PS0238	CA	NA
	Name: <u>Wester Gardens Landscaping</u> Address: <u>4616 Pannonia Rd</u> City: <u>Carlsbad</u> State: <u>CA</u> Zip: <u>92008</u> Phone: <u>760 720 1459</u> Email:	NA	662550	Hydro-seeding	\$454,000	SLBE 13W100811	CA	NA

- ⓐ As appropriate, Bidder shall identify Subcontractor as one of the following and shall include a valid proof of certification (except for OBE, SLBE and ELBE):
- | | | | |
|---|--------|--|---------|
| Certified Minority Business Enterprise | MBE | Certified Woman Business Enterprise | WBE |
| Certified Disadvantaged Business Enterprise | DBE | Certified Disabled Veteran Business Enterprise | DVBE |
| Other Business Enterprise | OBE | Certified Emerging Local Business Enterprise | ELBE |
| Certified Small Local Business Enterprise | SLBE | Small Disadvantaged Business | SDB |
| Woman-Owned Small Business | WoSB | HUBZone Business | HUBZone |
| Service-Disabled Veteran Owned Small Business | SDVOSB | | |
- ⓑ As appropriate, Bidder shall indicate if Subcontractor is certified by:
- | | | | |
|--|------|--|----------|
| City of San Diego | CITY | State of California Department of Transportation | CALTRANS |
| California Public Utilities Commission | CPUC | State of California's Department of General Services | CADoGS |
| City of Los Angeles | LA | State of California | CA |
| U.S. Small Business Administration | SBA | | |

The Bidder will not receive any subcontracting participation percentages if the Bidder fails to submit the required proof of certification.

AFFIDAVIT OF DISPOSAL

(To be submitted upon completion of Construction pursuant to the contracts Certificate of Completion)

WHEREAS, on the _____ DAY OF _____, 2_____ the undersigned entered into and executed a contract with the City of San Diego, a municipal corporation, for:

_____ Miramar Landfill Storm Water Improvements _____
(Name of Project)

as particularly described in said contract and identified as **Bid No. K-18-1599-DBB-3**; SAP No. (WBS/IO/CC) **S-16054**; and **WHEREAS**, the specification of said contract requires the Contractor to affirm that "all brush, trash, debris, and surplus materials resulting from this project have been disposed of in a legal manner"; and **WHEREAS**, said contract has been completed and all surplus materials disposed of:

NOW, THEREFORE, in consideration of the final payment by the City of San Diego to said Contractor under the terms of said contract, the undersigned Contractor, does hereby affirm that all surplus materials as described in said contract have been disposed of at the following location(s)

and that they have been disposed of according to all applicable laws and regulations.

Dated this _____ DAY OF _____.

By: _____
Contractor

ATTEST:

State of _____ County of _____

On this _____ DAY OF _____, 2_____, before the undersigned, a Notary Public in and for said County and State, duly commissioned and sworn, personally appeared _____ known to me to be the _____ Contractor named in the foregoing Release, and whose name is subscribed thereto, and acknowledged to me that said Contractor executed the said Release.

Notary Public in and for said County and State

ELECTRONICALLY SUBMITTED FORMS

THE FOLLOWING FORMS MUST BE SUBMITTED IN PDF FORMAT WITH BID SUBMISSION

The following forms are to be completed by the bidder and submitted (uploaded) electronically with the bid in PlanetBids.

A. BID BOND – See Instructions to Bidders, Bidders Guarantee of Good Faith (Bid Security) for further instructions

B. CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS

Bids will not be accepted until ALL the above-named forms are submitted as part of the bid submittal

BID BOND

**See Instructions to Bidders, Bidder Guarantee of Good Faith
(Bid Security)**

KNOW ALL MEN BY THESE PRESENTS,

That RAL Investment Corporation dba Silverstrand Construction as Principal, and
The Hanover Insurance Company as Surety, are

held and firmly bound unto The City of San Diego hereinafter called "OWNER," in the sum of **10% OF THE TOTAL BID AMOUNT** for the payment of which sum, well and truly to be made, we bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, said Principal has submitted a Bid to said OWNER to perform the WORK required under the bidding schedule(s) of the OWNER's Contract Documents entitled

Miramar Landfill Storm Water Improvements; K-18-1599-DBB-3

NOW THEREFORE, if said Principal is awarded a contract by said OWNER and, within the time and in the manner required in the "Notice Inviting Bids" enters into a written Agreement on the form of agreement bound with said Contract Documents, furnishes the required certificates of insurance, and furnishes the required Performance Bond and Payment Bond, then this obligation shall be null and void, otherwise it shall remain in full force and effect. In the event suit is brought upon this bond by said OWNER and OWNER prevails, said Surety shall pay all costs incurred by said OWNER in such suit, including a reasonable attorney's fee to be fixed by the court.

SIGNED AND SEALED, this 15th day of November, 2017

RAL Investment Corporation dba Silverstrand Construction (SEAL)

The Hanover Insurance Company (SEAL)

(Principal)

(Surety)

By: 

By: 

Todd Stein, Attorney In Fact

(Signature)

(Signature)

(SEAL AND NOTARIAL ACKNOWLEDGEMENT OF SURETY)

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

POWER OF ATTORNEY

THIS Power of Attorney limits the acts of those named herein, and they have no authority to bind the Company except in the manner and to the extent herein stated.

KNOW ALL PERSONS BY THESE PRESENTS:

That THE HANOVER INSURANCE COMPANY and MASSACHUSETTS BAY INSURANCE COMPANY, both being corporations organized and existing under the laws of the State of New Hampshire, and CITIZENS INSURANCE COMPANY OF AMERICA, a corporation organized and existing under the laws of the State of Michigan, (hereinafter individually and collectively the "Company") does hereby constitute and appoint,

Mark Levinson, Todd Stein and/or Jeff McQuate

Of Brunswick Companies, Fairlawn, OH and each individually, if there be more than one named, as its true and lawful attorney(s)-in-fact to sign, execute, seal, acknowledge and deliver for, and on its behalf, and as its act and deed any place within the United States, any and all surety bonds, recognizances, undertakings, or other surety obligations. The execution of such surety bonds, recognizances, undertakings or surety obligations, in pursuance of these presents, shall be as binding upon the Company as if they had been duly signed by the president and attested by the secretary of the Company, in their own proper persons. Provided however, that this power of attorney limits the acts of those named herein; and they have no authority to bind the Company except in the manner stated and to the extent of any limitation stated below:

Any such obligations in the United States, not to exceed Twenty Five Million and No/100 (\$25,000,000) in any single instance

That this power is made and executed pursuant to the authority of the following Resolutions passed by the Board of Directors of said Company, and said Resolutions remain in full force and effect:

RESOLVED: That the President or any Vice President, in conjunction with any Vice President, be and they hereby are authorized and empowered to appoint Attorneys-in-fact of the Company, in its name and as it acts, to execute and acknowledge for and on its behalf as surety, any and all bonds, recognizances, contracts of indemnity, waivers of citation and all other writings obligatory in the nature thereof, with power to attach thereto the seal of the Company. Any such writings so executed by such Attorneys-in-fact shall be binding upon the Company as if they had been duly executed and acknowledged by the regularly elected officers of the Company in their own proper persons.

RESOLVED: That any and all Powers of Attorney and Certified Copies of such Powers of Attorney and certification in respect thereto, granted and executed by the President or Vice President in conjunction with any Vice President of the Company, shall be binding on the Company to the same extent as if all signatures therein were manually affixed, even though one or more of any such signatures thereon may be facsimile. (Adopted October 7, 1981 - The Hanover Insurance Company; Adopted April 14, 1982 - Massachusetts Bay Insurance Company; Adopted September 7, 2001 - Citizens Insurance Company of America)

IN WITNESS WHEREOF, THE HANOVER INSURANCE COMPANY, MASSACHUSETTS BAY INSURANCE COMPANY and CITIZENS INSURANCE COMPANY OF AMERICA have caused these presents to be sealed with their respective corporate seals, duly attested by two Vice Presidents, this 30th day of March, 2016.



THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

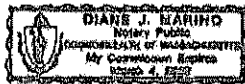
Robert Thomas, Vice President

THE HANOVER INSURANCE COMPANY
MASSACHUSETTS BAY INSURANCE COMPANY
CITIZENS INSURANCE COMPANY OF AMERICA

J. Thomas, Vice President

THE COMMONWEALTH OF MASSACHUSETTS)
COUNTY OF WORCESTER) ss.

On this 30th day of March 2016 before me came the above named Vice Presidents of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, to me personally known to be the individuals and officers described herein, and acknowledged that the seals affixed to the preceding instrument are the corporate seals of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, respectively, and that the said corporate seals and their signatures as officers were duly affixed and subscribed to said instrument by the authority and direction of said Corporations.



Diane J. Marino, Notary Public
My Commission Expires March 4, 2022

I, the undersigned Vice President of The Hanover Insurance Company, Massachusetts Bay Insurance Company and Citizens Insurance Company of America, hereby certify that the above and foregoing is a full, true and correct copy of the Original Power of Attorney issued by said Companies, and do hereby further certify that the said Powers of Attorney are still in force and effect.

GIVEN under my hand and the seals of said Companies, at Worcester, Massachusetts, this 15th day of November 2017

CERTIFIED COPY

Theodore G. Martinez, Vice President

ALL-PURPOSE ACKNOWLEDGMENT

State of Ohio

County of Summit

On 11/15/2017 before me, Susan J. Harner
DATE NAME OF NOTARY PUBLIC

personally appeared Todd Stein
NAME(S) OF SIGNER(S)

personally known to me OR proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Place Notary Seal or Stamp Here



SIGNATURE OF NOTARY Notary Expires 10/27/2022

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it may prove valuable to persons relying on this Acknowledgment and could prevent fraudulent reattachment of this certificate to another document.

DESCRIPTION OF ATTACHED DOCUMENT

THIS CERTIFICATE
MUST BE ATTACHED
TO THE DOCUMENT
DESCRIBED AT RIGHT

TITLE OR TYPE OF DOCUMENT

NUMBER OF PAGES

DATE OF DOCUMENT

SIGNER(S) OTHER THAN NAMED ABOVE

No 4864

STATE OF CALIFORNIA
DEPARTMENT OF INSURANCE
SAN FRANCISCO

AMENDED

Certificate of Authority

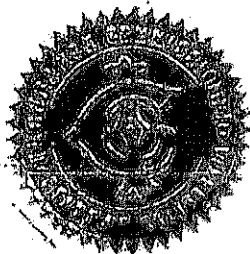
THIS IS TO CERTIFY, That, pursuant to the Insurance Code of the State of California,

The ~~Bedford New Hampshire~~ ~~Insurance~~ ~~Company~~ Company

of Bedford, New Hampshire, organized under the laws of New Hampshire, subject to its Articles of Incorporation or other fundamental organizational documents, is hereby authorized to transact within this State, subject to all provisions of this Certificate, the following classes of insurance: Fire, Marine, Surety, Disability, Plate Glass, Liability, Workers' Compensation, Common Carrier Liability, Boiler and Machinery, Burglary, Credit, Sprinkler, Team and Vehicle, Automobile, Aircraft and Miscellaneous as such classes are now or may hereafter be defined in the Insurance Laws of the State of California.

THIS CERTIFICATE is expressly conditioned upon the holder hereof now and hereafter being in full compliance with all, and not in violation of any, of the applicable laws and lawful requirements made under authority of the laws of the State of California as long as such laws or requirements are in effect and applicable, and as such laws and requirements now are, or may hereafter be changed or amended.

IN WITNESS WHEREOF, effective as of the 20th day of October, 1986, I have hereunto set my hand and caused my official seal to be affixed this 20th day of October, 1986.



By

[Signature]
Victoria S. Sidbury
Deputy

NOTICE:

Qualification with the Secretary of State must be accomplished as required by the California Corporations Code promptly after issuance of this Certificate of Authority. Failure to do so will be a violation of Ins. Code Sec. 701 and will be grounds for revoking this Certificate of Authority pursuant to the covenants made in the application therefor and the conditions contained herein.



The Hanover Insurance Company, Bedford, New Hampshire
Assets and Liabilities as of December 31, 2016

ASSETS

	2016
Cash in Banks (Including Short-Term Investments).....	\$ (5,480,332)
Bonds and Stocks.....	\$3,390,215,623
Other Admitted Assets.....	<u>\$2,024,541,227</u>
Total Admitted Assets.....	<u>\$7,409,276,518</u>

LIABILITIES, CAPITAL AND SURPLUS

Reserve for Unearned Premiums.....	\$1,566,642,985
Reserve for Loss and Loss Expense.....	\$2,988,645,005
Reserve for Taxes.....	\$ 31,271,197
Funds held under reinsurance treaties.....	\$ 2,422,465
Reserve for all other liabilities.....	\$ 652,134,655
Capital Stock - \$1.00 par.....	\$ 5,000,000
Net Surplus.....	<u>\$2,163,160,211</u>
Policyholders' Surplus.....	<u>\$2,168,160,211</u>
Total Liabilities, Capital and Surplus.....	<u>\$7,409,276,518</u>

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF WORCESTER

I, Jeffrey Farber, Assistant Treasurer of The Hanover Insurance Company, being duly sworn deposes and says that he is the above described officer of said Company, and certifies that the forgoing statement is a true statement of the condition and affairs of the said Company on December 31, 2016.

Jeffrey Farber,
Assistant Treasurer

hanover.com

The Hanover Insurance Company
440 Lincoln Street, Worcester, MA 01653

Citizens Insurance Company of America
608 North Highlander Way, Howell, MI 48843

CONTRACTOR'S CERTIFICATION OF PENDING ACTIONS

As part of its bid or proposal (Non-Price Proposal in the case of Design-Build contracts), the Bidder shall provide to the City a list of all instances within the past 10 years where a complaint was filed or pending against the Bidder in a legal or administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers, and a description of the status or resolution of that complaint, including any remedial action taken.

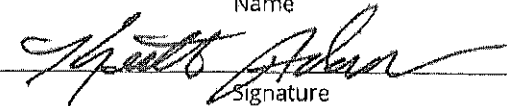
CHECK ONE BOX ONLY.

- The undersigned certifies that within the past 10 years the Bidder has NOT been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers.

- The undersigned certifies that within the past 10 years the Bidder has been the subject of a complaint or pending action in a legal administrative proceeding alleging that Bidder discriminated against its employees, subcontractors, vendors or suppliers. A description of the status or resolution of that complaint, including any remedial action taken and the applicable dates is as follows:

DATE OF CLAIM	LOCATION	DESCRIPTION OF CLAIM	LITIGATION (Y/N)	STATUS	RESOLUTION/REMEDIAL ACTION TAKEN

Contractor Name: RAL Investment Corporation dba Silverstrand Construction

Certified By Keith Adamek Title Vice President
Name

Signature Date 11/14/2017

USE ADDITIONAL FORMS AS NECESSARY

City of San Diego

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, Email: ASanfilippo@sandiego.gov
Phone No. (619) 533-3439, Fax No. (619) 533-3633

ADDENDUM A



FOR

MIRAMAR LANDFILL STORM WATER IMPROVEMENTS

BID NO.:	<u>K-18-1599-DBB-3</u>
SAP NO. (WBS/IO/CC):	<u>S-16054</u>
CLIENT DEPARTMENT:	<u>2115</u>
COUNCIL DISTRICT:	<u>6</u>
PROJECT TYPE:	<u>FA</u>

BID DUE DATE:

**2:00 PM
NOVEMBER 7, 2017
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14th FLOOR, MS 614C
SAN DIEGO, CA 92101**

A. CHANGES TO CONTRACT DOCUMENTS

The following changes to the Contract Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

B. BIDDER'S QUESTIONS

Q1. Will there be any other opportunities for site visits?

A1. Bidders who attended the mandatory pre-bid meeting and site visit who wish to make an additional site visit may do so by contacting the Landfill Program Manager, Mark Zu Hone at (858) 492-6151. The City will make reasonable efforts to accommodate such request but cannot guarantee that a visit will be able to be arranged. All visitors must be escorted during their visits by designated Miramar Landfill personnel.

James Nagelvoort, Director
Public Works Department

Dated: *October 23, 2017*
San Diego, California

JN / ALJ / cc

City of San Diego

CITY CONTACT: Antoinette Sanfilippo, Contract Specialist, **Email:** ASanFilippo@sandiego.gov
Phone No. (619) 533-3439, **Fax No.** (619) 533-3633

ADDENDUM B



FOR

MIRAMAR LANDFILL STORM WATER IMPROVEMENTS

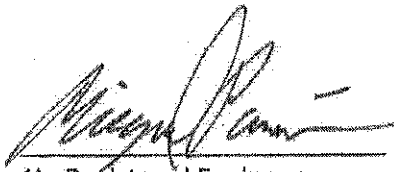
BID NO.:	K-18-1599-DBB-3
SAP NO. (WBS/IO/CC):	S-16054
CLIENT DEPARTMENT:	2115
COUNCIL DISTRICT:	6
PROJECT TYPE:	FA

BID DUE DATE:

**2:00 PM
NOVEMBER 15, 2017
CITY OF SAN DIEGO
PUBLIC WORKS CONTRACTS
1010 SECOND AVENUE, 14th FLOOR, MS 614C
SAN DIEGO, CA 92101**

ENGINEER OF WORK

The engineering Specifications and Special Provisions contained herein have been prepared by or under the direction of the following Registered Engineer:

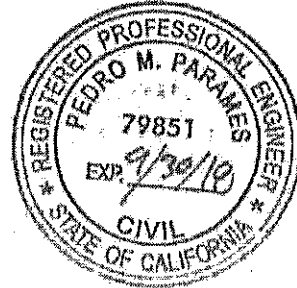


1) Registered Engineer

10-30-17

Date

Seal:





2) For City Engineer

10-27-17

Date

Seal:



A. CHANGES TO SOLICITATION DOCUMENTS

The following changes to the Solicitation Documents are hereby made effective as though originally issued with the bid package. Bidders are reminded that all previous requirements to this solicitation remain in full force and effect.

THE SUBMITTAL DATE FOR THIS PROJECT HAS BEEN **EXTENDED AS STATED ON THE COVER PAGE.**

B. BIDDER'S QUESTIONS

Q1. In paragraph 1.1 it states that "hydroseeding work shall be timed to occur between October 1 and December 15th". Given the date that bids are due, and subsequent to time to get NTP on the project, it is highly unlikely that these dates will fall within the contract duration. Will the date range given for hydroseeding be changed? If the dates are not changed will hydroseeding not be considered part of substantial completion? Also, if the dates are not changed will the city please confirm that a lack of hydroseeding will not be cause for assessing Liquidated Damages? Finally, if the dates are not changed will the contractor be responsible for temporary stabilization until hydroseeding can take place?

A1. The botanist that provided the seed mixture recommended the window for hydroseeding to take advantage of the rainy season for vegetation establishment and indicated that the likelihood of achieving vegetative cover if hydroseeding were to occur after these dates is low due to rainfall patterns. Watering with a water truck or hose outside of the rainy season was also not recommended. Hydroseeding work associated with Erosion Control Areas 2, 3, and 4 shall be postponed to occur between October 1, 2018 and December 30, 2018. All other work activities specified in the Solicitation Documents shall be completed within 100 Working Days from the Notice To Proceed (NTP) and shall be subject to Liquidated Damages. See section C Attachments, item 1 of this Addendum.

- Q2. The measurement and payment for this section states that "No separate payment for this item shall be made". There are 2 separate specific SWPP bid items on the bid schedule. Will payment be made under the given bid items or will the bid items be deleted?
- A2. Pay items will remain for SWPPP Development, SWPPP Implementation, and SWPPP Permit Fee.
- Q3. In 1.3 A. 1. For the proposed grades it states that, "the Contractor shall verify actual field conditions, and shall made all adjustments in the subgrade for paving and hardscape installation as appropriate, to meet this design intent. In the measurement and payment of this section it states that the following will be paid as unclassified excavation. "Pay quantities for discrepancies between design and actual pre-construction field conditions shall be determined by comparing the volumetric difference between the design contours and pre-construction surveys of the cut/fill areas. The City will commission and pay for the pre-construction survey." Will the contractor be paid differences in quantity of work due to a change in proposed existing grades and actual existing grades at the time of work? Will the contractor bear the cost of the survey to determine if there is a change?
- A3. The contractor will be paid for actual quantities of work performed, as measured by the pre-construction topographic survey and subsequent topographic surveys completed at each milestone event (establishment of subgrade, placement of base/grindings, and paving).
- Q4. In the measurement and payment section there is a subsection for Refuse Excavation and Disposal. There is no bid item for this work. Where will it be paid on the bid schedule? Will a bid item be added?
- A4. A bid item for "Refuse Excavation and Disposal" has been added. The revised bid form is included in Addendum B.

- Q5. In the measurement and payment the subsection for Milled Asphalt states it shall be determined volumetrically based on the number of truck loads. Does the city have a set factor of how many cubic yards per truck load will be counted, are there different factors for different types of trucks?
- A5. Truck load cubic yards factors have not been established. A methodology will need to be established and agreed-upon between the Contractor and the City's Resident Engineer prior to the start of construction and, as stipulated in Section 31 05 16 Aggregates for Earthwork, Part 4 Measurement and Payment, subsection 4.1 Milled Asphalt. Total pay quantities for Milled Asphalt and Class 2 Aggregate Base line items shall be in agreement with the quantity calculated by the topographic surveys commissioned and paid for by the City (top of base vs. top of subgrade). This may require some reconciliation between the Resident Engineer and Contractor as to apportionment between the two pay items (Milled Asphalt vs. Class 2 Base).
- Q6. In the measurement and payment section there is not a subsection for Class 2 Base, however there is a bid item for it. How will Class 2 Base be paid?
- A6. Class 2 Aggregate Base will be paid in accordance with GREENBOOK Section 301-2.4 as indicated in the bid form. Because the unit of payment in the bid form is volumetric, the quantity will be calculated by the topographic surveys commissioned and paid for by the City (top of base vs. top of subgrade). In the event that a combination of Class 2 Aggregate Base and Milled Asphalt are utilized for roadway bedding, the pay quantity for Class 2 Aggregate Base will be calculated as the surveyed volume (top of base vs. top of subgrade) minus the quantity of Milled Asphalt.

- Q7. In the measurement and payment section it states that, "No separate payment will be made for geotextiles." There is a separate bid item for geotextile. Will the bid item for geotextile be deleted? If the bid item for geotextile is not deleted please indicate what will be paid for this bid item.
- A7. The bid item for "Woven Geotextile Mat" has been eliminated. The revised bid form is included in Addendum B. Payment references in Section 33 40 00 item 4.2 (articulated concrete block) and item 4.3 (channel with coarse aggregate) have been updated to clarify that unit prices shall include the cost of woven geotextile mat in this Addendum.
- Q8. Can Straw Wattles be substituted for Compost-Filled Slope Interruption Devices?
- A8. No, Straw Wattles cannot be substituted for Compost-Filled Slope Interruption Devices.
- Q9. Will the City please confirm that it is not anticipated that the Contractor will encounter any hazardous or contaminated waste or material during execution of this contract?
- A9. Correct, the City does not anticipate that the Contractor will encounter any hazardous or contaminated waste or material during execution of the contract.
- Q10. What is the depth of existing asphalt to be milled?
- A10. There is no existing asphalt to be milled. Existing haul roads are overlain with milled asphalt and the intent is to cut/fill this existing material as indicated on the plan drawings.

- Q11. In measurement and payment of 31 25 14 it states that all materials and installation required to complete erosion control area 4 in its entirety shall be paid under the bid item for erosion control area 4. In 33 40 00 measurement and payment it says that the gabion structures shall be paid. There is a separate bid item for gabion structures. Where are the gabion structures shown and described in erosion control area 4 to be paid? If they are paid under a separate bid item will the City revise the measurement and payment for erosion control area 4?
- A11. All gabion check structures installed on this project will be paid as a separate line item as "Greenery Gabion Check Structures". The plan drawings reflect a total of 19 check structures which is consistent with the quantity shown on the bid form. Measurement and Payment callouts in item 4.6.A. of Section 31 25 14 have been revised.
- Q12. What is the anticipated haul distance for refuse if it is encountered during this project?
- A12. The haul distance will depend on the location where the waste is discovered and the location of active landfilling operations, but the distance would not be expected to exceed two miles one-way.
- Q13. On drawing C-8 detail 11 it appears that some type of fill material goes on top of the articulated blocks. No material is specified for this work. Is some form of material required on the blocks, if so what is required?
- A13. No fill material is to be installed over the articulated concrete block.
- Q14. Per our onsite job walk, the City of San Diego is going to top the existing site for site work quantities. Are there CADD files available or going to be available for bidding takeoff purposes?
- A14. No, CADD files will not be made available for bidding takeoff purposes.
- Q15. Is the City providing survey for this project?
- A15. Yes.

Q16. I am following up in regards to the West Miramar Landfill Storm Water Project and wanted to ask if a wheel wash for storm water discharges would be needed for this project. I have included a PDF brochure for you to review.

A16. A wheel wash for storm water discharges will not be needed for this project.

Q17. Will the City please provide the existing structural cross section for the road that is to be rebuilt?

A17. There are no structural cross sections for existing roadways.

Q18. Will the Contractor be allowed to run off-road size gear on the landfill roads? i.e. dumptrucks, loaders, etc.

A18. Yes

Q19. Sheet C-7 Details 7&9; Both of these typical sections show ASTM #357 coarse aggregate for shoulders. There is not a bid item for this. Also there is no measurement and payment section in the specifications for this work. Where and how is this work to be paid?

A19. A bid item has been added for "Rock Shoulder with Coarse Aggregate". Section 33 40 00 Item 4.9 has been added to detail measurement and payment provisions.

Q20. 32 10 00: In 3.1 A. it states that 2x4 headers are to be used for paving. Headers are generally not required for this type of work. Will the city please eliminate the need for headers? If the requirement for headers is to remain will the headers be permanent? Also, is there a specific material (i.e. redwood) that the headers are required to be?

A20. Headers will not be required. The callout is contained in 32 10 00 Item 3.3 A, which has been eliminated.

- Q21. Will the city provide areas at the landfill for the contractor to temporarily stockpile material, if so where and what size will these areas be?
- A21. Yes, locations that will be made available to the Contractor are identified in Exhibit included in this Addendum on page 18. There will be a total of approximately 3 acres of flat surfaces available for laydown/staging/stockpiling. The City will work with the Contractor to identify areas to minimize haul distances, travel times, etc.
- Q22. BI #14 Sheet C-7: It appears that there is only enough quantity in Bid Item #14 for a single layer of geogrid. The details clearly show a double layer of geogrid. Will the city adjust this quantity, or is it the intent of the city that the contractor only get paid 1 sy for each double layer of geogrid?
- A22. The quantity in the bid item has been increased to 57,000 SY to reflect the square yardage estimated to be required for two layers of geogrid installation.
- Q23. Sheet C-7: The shoulder cellular confinement shown on detail 8 appears to have the geoweb varying in height across the cross section. It is our understanding that geoweb comes in set heights and is not available in a variable height. Will the city please provide the required height of the geoweb for the shoulder cellular confinement?
- A23. A nominal depth of 6-inch high cellular confinement is specified.
- Q24. Sheet C-3: The typical detail for energy dissipators states that there should be a filter layer material called out in the design. Will the city please provide details on what the filter layer material is?
- A24. A single layer of MIRAFI 500X or approved equal filter fabric is specified.
- Q25. What are the landfill hours of operation?
- A25. Business hours are 7:00am to 4:30pm. Landfill staff is on site from 6:45am to 5:15pm.

- Q26. Bid Item #15 Sheet C-7: Bid Item #15 has a quantity of 10,110 sf. This work is only shown in detail 8, and according to the section consistently 10' wide. Looking at the roadway plan sheets and reading the stationing where detail 8 is to be followed there is approximately 1,420' of roadway that uses this detail. $10' \times 1,420' = 14,200$ sf. This would mean that there is 4,100sf more than shown in the bid item. Will the city please explain how they came up with their quantity?
- A26. The quantity in Bid Item #15 has been increased to 14,230 SF to account for 1,423 linear feet of roadway at 10 foot width.
- Q27. Sheet C-6 Detail 3: It is difficult from the information shown on this drawing to determine the amount of gravel bags required. Both the plan and section view show what appears to be a 4bag x 4bag equilateral triangle. The text calls for a pyramid 3 bags tall by 6 bags long. Most pyramids are 4 sided. However, if you do the following: 1. A three sided pyramid that started with 6bag x 6bag equilateral triangle with the first lift 2. One side of the pyramid flush to the gabion 3. Went 3 bags high, and you removed one bag every time you went up a lift (the second lift would be a 5bag x 5bag triangle), it would result in 116 Gravel bags for each gabion check structure. This would be a total of 2,204 gravel bags which seems excessive. Will the city please provide more information so the correct amount of gravel bags can be determined?
- A27. The intent of the gravel bags is to prevent by-pass and undermining at the intersection of the k-rail and the gabion. The gravel bags should be placed in an "L-shape" at the intersection of the k-rail and gabion. Each leg of the "L" should be 1-bag wide, 2-bags long, and stacked 2-bags high, totaling 16 bags per gabion check structure (8 bags per each side).
- Q28. 00 31 13.16: On a public road flagged single lane closures are only allowed up to 500' in length without a pilot car. Since access is controlled to the landfill will the city accept longer closures?
- A28. Yes. Landfill roads are not subject to public roadway requirements.
- Q29. 00 31 13.16: Will the city require 24 hour traffic control for single lane closures, or is there a certain time when the landfill is completely closed and does not require flagging?
- A29. 24 hour traffic control will not be required. The landfill is completely closed between 5:15pm and 6:45am.

- Q30. What are the liquidated damages on this project per day?
- A30. Per the WHITEBOOK Section 6-9 LIQUIDATED DAMAGES Page 38, Liquidated Damage Daily Amount is \$1,000.00.
- Q31. Please confirm that the existing asphalt grinding haul road does not have geogrid fabric within.
- A31. Correct, the existing asphalt grinding haul road does not have geogrid fabric within.
- Q32. Will Miramar Landfill accept spoils generated from the site at a no charge fee?
- A32. Yes.
- Q33. Since traffic control is needed on the first portion of the project, will a line item for traffic control be added to the bid schedule?
- A33. No. Bidders shall factor the cost of any required traffic control into their unit prices for roadway construction-related activities.
- Q34. What is the thickness of the existing asphalt grinding haul road?
- A34. Unknown.
- Q35. The Specs state the participation rates to be SLBE=9.7% and the ELBE at 12.6 % for a combined total of 22.3%. Please confirm as per the Pre-bid meeting that the combined total of 22.3% is required and the individual goal amounts are not required.
- A35. This project has a mandatory SLBE-ELBE subcontracting requirement of 22.3%. This goal can be met with any combination of the City of San Diego's certified SLBE or ELBE firms. The recommended breakdown listed in the Notice Inviting Bids, Item 7.1, of the specifications is based on availability.
- Q36. As bidders, can we base our bid on being able to dispose of the excess soil / dirt excavation of 11,180 CY at a location(s) within the Miramar Landfill at no cost to the successful contractor?
- A36. Yes.

Q37. Per our onsite job walk, the City of San Diego is going to top the existing site for site work quantities. Are there CADD files available or going to be available for bidding takeoff purposes?

A37. No.

Q38. Please clarify and confirm the Traffic Control requirement as stated at the pre-bid meeting since there are no specific Traffic Control plans included in the project plans that all bidders can bid on equally.

A38. Section 00 31 13.16, Construction Schedule, Item 3.1 details general requirements related to traffic control, including provision of signage, flag persons, and 2-way radio communication to ensure proper control and flow of traffic. Item 3.1 A specifies that "Contractor shall execute work on active haul roads in a manner which minimizes operational impacts to landfill operations". The City expects that the Contractor will not stop traffic for more than a 5-minute period in either direction when lane closures are in effect.

Q39. Part 1 Station approx. 1+00 to Station approx. 17+00 on the Main Haul Road North: Please confirm that bidders can base their bids on complete closure of this stretch of the improvements 24 hours a day during the duration of the work at this location while keeping the Main Haul Road South open as a detour route.

A39. Yes.

Q40. Part 2 Station approx. 0+00 to Station approx. 28+00 on the Main Haul Road South: Please confirm that bidders can base their bids on complete closure of this stretch of the improvements 24 hours a day during the duration of the work at this location while keeping the Main Haul Road North open as a detour route.

A40. Yes

- Q41. Part 3 Station approx. 17+00 to Station approx. 45+50 on the Main Haul Road North Please confirm that this of the Haul Road cannot be closed entirely. Also please confirm that there must be 2 lanes of travel during the afterhours throughout the duration of the work at this section, since flaggers cannot be supplied 24ths a day.
- A41. Correct, this section of the haul road cannot be closed entirely. Contractor shall maintain one lane with flaggers during landfill operating hours and one lane with signage cautioning single lane and potential of oncoming traffic during non-operating hours.
- Q42. The Engineer is approving & recording all truck loads, what is the timing (truck standby time) for this approval and recording? Please clarify.
- A42. This requirement only applies to the use of milled asphalt. Milled asphalt will only be used on the project in place of Class 2 Base when the materials test lab confirms on-site milled asphalt meets criteria and then only when directed by the Engineer. After these conditions are met, the City will only proceed if the City can allocate necessary resources for continuous on-site verification of truck loads. Bidders shall assume that an averaged standby of 5-minutes per truck will be required to verify and record truck counts.
- Q43. Milled Asphalt per section 31 05 16 4.1- Where are the onsite landfill locations of the Milled Asphalt grindings? Is there onsite locations or is the contractor supposed to import from an outside source? Please clarify.
- A43. The location of the on-site milled asphalt grinding stockpile is identified in Exhibit in this Addendum on page 19. As noted in Section 31 05 16, Item 2.4, milled asphalt concrete from outside sources may be considered by the Engineer when the materials have been confirmed to meet specifications.
- Q44. Line item no. 14 – “Geosynthetic Subgrade Reinforcing” has a quantity of 28500 SY. The actual quantity should be double as the plans call for two (2) layers of geosynthetic Subgrade Reinforcing (Sheet C-7, 7, 8 & 9 typical). Please clarify.
- A44. The quantity in the bid item has been increased to 57,000 SY to reflect the square yardage estimated to be required for two layers of geogrid installation.

Q45. Per Technicals Section 00 10 00, "Hydroseeding work shall be timed to occur between October 1 and December 15th." Based on an October 27 bid date, it will not be possible to perform hydroseeding during the specified time. How is the contractor supposed to handle this requirement?

A45. Refer to Question/Answer #1.

Q46. Since grading, placement of base, and AC paving is limited to a single lane and requires continuous flag-persons to ensure a safe travel way, what are the landfill operational hours in which continuous flagging will be required?

A46. Continuous flagging will be required between 7am to 4:30pm.

Q47. Is there a location on site to dispose of surplus unclassified excavation, or does it need to be hauled out of the landfill? If material can be disposed of at the landfill, please provide location for disposal and placement requirements (stockpiled, knocked down, compacted, etc.).

A47. Surplus unclassified excavation will remain at the landfill. The material will either be re-used or directly disposed at the tipping face. The City will direct the Contractor where on the landfill the material should be transported on a case-by-case basis. The City will take care of managing the materials once transported and off-loaded by the Contractor.

Q48. Is the Contractor responsible for QC testing for Asphalt Concrete, Aggregates, Subgrade Compaction, etc. or is it provided by the City?

A48. QC testing is to be requested/scheduled by the Contractor and provided by the City at no cost to the Contractor. Protocols will be presented at the Pre-Construction meeting.

Q49. Is there a bid / pricing form other than the Line Item Form with items 1-28 and including any alternate pricing?

A49. No.

- Q50. Per the onsite pre-bid meeting, there were several questions and answers that were talked about at the first City of San Diego office and they were supposed to be sent out in an addendum. No addendums have been sent out as of today (Oct. 18th, 2017). Please advise.
- A50. The questions and answers referenced were associated with RFI No 01, which are addressed in this addendum (Addendum B).
- Q51. There seem to be a problem with some of the Line Item numbers. Bid Item 8 & 9 are for the same item. One of these should be in the Base Bid the other should be shown as an Alternate.
- A51. The City will potentially use a combination of Class 2 Base and Milled Asphalt for roadway base on this project.
- Q52. Line Item 14-Geosynthetic appears to be for only one layer-there are 2 layers that occur here-28,500SF.
- A52. The quantity in the bid item has been increased to 57,000 SY to reflect the square yardage estimated to be required for two layers of geogrid installation.
- Q53. Where is the quantity for channel with Aggregate when the grades are greater than 5%? For Line Item 15-Aggregate with road shoulders=10,110 SF. I did a rough estimate of 60,000 SF =10 feet wide x 6000 feet long
- A53. Channels at grades greater than 5% will utilize articulated concrete block as provided for in Line Item 16.
- Q54. Bid Item 14 – Geosynthetic Subgrade Reinforcing – I believe this line item is nowhere close to the actual square footage on the bid. The bid item has 28,500 SY, which accounts for only 1 layer within the aggregate base section. Has this been brought to your attention?
- A54. Yes, this issue has been addressed. See Questions/Answers #43 and #51.

Q55. Bid Item 17 - Channel with Coarse Aggregate on Road Grades < 5% - I have found that this square footage is nowhere near what is on the bid Schedule. Has this been brought to your attention?

A55. No, the City believes the quantity estimate is accurate. If there are discrepancies between bid vs. actual quantities, the excess quantities will be paid at quoted unit prices once verified at the time of completion.

Q56. Paragraph A of sub-section 4.1 of Part 4 of section 31 05 13 of the Contract documents references a Contract Unit Price for "REFUSE REMOVAL AND TRANSPORT". However, there is no bid item in the Bid Schedule for "REFUSE REMOVAL AND TRANSPORT". Even though it is not anticipated that the awarded contractor will encounter refuse during the earthwork for this project, will the city either delete the referenced Section (4.1 of 31 05 13) or add a bid item for REFUSE REMOVAL AND TRANSPORT?

A56. A bid item has been added for "Refuse Excavation and Disposal".

Q57. Is there a Geotechnical Soil Report prepared for the MIRAMAR LANDFILL STORM WATER IMPROVEMENTS project Bid No. k-18-1599-DBB-3?

A57. No.

C. CLARIFICATIONS

1. Page 20 of this Addendum is an Exhibit in reference to Section B, Bidder's Questions, Answer 20, page 8.
2. Page 21 of this Addendum is an Exhibit in reference to Section B, Bidder's Questions, Answer 42, page 12.

D. NOTICE INVITING BIDS

1. To the Notice Inviting Bids, Item 3, Estimated Construction Cost, page 4, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 3. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$3,720,000.**

E. ATTACHMENTS

1. To Attachment A, Scope of Work, Item 2, Estimated Construction Cost, page 21, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 2. **ESTIMATED CONSTRUCTION COST:** The City's estimated construction cost for this project is **\$3,720,000.**
2. To Attachment A, Scope of Work, Item 4, Contract Time, page 21, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 4. **CONTRACT TIME:**
 - 4.1 Project shall be completed by **December 30, 2018.**
 - 4.2 All work except for the work listed in 4.3 shall be completed within **100 Working Days** of the Notice To Proceed (NTP)
 - 4.3 Work associated with Erosion Control areas 2, 3, and 4 (hydroseeding including 30 days for plant establishment) shall be completed between **October 1st, 2018 and December 30th, 2018.**

F. SUPPLEMENTARY SPECIAL PROVISIONS

1. To Attachment E, Technicals, Section 01 57 23, Temporary Storm Water Pollution Controls, Part 4 – Measurement and Payment, Item 4.1, Water Pollution Control Plan, Sub-item A, page 91, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 - A. All work associated with the Storm Water Pollution Prevention Plan (SWPPP) including Contractor preparation, implementation, permitting, or other site controls necessary for Temporary Storm Water Pollution Controls for this project shall be included in the bid items for SWPPP Development, SWPPP Implementation, and SWPPP Permit Fee.
2. To Attachment E, Technicals, Section 31 25 14, Erosion and Sedimentation Control, Part 4 – Measurement and Payment, Item 4.6, Erosion Control Area 4 (Sheets G-2, C-1), Sub-item A, page 144, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 - A. The unit price for "Erosion Control Area 4" shall include costs for site preparation and furnish/install of all materials required to

fully complete the installation per the plan, with the exception of Gabion Check Structures, which will be paid separately under the bid item entitled Greenery Gabion Check Structures.

3. To Attachment E, Technicals, Section 32 10 00, Asphalt Concrete Paving, Part 3, Execution, Item 3.3 Asphalt Concrete, Sub-item A, page 147, **DELETE** in its entirety.
4. To Attachment E, Technicals, Section 33 40 00, Drainage, Part 4, Measurement and Payment, Item 4.2, Articulated Concrete Block Channel on Road Grades >5% (Sheet C-7, Detail 8), Sub-item A, page 162, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 - A. The unit price for "Articulated Concrete Block Channel on Road Grades >5%" shall include costs for grading, subgrade preparation, furnish/install of woven geotextile mat, and furnish/install of articulated concrete block mat.
5. To Attachment E, Technicals, Section 33 40 00, Drainage, Part 4, Measurement and Payment, Item 4.3, Channel with Coarse Aggregate on Road Grades <5% (Sheet C-7, Details 7 and 9), Sub-item A, page 163, **DELETE** in its entirety and **SUBSTITUTE** with the following:
 - A. The unit price for "Channel with Coarse Aggregate on Road Grades <5%" shall include costs for grading, subgrade preparation, furnish/install of woven geotextile mat, and furnish/install of coarse aggregate.
6. To Attachment E, Technicals, Section 33 40 00, Drainage, Part 4, Measurement and Payment, page 164, **ADD** the following:

4.9 ROCK SHOULDER WITH COARSE AGGREGATE

- A. The unit price for "Rock Shoulder with Coarse Aggregate" shall include costs for grading, subgrade preparation, and furnish/install of coarse aggregate.
- B. Payment for "Rock Shoulder with Coarse Aggregate" shall be determined by totaling tonnages reported on certified weighmaster certificates for placement of coarse aggregate within the accepted work limits.

G. ADDITIONAL CHANGES

- The following are additional changes to the Line Items in the PlanetBids Tab:

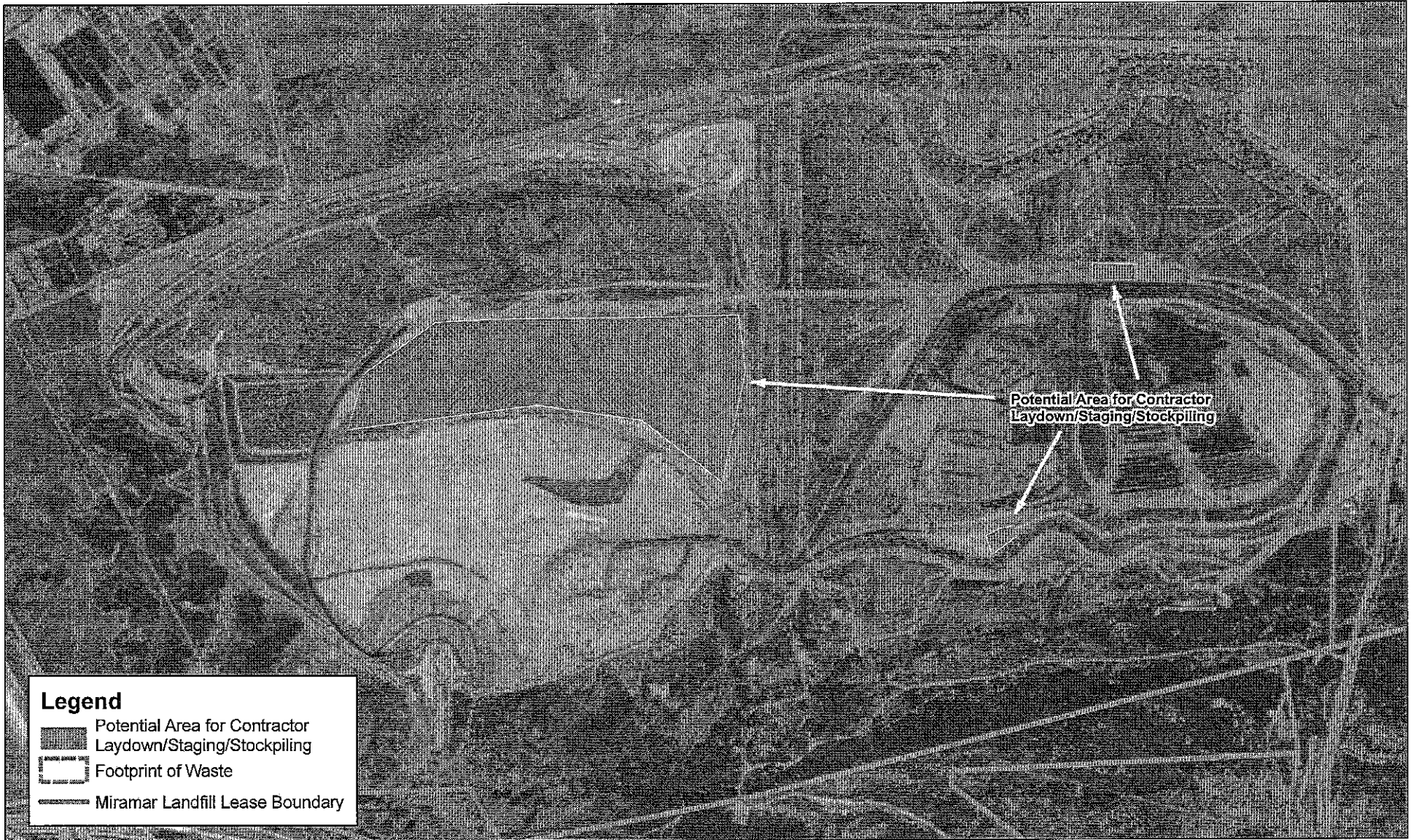
For clarity where applicable, **ADDITIONS**, if any, have been **Underlined** and **DELETIONS**, if any, have been **~~Stricken out.~~**

Section	Item Code	Description	Unit of Measure	Quantity	Payment Reference
Main Bid	237110	Woven Geotextile Mat	SY	14360	31 05 19.13.4
Main Bid	237710	Geosynthetic Subgrade Reinforcing	SY	28500 <u>57000</u>	31 05 19.19.4
Main Bid	237990	Cellular Confinement System with Aggregate and Geotextile for Road Shoulders	SF	10110 <u>14230</u>	31 05 19.29.4
Main Bid	<u>237310</u>	<u>Refuse Excavation and Disposal</u>	<u>CY</u>	<u>200</u>	<u>31 05 13 4.1</u>
Main Bid	<u>237110</u>	<u>Rock Shoulder with Coarse Aggregate</u>	<u>TON</u>	<u>6750</u>	<u>33 40 00 4.9</u>




James Nagelvoort, Director
Public Works Department

Dated: *November 2, 2017*
San Diego, California

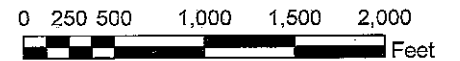
JN / AJ / cc



Legend

-  Potential Area for Contractor Laydown/Staging/Stockpiling
-  Footprint of Waste
-  Miramar Landfill Lease Boundary

Potential Area for Contractor Laydown/Staging/Stockpiling





Bid Results

Bidder Details

Vendor Name RAL Investment Corporation
Address 11696 Sorrento Valley Road STE 200
 San Diego, CA 92121
 United States
Respondee Keith Adamek
Respondee Title Vice President
Phone 858-444-1963 Ext.
Email keith@sscbuild.com
Vendor Type LAT,MALE,PQUAL,HUBZ,CADIR,Local
License # 927409
CADIR 1000016529

Bid Detail

Bid Format Electronic
Submitted November 15, 2017 1:58:03 PM (Pacific)
Delivery Method
Bid Responsive
Bid Status Submitted
Confirmation # 122984
Ranking 0

Respondee Comment

Buyer Comment

Attachments

File Title	File Name	File Type
Contractors Certification of Pending Actions	Silverstrand - Contractors Cert of Pending Actions.pdf	Contractor's Certification of Pending Actions
Sub additive, deductive alternate	Subcontractor Additive, deductive alternate.pdf	Subcontractors Additive Deductive Alternate Form
Bid Bond	Silverstrand - Bid Bond.pdf	Bid Bond

Line Items

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
	Main Bid					
1	Bonds (Payment and Performance)					
	524126	LS	1	\$51,000.00	\$51,000.00	
2	SWPPP Development					
	541330	LS	1	\$19,683.00	\$19,683.00	
3	SWPPP Implementation					
	237990	LS	1	\$41,483.00	\$41,483.00	
4	SWPPP Permit Fee (EOC Type I)					
	541330	AL	1	\$1,000.00	\$1,000.00	

Bid Results

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
5	Field Orders (EOC Type II)					
		AL	1	\$200,000.00	\$200,000.00	
6	Mobilization					
	237110	LS	1	\$181,843.00	\$181,843.00	
7	Unclassified Excavation (As Required for Roadway and Shoulder Work)					
	237310	CY	11180	\$7.90	\$88,322.00	
8	Class 2 Aggregate Base					
	237310	CY	8970	\$19.40	\$174,018.00	
9	Milled Asphalt for Use in Place of Class II Base (When Directed by Engineer)					
	237310	CY	8970	\$8.20	\$73,554.00	
10	Asphalt Concrete					
	237310	TON	8690	\$80.80	\$702,152.00	
11	Retroreflective Pavement Markers					
	237310	EA	98	\$2.60	\$254.80	
12	Painted Traffic Stripes					
	237310	LF	30000	\$0.50	\$15,000.00	
13	Geosynthetic Subgrade Reinforcing					
	237710	SY	57000	\$3.60	\$205,200.00	
14	Cellular Confinement System with Aggregate and Geotextile for Road Shoulders					
	237990	SF	14230	\$8.20	\$116,686.00	
15	Cellular Confinement System with Aggregate and Geotextile for Stabilization					
	237990	SF	13200	\$9.30	\$122,760.00	
16	Channel with Coarse Aggregate on Road Grades < 5%					
	237110	SF	16375	\$4.00	\$65,500.00	
17	Articulated Concrete Block Channel on Road Grades = 5%					
	237110	SF	12000	\$9.00	\$108,000.00	
18	Type 2 Energy Dissipaters (City of San Diego Standard Drawing SDD-104)					
	237110	EA	3	\$3,216.00	\$9,648.00	
19	Tracking Control Device (Sheet C-7, Detail 6)					
	238910	EA	3	\$54,547.00	\$163,641.00	
20	Low Flow Crossing (2 Total) (Sheet C-6, Detail 1)					
	237110	EA	2	\$12,944.00	\$25,888.00	

Bid Results

Type	Item Code	UOM	Qty	Unit Price	Line Total	Comment
21	Inlet Protection (Sheet C-6, Detail 2)					
	237110	EA	4	\$6,344.00	\$25,376.00	
22	Lower Greenery Inlet Protection (Sheet C-6, Detail 5)					
	237110	EA	1	\$9,929.00	\$9,929.00	
23	Greenery Gabion Check Structures (Sheet C-6, Detail 3)					
	237110	EA	19	\$3,751.00	\$71,269.00	
24	Erosion Control Area 1 (Sheet G-2)					
	561730	LF	13550	\$7.50	\$101,625.00	
25	Erosion Control Area 3 (Sheet G-2)					
	561730	ACRE	5	\$11,835.00	\$59,175.00	
26	Erosion Control Area 4 (Sheet G-2)					
	561730	ACRE	3	\$7,910.00	\$23,730.00	
27	Refuse Excavation and Disposal					
	237310	CY	200	\$29.60	\$5,920.00	
28	Rock Shoulder with Coarse Aggregate					
	237110	TON	6750	\$17.40	\$117,450.00	
				Subtotal	\$2,780,106.80	
	Alternate Items					
29	Erosion Control Area 2 (Sheet G-2, C-1)					
	561730	ACRE	121	\$5,100.00	\$617,100.00	
				Subtotal	\$617,100.00	
				Total	\$3,397,206.80	

Subcontractors

Name & Address	Description	License Num	CADIR	Amount	Type
Kirk Paving, Inc. 8722 Winter Gardens Blvd. Lakeside, CA 92040 United States	Asphalt	749206	1000002341	\$659,000.00	CADIR,PQUAL,SDB,SLBE
Western Gardens Landscaping, Inc. 4616 Pannonia Rd. Carlsbad, CA 92008 United States	Hydroseeding and Hydromulch Installations	662550	1000004289	\$454,000.00	PQUAL,SLBE,CADIR