PUBLIC WORKS NOTICE INVITING BIDS PKARC-0232

1. The Riverside County Regional Park and Open-Space District, herein called ("District"), invites sealed bids for:

District Re-Paving at Lawler County Park & Alpine Camp

The CONTRACTOR shall furnish all labor, materials, parts, equipment, tools, supervision, services, transportation, waste disposal, facilities and other required items/services necessary to complete the Work in strict accordance with all Bid & Contract Documents at the following location(s):

Lawler County Park	Alpine Cabins
19741 Highway 243,	19753 Highway 243,
Idyllwild, CA 92544	Idyllwild, CA 92544

ESTIMATED PROJECT COST: \$125,000

2. BID BOND OR CASHIERS CHECK IS REQUIRED WITH THIS RFB

More detail regarding the Bid Bond or Cashiers Check can be found within this RFB

3. CONTRACT DOCUMENTS

Each Bid Response shall be in accordance with all of the Contract Documents.

- a. **GENERAL CONDITIONS:** The General Conditions applicable to the work are included in this RFB as Attachment A General Provisions.
- b. **Reports:** The following reports are applicable to this project and made part of the Contract Documents:
 - 1. Attachment A General Provisions
 - 2. Attachment B Bid Response Pages
 - 3. Attachment C Scope of Work
 - 4. Attachment D ADA Plan
 - 5. Attachment E Construction BPMs

4. <u>LICENSE REQUIRED</u>

The following license is required for this project:

- a. CONTRACTOR shall possess a "C-32" Parking and Highway Improvement Contractor License, and a "C-12" Earthwork and Paving Contractors License in the State of California, at the time Bid Response is submitted.
- **5.** Any contact with District or County of Riverside ("County") personnel regarding this procurement, other than the Purchasing Agent as identified in this RFB, may result in disqualification of submitted Bid Response.

6. QUALITY ASSURANCE

a. The CONTRACTOR shall provide documented experience in the area of fencing installation.

7. TENTATIVE SCHEDULE OF EVENTS

1.	Release of Request for Bids:	Date: 8/11/2022
2.	Mandatory Pre-Bid Meeting No. 1: Attendees more than five (5) minutes late will not be allowed to attend. The District will not accept a Bid Response from a Bidder that did not attend the Mandatory Pre-Bid Meeting. RSVP: prior to pre-bid meeting is preferred. Please email your RSVP to rijames@rivco.org and include the first and last name of attendees along with company name.	Date: 8/24/2022 Time: 10:00 AM PT Location: Lawler County Park 19741 Highway 243, Idyllwild, CA 92544
3.	Mandatory Pre-Bid Meeting No. 2: Attendees more than five (5) minutes late will not be allowed to attend. The District will not accept a Bid Response from a Bidder that did not attend the Mandatory Pre-Bid Meeting. RSVP: prior to pre-bid meeting is preferred. Please email your RSVP to rijames@rivco.org and include the first and last name of attendees along with company name.	Date: 8/24/2022 Time: 11:00 AM PT Location: Alpine Cabins 19753 Highway 243, Idyllwild, CA 92544
4.	Deadline For E-Mail Submission Of Questions to Purchasing Agent:	Date: 8/31/2022 Time: At 1:30 p.m Pacific time Must be in the form of an Email to Purchasing Representative
5.	District's E-Mail Response to Bidder Questions:	Responses to questions will be emailed out no later than 9/2/2022
6.	Deadline For Bid Response:	Date: 9/8/2022 on or before 1:30 PM Pacific time

8. BID RESPONSE SUBMISSION OPTIONS:

- a. Physical Bid Response Submission:
 - i. The outside of the Envelope shall contain:
 - 1. The RFB number,
 - 2. RFB Title.
 - 3. RFB Deadline For Submission time
 - 4. Bid Response time stamp of when the Bid Response was received by the District
 - 5. Delivered to:

Riverside County Regional Park & Open-Space District Guest Services

Attn: Lisa Rolland & Josh Lowe Bidder Quote #PKARC-0232

4600 Crestmore Road Jurupa Valley, CA 92509

- b. (preferred): E-Mail Submission, joshlowe@rivco.org and LRolland@rivco.org
 - i. E-Mail shall include the following information:
 - 1. RFB number
 - 2. RFB Title
 - 3. Bid Response documents
 - 4. Upload a copy of required Bid Bond within Bidder's Bid Response, or submit Cashier's Check or Certified Check submitted to address listed prior to the Bid Due Date.

9. <u>BID RESPONSE SUBMISSION REQUIREMENTS</u>

- a. Bidder's Bid Response shall include:
 - i. Bid Bond or Cashiers Check in the amount of 10% of the Bid Response Amount
 - ii. Bid Response Pages
 - iii. Contractor shall submit documentation showing similar work experience in the last 3 years.
 - iv. Copy of current Contractors License required for the project.
 - v. Copy of current Department of Industrial Relations (DIR) proof of registration.
 - vi. Copy of current certificate of liability insurance.
 - vii. Project schedule.
 - viii. Warranty documents (if applicable) for labor and product
 - ix. Project overview and method of installation (include items or service not covered, safety plan, preparation and completion methodology, etc.)
 - x. Itemized breakdown of materials list and cost.
 - xi. Itemized breakdown of labor hours and cost.
- b. The District is not responsible for issues with Bid Submission. Furthermore, the District will not be responsible for a file size being to large to submit via email. In the event the Bidder's Bid Response is too large to fit within one (1) email, the District will accept multiple emails.
- c. Under no circumstances will a Bid Response be accepted after the Deadline for Bid Response
- 10. UNIFORM PUBLIC CONSTRUCTION COST ACCOUNTING ACT The District has adopted the Uniform Public Construction Cost Accounting Act (Public Contract Code Section 22000 et seq.) pursuant to County Ordinance No. 757. The District through its Purchasing Agent may bid and award a contract pursuant to the procedures stated in the Act. The Purchasing Agent's current maximum authority under the Act is \$175,000 for a single contract. All applicable public works requirements still apply.

11. PREVAILING WAGES AND LABOR CODE REQUIREMENTS

This is a public works project subject to compliance monitoring and enforcement by the California Department of Industrial Relations ("DIR"). The Awarded Bidder shall comply with all applicable provisions of the California State Labor Code regarding prevailing wages, DIR Division of Apprenticeship Standards Labor and other requirements, including but not limited to Labor Code Sections 1771.4, 1773.1, 1774, 1775, 1776, and 1777.5.

The District, through County Purchasing and Fleet Services, has obtained the most recent determination of general prevailing rates of per diem wages applicable to the work, and for holiday and

overtime work, including employer payments for health and welfare, pension, vacation, and similar purposes; and this will be made available to any Bidder upon request. This information can also be obtained at the California State Department of Industrial Relations, 464 West Fourth St., San Bernardino; or online at www.dir.ca.gov/DLSR/PWD.

The Awarded Bidder shall post job site notices as prescribed by regulation. Awarded Bidder and Sub-Contractor shall furnish records specified in Labor Code Section 1776 to the Labor Commissioner.

Pursuant to Labor Code Section 1771.1, any Bidder submitting a Bid Response, or Sub-Contractor listed within a Bid Response, must be currently registered with the DIR and qualified to perform public work pursuant to Labor Code Section 1725.5. No Bidder and/or Sub-Contractor will be awarded without proof of current DIR registration.

- **12.** The Awarded Bidder shall hold the required California Licenses, in good standing with the CSLB, at the time of submitting a Bid Response and shall continuously thereafter until project completion. A Sub-Contractor may possess the required CSLB License only if allowed by applicable law. Licensure statements are made under penalty of perjury.
- **13.** The Awarded Bidder shall furnish performance and payment bonds and insurance documents in accordance with the requirements stated in this RFB.

INSTRUCTIONS TO BIDDERS

- 1. <u>CONTRACTOR REGISTRATION</u> The awarded bidder shall register all of its current information with the County's online database at www.purchasing.co.riverside.ca.us, including W-9 and IRS 147C forms; or update its information if already registered. It is suggested that all bidders register in the District's database so their information will be available for future consideration.
- 2. <u>PRICES/NOTATIONS</u> All prices/notations must be typewritten or written in ink. No erasures permitted. Mistakes shall be crossed out, corrections made adjacent and initialed by person signing document. Each item shall be bid separately. All signatures must be by an authorized representative of the Bidder.
- **PRICING/TERMS/TAX** All pricing shall be F.O.B. destination, including applicable tax, permits, and licenses. The District pays California sales tax and is exempt from Federal excise tax. The Bidder shall pay all taxes related to the work. In the event of an extension error, the unit price shall prevail.
- **4. ADDENDA TO RFB** The District reserves the right to issue such Addenda to the RFB as it may desire at any time prior to the time for Deadline for Bid Response. The number and date of each Addendum shall be listed within the Bidder's Bid Response in the space provided within the Bid Forms.
- **DISTRICT RESERVATION OF RIGHTS** The District reserves the right to reject any or all Bid Responses, to waive any discrepancy, technicality or informalities in a Bid Response or in the bidding process, and to make the award in any manner determined by the District to be most advantageous to the District.
- **6. <u>WITHDRAWAL OF BID</u>** A Bid Response may be withdrawn only prior to the Deadline for Bid Response date and time. No Bidder may withdraw or modify its Bid Response for a period of one-hundred and twenty (120) calendar days after the Deadline for Bid Response date.
- 7. INTERPRETATION OF THE BID DOCUMENTS Discrepancies in and omissions from any of the Contract Documents, questions as to their meaning or uncertainties that might cause disputes, shall immediately be brought to the attention of the District by the Bidder. Any interpretation of the terms of the Contract Documents will be made only by written Addenda issued by the District and available at www.purchasing.co.riverside.ca.us. The District will not be responsible for any other explanations or interpretations.
- **8.** ADDITIONAL INFORMATION Prior to award, the District reserves the right to require additional information from a Bidder, including but not limited to information regarding the Bidder's financial responsibility or other information the District determines is necessary to ascertain whether the Bid Response is in fact the lowest responsible and responsive bid submitted
- 9. AWARD OF CONTRACT The Contract, if awarded, will be to the lowest responsive and responsible Bidder whose Bid Response complies with all of the requirements prescribed. Such award, if made, will be within one-hundred twenty (120) calendar days after the opening of the Bid Responses. After the opening of the Bid Responses, each Bid Response will be evaluated by Purchasing. All Bid Responses will then be compared to each other and to the Purchasing's cost estimate on the basis of the total lump sum bid.

ATTACHMENT A GENERAL PROVISIONS

GENERAL - The material and services set forth in this bid/agreement shall be furnished by the bidder/seller subject to all the terms and conditions listed herein which bidder/seller in accepting an order agrees to be bound by and to comply with in all particulars. No other terms or conditions shall be binding upon the parties unless hereafter accepted by them in writing. Written acceptance or the beginning of performance of all or any portion of the services herein shall constitute unqualified acceptance of all these terms and conditions.

1. **DEFINITIONS** -

- A. The Owner, the Contractor and the Architect are those named as such in the Agreement.
- B. "Approved" shall mean "as approved in writing by the "Architect".
- 2. CORRELATION AND INTENT OF DOCUMENTS The Specifications and Drawings are intended to be complimentary so that any work exhibited in the Drawings, but not mentioned in the Specifications, or vice versa, shall be executed to the true intent thereof and the same as if both exhibited in the Drawings and set forth in the Specifications.
- 3. **DETAIL DRAWINGS AND INSTRUCTION** The Architect will furnish to the Contractor, with reasonable promptness, such further detailed explanations, instructions and drawings as may be necessary for the proper execution of the work. In giving such additional instructions, the Architect shall have the authority to make minor changes in the work not involving extra cost, and not inconsistent with the intent of the Drawings and Specifications or the purposes of the building. The Contractor shall conform to same consistency with the intent of the Contract, Drawings and Specifications. The Contractor shall not proceed with any portion of the work unless Contractor is in possession of Plans and information necessary for its proper execution. The execution of the work specially detailed or explained, without a written Change Order signed by the Owner and the Architect, shall constitute an acceptance by the Contractor of detailed drawings or information as being in conformity with the original intent of the Contract Documents.
- 4. NO ORAL AGREEMENTS No oral agreement or conversation with any officer, agent, or employee of the Owner, either before or after execution of the Contract shall affect or modify any of the terms or obligations contained in any of the documents comprising said Contract.
- 5. DRAWINGS AND SPECIFICATIONS The Contractor shall keep on the work site a copy of the Drawings and Specifications, including all authorized Change Orders, in good condition, which shall always be available to the Owner, Architect, and their representatives. All Drawings, Specifications and copies thereof furnished to the Contractor are the property of the Owner and shall not be used on other work without Owner's consent. Upon completion of this project, all copies of the Drawings and Specifications shall be returned to the Architect, as agent of the Owner.
- 6. MATERIALS, WORKMANSHIP All materials used in the project, unless otherwise specified, shall be new, of the types and grades specified, and the Contractor shall, if requested, furnish evidence satisfactory to the Architect that such is the case. All workmanship shall be of the best quality and all workmen shall be suitably skilled in the work which they perform.
- 7. DEFECTIVE WORK AND MATERIALS The Contractor shall promptly remove from the premises all materials condemned by the Architect as failing to conform to the Contract, whether incorporated in the work or not, and where materials and/or work have been condemned by the Architect, the Contractor shall promptly replace and re-execute his/her work in accordance with the Contract and without expense to the Owner and shall bear the expense of making good all work of other Contractors destroyed or damaged by such removal or replacement. If the Architect and Owner deem it inexpedient to correct work injured or done not in accordance with the Contract, the difference in value together with a fair allowance for damage shall be deducted from the sum agreed to be paid the Contractor for the performance of the Contract.
- 8. SUBSTITUTIONS OF MATERIALS AND EQUIPMENT Materials and equipment, including specially designated makes, must be furnished as specified except when equals are approved by the Architect. Equals will not be accepted unless the Contractor requests and receives permission in writing from the Architect to make specific substitutions. Requests shall be made within sufficient time to allow the Architect to investigate the merits of the proposed substitution, and the Contractor shall present complete details with specific explanations of the characteristics of those details which differ from the Specifications.
- 9. CONTRACTOR'S TITLE TO MATERIALS No materials or supplies for the work shall be purchased by the Contractor or by any Subcontractor subject to any chattel mortgage or under a conditional sale or other agreement by which an interest is retained by the seller. The Contractor warrants that Contractor has good title to all materials and supplies for which Contractor accepts partial payment.
- 10. LICENSES, PERMITS, LAWS, AND REGULATIONS The Contractor, acting in the name of the Owner, shall obtain and pay, only where legally required, for all licenses and permits, inspections and inspection certificates, required to be obtained from or made by any authority having jurisdiction over any part of the work included in the Contract. The Contractor shall comply with all laws, ordinances and regulations applicable to the work. If the Contractor ascertains at any time that any of the requirements of this Contract are at variance with applicable law, ordinances, regulations or building code requirements, Contractor shall promptly notify the Architect, and shall not proceed with the work in question, except at his/her own risk until the Architect has had an opportunity to determine the extent of the responsibility for the variance. Before the certificate of final payment on the Contract is issued, the Contractor may be required to submit all licenses, permits, and certificates of inspection to the Architect.
- 11. PATENTS, ROYALTIES AND TAXES The Contractor shall hold the Owner and the Architect harmless from liability of any nature, including costs and expenses, for or on account of any patented or unpatented article, appliance, or device used in the performance of

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the Contract and shall defend all suits or claims for infringement of any patent right. Contractor shall pay all applicable Federal, State and local sales taxes and all other taxes pertinent to the work involved in this Contract.

- 12. ENGINEERING, SURVEY AND SITE EXAMINATION The Contractor shall be responsible for having ascertained pertinent local conditions such as location, accessibility conditions under which the work is to be performed. No claim for allowances because of his/her error or negligence in acquainting himself with the conditions at the site will be recognized.
- 13. PROTECTION OF WORK AND PROPERTY The Contractor shall at all times safely guard the Owner's property from injury or loss in connection with this Contract. Contractor shall at all times safely guard and protect his/her own work and adjacent property from damage. All passageways, guard fences, lights and other facilities required for protection by State or municipal laws and regulations and local conditions shall be protected against damage, and pavements that are accidentally damaged or necessarily cut shall be replaced with the same material upon completion of the work.
- **14. ACCIDENT PREVENTION** Precaution shall be exercised at all times for the protection of persons, including employees, and property. The safety provisions of applicable laws, building and construction codes shall be observed. The Contractor shall maintain sufficient safeguards, such as railings, temporary walks, lights, etc., against the occurrence of accidents, injuries, damage or hurt to any person or property and shall also be responsible for the same if such occur.
- 15. EMERGENCIES In an emergency affecting the safety of life or of the structure or of adjoining property, the Contractor shall take all necessary and proper steps to prevent any threatened loss or injury. If practicable, the Contractor shall communicate with the Architect or the Owner and shall be guided by the directions and advice of the Architect or Owner, as the case may be, if the character of the emergency is such as to require action with such short limits of time or under circumstances rendering that impracticable, then the Contractor shall act independently and upon his/her own responsibility, subject to the direction and control of the Architect or the Owner as soon as it may become practicable to obtain the same.
- 16. ACCESS TO THE WORK The Architect, Owner, and their representatives shall have access at all times to the work for purposes of inspection, wherever said work is in preparation or progress, and the Contractor shall provide proper facilities for such access and inspection.
- 17. INSPECTION OF THE WORK All material and workmanship (if not otherwise designated by the Specifications) shall be subject to inspection, examination, and test by the Architect at any and all times during manufacture and/or construction and at any and all places where such manufacture and/or construction are carried on. The Architect shall have the right to reject defective material and workmanship or require its correction. Should the Specifications, the Architect's instructions, any law, ordinances or public authority require any work to be specially tested or approved, the Contractor shall give the Architect timely notice of it's readiness for inspection and if the inspection is by an authority other than the Architect, of the date fixed for such inspection. If any work should be covered, without proper inspection and without approval or consent of the Architect, it shall, if required by the Architect, be uncovered for examination at the Contractor's expense.
- 18. INSPECTOR (Clerk of the Works) The Owner may employ an inspector, who will act as a direct representative of the Owner and the Architect, and who shall provide full-time and continuous personal supervision and inspection of the work. Such supervision and inspection shall not, in any way, relieve the Contractor from responsibility for full compliance with all of the terms and conditions of the Contract, nor be construed to lessen to any degree, the Contractor's responsibility for providing efficient and capable superintendence as required herein. The inspector is not authorized to make changes in the Drawings or Specifications, nor shall his/her approval of work and methods relieve the Contractor of responsibility for the correction of subsequently discovered defects. No work of any kind shall be performed on the project site outside of the regularly established working hours without the knowledge and consent of the inspector.
- 19. SUPERVISION OF CONTRACTOR The Contractor shall keep on the work continuously during the progress, a competent Superintendent and required assistant who shall be satisfactory to the Architect. The Superintendent shall be qualified to, and shall, represent the Contractor during all times when the Contractor is not present and all orders or directions issued to the Superintendent by the Architect shall be as binding as if given to the Contractor personally. Both the Contractor and the Superintendent shall cooperate to provide efficient and complete supervision over all phases of the work. The supervision of the Architect shall not lessen the responsibility of the Contractor to furnish supervision, nor shall it relieve the Contractor of responsibility for the correction of subsequently discovered defects.
- 20. CHANGES IN THE WORK The Owner, upon agreement with the Contractor, without invalidating the contract, may order extra work or make changes by altering, adding to, or deducting from the work, the Contract sum being adjusted accordingly. The Contractor shall not be authorized to comply with such orders without previously obtaining written authority therefore from the Owner and Architect. All such work shall be executed under the conditions of the original Contract, except that any claims for extension of time caused thereby shall be adjusted at the time of ordering such change. The Contractor shall, when requested by the Architect, furnish an itemized breakdown of the quantities and prices used in computing the value of any change that may be ordered. If in the opinion of the Contractor any instructions, detail Drawings, or notices of any description issued by the Architect or Owner involve extra cost above the contract price Contractor shall immediately give the Architect written notice to that effect before proceeding with the work involved. The execution of work without prior submission of such written notice shall constitute the Contractor's acceptance of the work as being within the Contract price.

DELAYS AND EXTENSION OF TIME - If the Contractor is delayed at any time in the progress of the work by any causes which are beyond the Contractor's control, in the opinion of the Architect, then the time of completion shall be extended for such reasonable time as the Architect may decide. Prompt claim therefore shall be made in writing to the Architect. Normal seasonal rainfall shall not be considered reason for time extension.

- 21. OWNER'S RIGHT TO DO WORK Should the contractor, at any time during the process of construction, fail or refuse to furnish enough materials and/or workers to properly prosecute the work, unless prohibited from so doing through the action of the Owner, the Architect, or other authorized official agencies, the Owner, after giving 10 day's written notice to the Contractor may, without prejudice to any other rights Contractor may have, proceed to furnish the materials and workers necessary to proceed with and/or complete the work, and may deduct the cost thereof, together with reasonable expenses arising from such procedure, from any amounts then due or which may thereafter become due to the Contractor.
- 22. CONTRACTOR'S RIGHT TO TERMINATE THE CONTRACT. If through no fault of the Contractor, or of anyone employed by Contractor (1) the work is stopped by order of any court or governmental authority, other than the Owner, (2) the Architect capriciously or arbitrarily fails to issue any certificate for payment within ten days after it is due, or (3) the Owner fails to pay to the Contractor, within 60 days

after presentation of the Architect's certificate to the Owner, any sum certified by the Architect, then the Contractor may upon 10 days' written notice to the Owner and the Architect stop work or terminate the Contract, and the Owner shall be liable to the Contractor for any loss sustained and reasonable profit.

- 23. LIENS. The Contractor agrees that at any time upon request of either the Owner or the Architect, Contractor will submit a sworn statement setting forth the work performed or material furnished by Subcontractors and material suppliers, and the amount due and to become due to each, and that before the final payment called for hereunder Contractor will, if requested, submit to the Owner or the Architect a complete set of vouchers showing what payments have been made for materials and labor used in connection with the work.
- 24. ASSIGNMENTS. The Contractor shall not assign the whole or any part of this Contract without the written consent of the Owner and all Sureties executing bonds on behalf of the Contractor in connection with said Contract.
- 25. OWNER'S RIGHT TO TERMINATE THE CONTRACT. If the Contractor should be adjudged as bankrupt, or if Contractor should make a general assignment for the benefit of his/her creditors, or if a receiver should be appointed on account of his/her insolvency, or if Contractor should, except in cases stated in the following paragraph, persistently or repeatedly refuse or fail to supply enough properly skilled workers or proper materials, or if Contractor should fail to make prompt payment to Subcontractors or for materials or labor, or persistently disregard laws, ordinances or the instructions of the Architect, or otherwise be guilty of a substantial violation of any provision of the Contract, then the Owner, upon certificate of the Architect that sufficient cause exists to justify such action, may, without prejudice to any other right or remedy after giving the Contractor 10 day's written notice, terminate the employment of the Contractor and take possession of the premises and of all materials, tools and appliances thereon and finish the work by whatever method Contractor may deem expedient. In such case, the Contractor shall not be entitled to receive any further payment until the work is finished. If the unpaid balance of the Contract price shall exceed the expense of finishing the work including compensation to the Architect for his/her additional services, such excess shall be paid to the Contractor. If such expense shall exceed such unpaid balance, the Contractor shall pay the difference to the Owner. If the construction of the project herein is damaged, which damage is determined to have been proximately caused by an Act of God, in excess of 5% of the contract amount, provided that the work damaged is built in accordance with applicable building standards and the plans and specifications, then the Owner, upon certification by the Architect, may, without prejudice to any other right or remedy, terminate the contract.
- **26. PAYMENTS WITHHELD.** The Architect may withhold or, on account of subsequent discovered evidence, nullify the whole or a part of any certificate for payment to such extent as may be necessary to protect the Owner form loss on account of:
 - A. Defective work not remedied.
 - B. Claims filed, or reasonable evidence indicating probable filing of claims.
 - C. Failure of the Contractor to make payments properly to Subcontractor or for material or labor.
 - D. A reasonable doubt that the contract can be completed for the balance then unpaid.
 - E. Damage to another Contractor.
 - F. Default of the Contractor in the performance of the terms of the Contract.
- 27. MUTUAL RESPONSIBILITY OF CONTRACTORS. If the Contractor or any of his/her Subcontractors or employees cause loss or damage to any separate Contractor on the work, the Contractor agrees to settle with such separate Contractor by agreement or arbitration, if Contractor will so settle. If such separate contractor sues the Owner, on account of any loss so sustained, the Owner shall notify the Contractor, who shall indemnify and save harmless the Owner against any expenses or judgment arising therefrom.
- 28. SEPARATE CONTRACTS. The Owner reserves the right to award other contracts in connection with the project, and the work under which may proceed simultaneously with the execution of this Contract. The Contractor shall coordinate operations with those of other Contractors. Cooperation will be required in the arrangement for the storage of materials, and in the detailed execution of the work. The Contractor, including his/her Subcontractors, shall keep himself informed of the progress and the detail work of other Contractors and shall notify the Architect immediately of lack of progress or defective workmanship on the part of other Contractors where such delay or such defective workmanship will interfere with his/her own operations. Failure of a Contractor to keep informed of the work progressing on the site and failure to give notice of lack of progress or defective workmanship by others shall be construed as

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acceptance by Contractor of the status of the work as being satisfactory for proper coordination with his/her own work.

29. SUBCONTRACTS.

- A. The Contractor may, without additional expense to the Owner, utilize the service of Subcontractors on those parts of the work which are specified to be performed by Subcontractors.
- B. Nothing contained in the Specifications or Drawings shall be construed as creating any contractual relationship between any Subcontractor and the Owner. The divisions or sections of the Specifications are not intended to control the Contractor in dividing the work among Subcontractors or to limit the work performed by any trade.
- C. The Contractor shall be as fully responsible to the Owner for the acts and omissions of Subcontractors and of persons employed by them, as Contractor is for the acts and omissions of persons directly employed by Contractor.
- D. The Contractor shall be responsible for the coordination of the trades, Subcontractors and material suppliers engaged upon his/her work.
- E. Neither Owner nor Architect will undertake to settle any differences between the Contractor and his/her Subcontractors or between Subcontractors.
- F. The Contractor shall cause appropriate provisions to be inserted in all subcontracts relative to the work to bind Subcontractors to the Contractor by the terms of the General Conditions and other Contract Documents insofar as applicable to the work of Subcontractors.
- G. The Owner and the Architect reserve the right to approve all Subcontractors. Such approval shall be a consideration to the awarding of the Contract and unless notification to the contrary is given to the Contractor prior to the signing of the Contract, the list of Subcontractors which is submitted with his/her Proposal will be deemed to be acceptable.
- H. In accordance with Section 4104 of the California Public Contract Code his/her bid, shall set forth: (1) the name and location of the place of business of each Subcontractor who will perform work or labor, or render services to the Contractor in or about the construction of the work, or improvement, in an amount in excess of one half of 1% of the Contractor's total bid, and (2) the portion of the work which will be done by each such Subcontractor.
- I. In accordance with Section 4105 of the California Public Contract Code, if the Contractor fails to specify such subcontracts, Contractor agrees to perform that portion of the work.
- J. In accordance with Sections 4107 and 4107.5 of the California Public Contract code, no Contractor whose bid is accepted shall, without consent of the awarding authority, either: (1) substitute any person as a Subcontractor in place of the Subcontractor designated in the original bid; or (2) permit any such Subcontractor to be assigned or transferred, or allow work to be performed by anyone other than the original Subcontractor listed in the bid; or (3) sublet or subcontract any portion of the work in excess of one half of 1% of the Contractor's total bid as to which his/her original bid did not designate a Subcontractor.
- **30. THE ARCHITECT'S STATUS.** The Architect shall have general supervision and control of the work in all phases. He/she shall determine the amount, quality, acceptability and fitness of all parts of the work, interpret the Specifications, Drawings, and all other Contract Documents, and decide all questions pertaining to the work and shall be the final arbitrator thereof. He/she shall have authority to stop the work whenever, in his/her opinion, the terms and conditions of the Contract are not being fulfilled or the work is not being executed in a proper manner. He/she shall be the final authority in determining the amount of work satisfactorily completed and the amount of money due during the progress of construction.
- 31. USE OF PREMISES AND CLEANING. The Contractor shall maintain the entire premises under his/her control in an orderly condition. Contractor shall store his/her apparatus, materials, supplies and equipment in such a manner as will not interfere with the progress of his/her work or the work of other Contractors. Contractor shall not permit any load or stress to be placed upon any part of the permanent work which will endanger the safety or strength of said work. Contractor shall frequently clean up all refuse, rubbish, scrap materials and debris caused by his/her operation or by the operations of anyone under his/her direction, so that the site shall continuously present a neat, orderly and workmanlike appearance. Before final payment, Contractor shall remove all surplus material, false-work, temporary structures and fences, including foundations thereof, and debris of every nature resulting from his/her operations and to put the site in a neat orderly condition; to thoroughly clean and leave reasonably dust-free all finished surfaces on the interior of all buildings included in the Contract; and to wash and polish all glass, including the removal of all paint spatters and other defacements.
- 32. CORRECTION OF WORK AFTER FINAL PAYMENT AND GUARANTEE OF ONE YEAR. Neither the final certificate, final payment, nor any provision in the Contract Documents shall relieve the Contractor of responsibility for faulty materials or workmanship, and Contractor shall remedy any defects due thereto and pay for any damage to other work resulting therefrom, which may appear to be discovered up to one year after recording of the Notice of Completion. The Owner shall give notice of observed defects with reasonable promptness, and the Contractor shall proceed to remedy such defects immediately upon receiving such notification. Payment due to the Architect by the Owner for extra Architectural services required in the enforcement of Contractor's guarantee after acceptance of the work shall be paid to the Owner by the Contractor or his/her Surety.
- **33. OCCUPANCY BY THE OWNER.** The Owner shall have the right to occupy the building or use the improvements prior to the completion of the entire work, and that such occupancy or use shall not operate as an acceptance of any part of the work.
- 34. METHOD OF PAYMENT. Payments to the Contractor shall be made monthly and upon final completion of construction as follows: The Contractor shall present the hereinafter described statement to the Architect on the first day of each calendar month, or upon final completion of the work showing the percentage of the work completed. The statement shall include the value of all labor expended upon and materials incorporated into the work. It shall also include the value of materials to be incorporated into the work which have been delivered and satisfactorily stored on the site, as determined and approved by the Architect. Payment shall be made to the Contractor by the Owner upon presentation to the Owner of a certificate issued by the Architect in the amount of 90% of the value of the labor expended upon and materials incorporated into the work and 75% of the value of the materials delivered and satisfactorily

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stored upon the site. Said payments shall be based upon the total Contract price and only such labor and materials therein required. The final 10% of the Contract price shall be paid, upon the Architect's certificate thirty-five days after the recording of the Notice of Completion, subject, however, to the withholding of payment under Paragraph 25 of these General Conditions. Upon receipt of a payment request, the County shall review the request as soon as practicable after receipt for the purpose of determining that the payment request is a proper payment request and any payment request determined not to be a proper request suitable for payment shall be returned to the contractor as soon as practicable, but not later than seven (7) calendar days after receipt. The re turned request for payment shall be accompanied by a document setting forth in writing the reasons why the payment request is not proper. Any progress payment which is undisputed and properly submitted and remains unpaid for thirty (30) calendar days after receipt by County shall accrue interest to the Contractor equivalent to the legal rate set forth in subdivision (a) of Section 685.010 of the California Code of Civil Procedure. The number of days available to the County to make a payment without incurring interest pursuant to this section shall be reduced by the number of days by which the County exceeds the seven day return requirement set forth above.

- **35. TIME FOR COMPLETION.** The Contractor shall have the number of consecutive calendar days from the date of the commencement of construction, as set forth in the Agreement, within which to complete the work, subject, however, to extensions of time duly granted in the manner and for the reasons specified herein.
- **36. DAMAGES.** If the Contractor fails to complete the work within the time limits and/or under the conditions herein set forth, Owner shall deduct from any amounts due or to become due to the Contractor, an amount equal to all actual damages suffered by the Owner as a result of such failure, including, but not limited to, that which the Owner pays to the Clerk of the Works, the Owner's expenses for building rentals, travel and transportation, and additional salaries and for any other expenses attributable to the delay. The foregoing shall not limit damages which would be otherwise recoverable under applicable law.
- 37. GUARANTY BONDS. The successful bidder shall deliver to the Owner an executed Performance Bond on the attached form in an amount equal to 100% of the accepted bid as security for the faithful performance of the Contract, and also shall deliver to the Owner a separate executed Payment Bond on the attached form in an amount equal to 100% of the accepted bid as security to the payment of all persons performing labor and furnishing materials in connection with this Contract. The Sureties of all bonds shall be such Surety company or companies as are approved by the Owner, and as are authorized to transact business in the State of California. Cost of bonds shall be included in the bid and Contract price.
- **38. CLIMATIC CONDITIONS.** The Contractor shall provide and maintain heat, fuel, materials, and services necessary to protect all work and materials against injury from extreme heat, cold, dry winds, or dampers. The Architect shall have full authority to suspend operations on work when subject to damage by climatic conditions or because of insufficient curing or drying of surfaces or materials.
- **39.** LAWS CONCERNING THE OWNER A PART HEREOF. The Contract is subject to all provisions of the Constitution and laws of California governing, controlling or affecting the Owner, or the property, funds, operations or powers of the Owner, and such provisions are by this reference made a part hereof and of the Contract.
- **40. APPRENTICEABLE OCCUPATIONS.** The Contractor shall be responsible for compliance with Labor Code Section 1777.5 for all apprentice-able occupations on contracts involving \$30,000 or more requiring twenty working days or more.
- **41. BIDS \$25,000 OR LESS.** If the total amount bid is \$25,000 or less, then the Payment bond and Performance Bond are not required, provided that one payment of all compensation shall be made following satisfactory completion of all work.
- **42. DEPOSIT OF SECURITY.** In accordance with Public Contract Code Section 22300 and other applicable law, the Contractor may substitute securities for any monies withheld to insure performance under the Contract.
- 43. CONTRACTOR'S AND SUBCONTRACTOR'S INSURANCE. The Contractor shall not commence work under this Contract until Contractor has obtained all the insurance required under this paragraph and satisfactory proof of such insurance has been submitted to the Owner and said insurance has been approved by the Owner. Except for compensation insurance, Owner shall be named as an additional insured and be furnished thirty-day's written notice prior to cancellation. The Contractor shall not allow any Subcontractor to commence work on his/her subcontract until the insurance required of the Subcontractor has been obtained. Insurance carrier must be California Admitted, with a minimum of AM Best Rating of A:V (5).
 - A. Compensation Insurance. The Contractor shall procure and shall maintain during the life of this Contract, Worker's Compensation Insurance for all of his/her employees to be engaged in work on the project under this Contract and in case of any such work sublet the Contractor shall require the Subcontractor similarly to provide Worker's Compensation Insurance for all of the latter's employees to be engaged in such work unless such employees are covered by the protection afforded by the Contractor's Worker's Compensation Insurance.
 - B. Contractor's Public Liability and Property Damage Insurance. The Contractor shall procure and shall maintain, during the life of his/her Contract, Contractor's Public Liability Insurance in an amount not less than \$1,000,000 combined single limit coverage.

- C. Subcontractor's Public Liability and Property Damage Insurance. The Contractor shall require each Subcontractor to procure and maintain, during the life of his/her subcontract similar Public Liability and Property Damage Insurance with minimum limits equal to one-half the amounts required of the Contractor.
- D. Scope of Insurance and Special Hazards. The insurance required under subparagraphs B and C hereof shall provide adequate protection for the Contractor and his/her Subcontractors, respectively, against damage claims which may arise from operations under this Contract, whether such operations be by the insured or by anyone directly or indirectly employed by Contractor and, also against any special hazards which may be encountered in the performance of this Contract as such hazards are specified in the Special Conditions and required thereby to be covered by insurance.
- E. Fire Insurance. The Contractor shall effect and maintain fire insurance, with extended coverage endorsements, upon the work of this Contract to one hundred percent of the insurable value thereof, including items of labor and materials connected therewith, whether in or adjacent to the structure insured, materials in place or to be used as part of the permanent construction including surplus materials, protective fences, temporary structures, miscellaneous materials and supplies incidental to the work. The insurance policy or policies shall be written by a company or companies satisfactory to the Owner as their respective interests may appear. Contractor shall keep each building fully insured, without cost to the Owner, until final inspection and acceptance of all work.
- 44. WAGES AND HOURS. The Owner in accordance with the Labor Code has determined that the minimum wages paid on this project shall not be less than those set forth in the Notice Inviting Bids. Any class of laborers and mechanics (including apprentices) not listed in the schedule which will be employed on this Contract, shall be classified or reclassified, conformable to the schedule. While the wage rates shown are the minimum rates required to be paid during the life of the Contract, this is not a representation that labor can be obtained at these rates. It is the responsibility of bidders to inform themselves as to local labor conditions and prospective changes or adjustments of wage rates. No increase in the Contract price shall be allowed or authorized on account of the payment of wage rates in excess of those listed herein. The Contractor shall post at appropriate conspicuous points at the site of the project a schedule showing all determined minimum wage rates for the various classes of laborers and mechanics to be engaged in work on the project and all deduction, if any, required by law to be made from unpaid wages actually earned by the laborers and mechanics so engaged. In connection with this wage scale, attention is directed to Section 1770-1777 of the Labor Code. The Contractor shall forfeit, as a penalty to the Owner, \$25 for each calendar day, or portion thereof, for each worker paid less than the stipulated prevailing rates for any work done under the Contract by Contractor or by any Subcontractor under Contractor. The Contractor and every Subcontractor shall keep an accurate record showing the name, occupation, and actual per diem wages paid to each worker employed by Contractor in connection with the work executed under this Contract. The records shall be kept open at all reasonable hours to the inspection of the Owner and to the Division of Labor Law Enforcement. In accordance with the provisions and requirements of Section 1810-16 of the Labor Code, neither the Contractor nor any Subcontractor who employs, directs, or controls the work of any worker employed to execute work done under the Contract, shall require or permit such worker to labor more than eight hours during any one calendar day, except in cases of extraordinary emergency, caused by fire, flood or danger to life or property. Within thirty days after any worker is permitted to work over 8 hours in one calendar day due to such extraordinary emergency, the Contractor shall file with the Owner a verified report setting the nature of the emergency. The report shall contain the name of the worker and the hours worked by Contractor on the particular day. Failure to file the report within the thirty-day period shall be prima facie evidence that no extraordinary emergency existed. The Contractor and every Subcontractor shall keep an accurate record showing the name of, and actual hours worked by, each worker employed by Contractor in connection with the work executed under the Contract. The record shall be kept open at all reasonable hours to the inspection of the Owner and the Division of Labor Law Enforcement. The Contractor shall forfeit, as a penalty to the Owner, \$25 for each worker employed in the execution of the Contract by the Contractor or by any Subcontractor for each calendar day during which any worker is required or permitted to labor more than eight hours, in violation hereof.
- 45. BRAND OR TRADE NAME, SUBSTITUTION OF "EQUALS". The provisions of this paragraph control over the provisions of Paragraph 8 of these General Conditions. Whenever any material, product, thing or service is specified by brand or trade name, the specified name shall be deemed to be followed by the words "or equal" (except where the product is designated to match others in use on a particular public improvement; either completed or in the course of completion). As a part of his/her bid Proposal any bidder may include a request for a substitution of an item "equal" to a specified by brand or trade name. Within thirty-five calendar days after award of the Contract, the Contractor may submit to the Architect data substantiating such a request made in his/her bid Proposal; otherwise the request shall be deemed to have been withdrawn. Such submission shall include data showing the equality, his/her reasons for making the request, and the difference, if any, in cost to the Contractor. The Architect shall promptly investigate the request and make a recommendation to the Owner as to equality of the requested substitute. The governing board of the Owner shall promptly determine whether or not the substitute is equal in every respect of the item specified, shall grant or deny the request accordingly, and shall notify the Architect, who shall inform the Contractor in writing. Unless the request is granted by the governing board of the Owner, the substitution shall not be permitted. Nothing herein shall authorize any change in the Contract price nor prevent the use of Change Orders in the manner authorized by law for the project.
- **46. NOTICE OF COMPLETION.** The Contractor shall promptly notify the Architect when construction is complete, to enable the Architect to make his/her final inspection and inform the Owner. Within ten days after the completion of construction in accordance with the Contract, and not otherwise, the Owner shall cause a Notice of Completion to be recorded in the office of the County Recorder.

47. EQUAL OPPORTUNITY CLAUSE. The Contractor herein agrees not to discriminate in it's recruiting, hiring, promotion, demotion or termination practices on the basis of race, religious creed, national origin, ancestry, sex, age, or physical handicap in the performance of this Contract and to comply with the provisions of the State Fair Employment Practices as set forth in Part 4.5 of Division 2 of the California Labor Code; the Federal Civil Rights Act of 1964, as set forth in Public Law 88-352, and all amendments thereto; Executive Order 11246, and all administrative rules and regulations issued pursuant to such acts and order. The prime Contractor shall, as a part of this Contract, conform to and shall require such Subcontractor to conform to the following requirements if such requirements are found to be applicable to the Contractor or Subcontractor:

A. Transactions of \$10,000 or Under:

- 1. Contracts and subcontracts not exceeding \$10,000 are exempt from requirements of this clause.
- No Contractor or Subcontractor shall procure supplies and/or services in less than usual quantities to avoid applicability of the Equal Opportunity Clause. With respect to contracts and subcontracts for indefinite quantities, this Equal Opportunity Clause shall apply unless it is determined by the Owner that the amount to be ordered in any one year under such contract reasonably will be expected not to exceed \$10,000.
- B. **Transactions** in Excess of \$10,000, but Not More Than \$50,000:
 - 1. Each prime Contractor shall certify that it has in effect an affirmative action plan and agrees to comply with all State and Federal laws and regulations concerning Fair Employment Practices.
 - 2. The Contractor shall maintain a written copy of its affirmative action plan and will furnish a copy to the Owner upon request of the Owner. The Owner reserves the right during the life of the Contract, to require the Contractor to complete an affirmative action compliance report furnished by the Owner setting forth definite goals and timetables and indicating progress in meeting the goals.

C. Transactions of \$50,000 or More:

- 1. Each prime Contractor who has fifty or more employees and a Contract of \$50,000 or more shall develop and submit to the Owner within thirty days of award, a written affirmative action compliance program including definite goals and timetables with proposed dates of compliance. The prime Contractor shall make, as condition of his/her Subcontract, the same requirement of each Subcontractor who has fifty or more employees and a subcontract of \$50,000 or more. Each Contractor shall include in his/her affirmative action compliance program a complete table of his/her employee's job classifications. This table must include, but need not be limited to, job titles, duties and rates of pay.
- For the purpose of determining the number of employees under the preceding paragraph, the average of the Contractor's or Subcontractor's employees for the twelve month period immediately prior to award, or the total number of employees Contractor or Subcontractor will have on all jobs or sites when performing this Contract, whichever is higher, shall be used.
- D. Contractor agrees that Contractor will permit access to his/her records of employment advertisement, application forms and other pertinent data and records by the Owner or his/her designee and any State or Federal agency having jurisdiction for the purposes of investigation to ascertain compliance with the Fair Employment Practices section of this Contract.
- E. The Owner shall have the right to assign an affirmative action representative to monitor the conduct of the Contractor and Subcontractors under this Contract. The affirmative action representative shall have the right to enter the construction or manufacturing site for the purpose of obtaining information form persons performing work on the project, providing such inspection shall not in any way interfere with the progress of the work under the Contract. These General Conditions may be modified where the specific terms of a particular grant or program are inconsistent or require additional acts. Any such Special Conditions imposed upon the Owner as a condition of such grant or program shall be included in the Special Conditions made a part of this Contract.
- F. Special Requirements for Federal Assisted Construction Contracts: During the performance of this Contract, the Contractor agrees to incorporate in all subcontracts the provisions set forth in Chapter 60-1.4(b) of Title 41 published in Vol. 33 No. 104 of Federal Register dated May 28, 1968.

48. COMPUTING CHANGE ORDERS.

- A. LABOR: The costs of labor will be the actual cost for wages prevailing locally for each craft or type of workers at the time the extra work is done, plus employer payments of payroll taxes, and insurance, health and welfare, pension, vacation, apprenticeship funds, and other direct costs resulting from Federal, State, or local laws as well as assessment or benefits required by lawful collective bargaining agreements. The use of a labor classification which would increase the extra work costs will not be permitted unless the contractor establishes the necessity for such additional costs. Labor costs for equipment operators and helpers shall be reported only when such costs are not included in the invoice for the equipment rental.
- B. MATERIALS: The cost of materials reported shall be at invoice or lowest current price at which such materials are locally available and delivered to the job site in the quantities involved, plus sales tax freight and delivery.
- C. TOOL AND EQUIPMENT USE: No payment will be made for the use of tools which have a replacement value of \$100.00 or less. Regardless of ownership, the rates to be used in determining equipment use costs shall not exceed listed rates prevailing locally at equipment rental agencies, or distributors, at the time the work is performed.

- D. OVERHEAD, PROFIT, and OTHER CHARGES: The mark-up for overhead and profit on work added to the contract shall be according to the following schedule:
 - 1. For work performed by the contractor's forces the added cost for overhead and profit shall not exceed (15%) of the net cost of the work.
 - 2. For work performed by the sub-contractor, the cost for combined overhead and profit of both the prime contractor and the sub-contractor shall not exceed (20%) of the net cost of the sub-contractors work.
 - 3. For work performed by a sub-contractor, or any lower tier of sub-contractor, the cost for combined overhead and profit of the prime contractor, shall not exceed (25%) of the net cost of the sub-contractor's work.
 - 4. "Net Cost" is hereby defined as consisting of costs of labor, materials, and equipment use only. The cost of applicable insurance and bond premium will be reimbursed to the contract at cost only, without mark-up.
- 49. SEQUENCE OF THE WORK. Prior to starting construction, the contractor shall submit to the owner, for approval, a work schedule which shall show the estimated dates that Contractor plans to be working. The owner reserves the right to alter the contractors schedule to prevent excessive public nuisance or to expedite construction of specific items. No portion of the work will begin without giving (48) hours prior notice to the owner. The contractor is advised that most County facilities function between 8:00 a.m. and 5:00 p.m., Monday thru Friday, and that certain inconveniences will be encountered. The work shall be so planned and executed that these are kept to a minimum. As the project is approaching 90% completion, a preliminary punch list should be made and correction made. Before the final inspection, a final punch list shall be developed, and all corrections made and recorded, before the final walk through is made by the owner. Any defects, deficiencies found in the material, equipment, workmanship, or project completion, shall be replaced, repaired or finished before Final Payment.
- 50. ASSIGNMENT OF CLAIMS. In submitting a bid on this public works project, or any subcontractor agreeing to supply goods, services, or materials, and entering a contract pursuant thereto, the contractor and/or subcontractor do offer and agree to assign to the Owner all rights, title, and interest in and to all causes of action it may have under Section 4 of the Clayton Act (15 U.S.C. Section 15) or under the Cartwright Act (Chapter 2 {commencing with Section 16700} of Part 2 of Division 7 of the Business and Professions Code), arising from purchases of goods, services, or materials pursuant to the public works contract or the subcontract. This assignment shall be made and become effective at the time the awarding body tenders final payment to the contractor, without further acknowledgment by the parties.
- **51. CLAIMS RESOLUTION.** In accordance with Public Contract Code Section 20104-20104.6 and other applicable law, public works claims of \$375,000 or less which arise between the Contractor the Owner shall be resolved following the statutory procedure unless the Owner has elected to resolve the dispute pursuant to Public to Public Contract Code Section 10240 et seq.
 - A. All claims shall be submitted in writing and accompanied by substantiating documentation. Claims must be filed on or before the date of final payment unless other notice requirements are provided in the contract. "Claim" means a separate demand by the claimant for (1) a time extension, (2) payment of money or damages arising from work done by or on behalf of the claimant and payment of which is not otherwise expressly provided for or the claimant is not otherwise entitled, or (3) an amount the payment of which is disputed by the Owner.
 - 1. Claims under \$50,000. The Owner shall respond in writing to the claim within 45 days of receipt of the claim, or, the Owner may request, in writing, within 30 days of receipt of the claim, any additional documentation supporting the claim or relating to defenses or claims the Owner may have. If additional information is needed thereafter, it shall be provided upon mutual agreement of the Owner and the claimant. The Owner's written response shall be submitted 15 days after receiving the additional documentation, or within the same period of time taken by the claimant to produce the additional information, whichever is greater.
 - 2. Claims over \$50,000 but less than or equal to \$375,000. The Owner shall respond in writing within 60 days of receipt, or, may request in writing within 30 days of receipt of the claim, any additional documents supporting the claim or relating to defenses or claims the Owner may have against the claimant. If additional information is needed thereafter, it shall be provided pursuant to mutual agreement between the Owner and the claimant. The Owner=s response shall be submitted within 30 days after receipt of the further documents, or within the same period of time taken by the claimant to produce additional information or documents, whichever is greater.
 - B. If the claimant disputes the Owners response, or if the Owner fails to respond within the statutory time period(s), the claimant may so notify the Owner within 15 days of the receipt of the response or the failure to respond, and demand an informal conference to meet and confer for settlement. Upon such demand, the Owner shall schedule a meet and confer conference within 30 days.
 - C. If following the meet and confer conference, the claim or any portion thereof remains in dispute, the claimant may file a claim pursuant to Government Code 900 et seq. and Government Code 910 et seq. For purposes of those provisions, the time within which a claim must be filed shall be tolled from the time the claimant submits the written claim until the time the claim is denied, including any time utilized for the meet and confer conference.
 - D. If a civil action is filed to resolve any claim the provisions of Public Contract Code 20104.4 shall be followed, providi ng for nonbinding mediation and judicial arbitration.

ATTACHMENT B BID RESPONSE PAGES

BID RESPONSE PAGES

Page 1 of 6

The Bidder shall have carefully examined the proposed site and all of the Contract Documents, proposes and agrees to furnish all tools, equipment, services, apparatus, facilities, transportation, labor and materials necessary to complete the project as outlined in this RFB in strict conformity with all of the Contract Documents

Documents.		morning with an	or the contrac	
The bidder acknowledges receipt of the follow	ing addenda:			
Addendum No	Date:			
Addendum No	Date:			
Addendum No	Date:			
BASE BID (A): LAWLER COUNT	Y PARK, 19741 Higl	hway 243, Idy	llwild, CA 92	<u>544:</u>
Provide base bid scope in accordance wit County Park, at the price indicated below:		ments for the	District Paving	g, at Lawle
NOTE: Lowest responsive/responsible bid contract (Total Base Bid, including all Allow deductive items.			•	
A.1 BASE BID		· · · · · · · · · · · · · · · · · · ·		_ dollars
(in words	,			_
(\$), including all Construction Builders Risk Insurance.	applicable taxes,	licenses, Bo	onds AND	Course o
A.2. ALLOWANCES:				

Item	Description of Items	Estimated	Unit of	Unit Price	Total Cost
	2 137 2	Quantity	Measure		
1	Stormwater and Non-Stormwater Pollution Control, including Preparation of SWPPP, as Required	1	Lump Sum	\$	\$
2	Traffic Control and Construction Staging (One Travel Lane Must Remain Open During Work)	1	Lump Sum	\$	\$
3	AC Pavement (Leveling Course)	27	Ton	\$	\$
4	Remove and Replace Rotted AC (Digouts) - To Be Located in the Field by Agency Rep.	53	Ton	\$	\$
5	Cold In-Place Recycling (CIRACP) 0.25' of Existing A.C. (Including Prep Work)	2,167	SY	\$	\$
6	AC Rejuvenating Emulsion (ARE) Chip Seal (Incl. Preparation and Crack Seal)	2,167	Ton	\$	\$

BID RESPONSE PAGES

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7	Traffic Signs – Per Plans	1	Each	\$	\$
8	Striping (Thermoplastic) – Per Plan	1	Lump Sum	\$	\$
9	Pavement Markers (Thermoplastic) – Per Plans	1	Lump Sum	\$	\$
10		Tota	l For Bid Sc	hedule A Items	\$

The following po awarding the co	•	formation must als	o be prov	ided for the	Base Bid	(though it will	not be use	ed in
Labor:	% Mat	erials:	% Oth	er:	%	All three mus	t total 100°	%.
<u>BA</u>	SE BID (B)	: ALPINE CAMP	<u>, 19753</u>	<u>HIGHWAY</u>	243, ID	YLLWILD, C	A 92544	
	•	n accordance with indicated below:	n the Co	ntract Docui	ments fo	or the District	Paving, a	it Rancho
	l Base Bid, i	e/responsible bid including all Allov				•		se
B.1 BASE I	BID	(in words						dollars
(\$ Construction	Builders R	_), including all Risk Insurance.	,	ıble taxes,	license	es, Bonds	AND <u>Co</u>	ourse of

B.2. **ALLOWANCES:**

Item	Description of Items	Estimated	Unit of Measure	Unit Price	Total Cost
		Quantity			
1	Stormwater and Non-Stormwater Pollution Control, including Preparation of SWPPP,	1	Lump Sum	\$	\$
	as Required				
	Remove and Replace Rotted AC (Digouts)				
2	- To Be Located in the Field by Agency	22	Ton	\$	\$
	Rep.; Incl. Correcting Drainage – Per Plans				
3	AC Rejuvenating Emulsion (ARE) Chip	1,106		•	\$
3	Seal (Incl. Preparation and Crack Seal)	1,100		Þ	Ф
4	AC Pavement (Leveling Course)	11	Tons	\$	\$

5	Quick-Set Emulsion-Aggregate Slurry Type I	1,106		\$	\$
6	Traffic Signs – Per Plans	1	Each	\$	\$
7	Striping and Pavement Markers	1	Lump Sum	\$	\$
8			Total For Bid Sc	hedule B Items	\$

The following perceawarding the contr	•	•	ust also	be	provided fo	r the Ba	ise Bio	d (though it will not be used in
Labor:	_%	Materials:		<u></u> %	Other:		_%	All three must total 100%.
PAYMENT TERMS Check one:Lump sum		ment at project c	ompletic	on				
Progress p	aym	ents (as stated ir	n Gener	al (Conditions)			
If prompt payment	disc	ount offered (for	example	e, 1	% Net 15) p	olease d	escrib	pe:
TIME FOR COMP	LET	<u> </u>	d of peri	fori	mance shall	be sixty	v (60) o	calendar days or less after the

issuance of the Notice To Proceed, Contractor will need to work around current event schedule to complete the

work, with no obligation by the District to purchase any specified amount of services.

BID RESPONSE PAGES

Page 3 of 6

DESIGNATION OF SUBCONTRACTORS

In compliance with Section 4104 of the California Public Contract Code, the Bidder shall complete the list of each subcontractor who will perform work or labor or render service in or about the project in the amount in excess of ½ of 1% of the total Bid Response. Please continue the same format if more space is needed:

Subcontr	ractor No. 1		
Sub-Contractor Name: Sub-Contractor Address:	CSLB#:	DIR#:	
Sub-Contractor Phone:	Sub-Contractor Email:		
Description of the work to be performed by Sub-Cont	tractor:		
Subcontr	ractor No. 2		
Sub-Contractor Name:	CSLB#:	DIR#:	
Sub-Contractor Address:			
Sub-Contractor Phone:	Sub-Contractor Email:		
Description of the work to be performed by Sub-Cont			
bescription of the work to be performed by sub-cont	inactor.		
Subcontr	ractor No. 3		
Sub-Contractor Name:	CSLB#:	DIR#:	
Sub-Contractor Address:		211	
Sub-Contractor Phone:	Sub-Contractor Email:		
Description of the work to be performed by Sub-Cont			
Description of the work to be performed by Sub-Cont	iracior.		
Subcont	ractor No. 4		
Sub-Contractor Name:		DID#	
	CSLB#·	I)IK#'	
Sub-Contractor Address:	CSLB#:	DIR#:	

Description of the work to be performed by Sub-Contractor:

BID RESPONSE PAGES

Page 4 of 6

AWARD OF CONTRACT

The bidder understands that a contract is formed upon the acceptance of its bid by the District. The bidder agrees it will promptly execute and deliver to the District the Agreement together with the required Payment and Performance Bonds and insurance documents.

BID GUARANTEE

Date:

1

The enclosed certified or cashier's check or bid bond on the provided form, made payable to the District in the amount of ten percent (10%) of the total Bid Response, is hereby given as a guarantee that the Bidder will execute and deliver the Contract and required bonds if awarded the Contract. In the event that the Bidder fails or refuses to execute and deliver said documents, such check or bond is to be charged with the costs of the damages experienced by the District as a result of such failure or refusal.

2	Bidder's Company Name:	
3	Bidder's Current Physical Address:	
4	Bidder's Primary Phone #:	
5	List all Bidder's CSLB License Classification(s):	
6	Bidder's CSLB #:	
7	CSLB Expiration:	
8	Number of years in business under current CSLB:	
9	DIR #:	
10	Is Bidder a Certified DBE (Yes/No):	
11	Number of years in business under current Bidder name:	Individual:
12	Type of Entity (Check One, and complete the appropriate form below):	Partnership: Corporation: Joint Venture

BID RESPONSE PAGES

Page 5 of 6

13	Number of Bidder's Employees:
14	Bidder's Annual Project \$ Volume:
15	Bidder's Project \$ Backlog:
16	List Trades That Bidder Self-Performs for this work:
17	Bidder meets the Drug-Free Workplace Act of 1990?
17 18	Bidder meets the Drug-Free Workplace Act of 1990? Bidder meets Child Support Compliance Act in accordance with Public Contract Code 7110?
	Bidder meets Child Support Compliance Act in

BID RESPONSE PAGES

Page 6 of 6

TO BE SUBMITTED WITH BID NON-COLLUSION DECLARATION

(Public Contract Code Section 7106)

The undersigned declares:			
I am the foregoing bid.	of		, the party making the
The bid is not made in the intercorganization, or corporation. The indirectly induced or solicited are indirectly colluded, conspired, coanyone shall refrain from biddin communication, or conference woverhead, profit, or cost elements.	ne bid is genuine and not ny other bidder to put in a onnived, or agreed with a g. The bidder has not in with anyone to fix the bid	collusive or sham. The bid a false or sham bid. The bid any bidder or anyone else to any manner, directly or inco price of the bidder or any o	dder has not directly or dder has not directly or to put in a sham bid, or that directly, sought by agreement,
All statements contained in the breakdown thereof, or the contepartnership, company, associat collusive or sham bid, and has a	ents thereof, or divulged i ion, organization, bid dep	nformation or data relative pository, or to any member	thereto, to any corporation, or agent thereof to effectuate a
Any person executing this decla liability company, limited liability execute, and does execute, this	partnership, or any othe	r entity, hereby represents	
I declare under penalty of perjui	ry under the laws of the S	State of California that the f	oregoing is true and correct and
that this declaration is executed	on	[date], at	[city],
	[State].		
-	[Signature	of Declarant]	_
-	[Printed Name	of Person Signing]	_
[Name of Bidder]		of Bidder]	_
-	[Office	e or Title]	_

BID BOND

Page 1 of 2

(Public Work – Public Contract Code Section 20129 (a))

,	(//	
WHEREAS, The undersigned	("Principal") is herewith	submitting to the
Riverside County Regional Park & Open-Space [District ("District") a Bid dated	22
, in the amount of	(\$) for the av	vard by District to
Principal of a contract ("Contract") for the followin	ıg:	
WHEREAS, Principal is obligated as a condition of Section 20129 (a) in the amount of ten percent (1 Bid Bond issued by an admitted surety insurer pusurety");	10%) of the Bid Amount, which security may	be in the form of a
NOW THEREFORE, the Principal and	("Surety"), an Adr	nitted Surety, are
held and firmly bound unto the C in the penal sum	of(\$	
) for the payment of which sum in lawful mo	ney of the United States, well and truly to be n	nade, we, Principal
and Surety, bind ourselves, our executors, administ	trators, successors, heirs and assigns, jointly a	nd severally, firmly
by these presents.		

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, that if Principal is awarded the Contract upon such Bid and thereafter within the period of time specified in District's bidding documents governing the bidding process applicable to such Bid ("Bidding Documents") enters into the Contract with District on the terms and conditions required by the Bidding Documents and furnishes the performance and payment bonds, evidence of insurance and other documents that Principal is required to submit under the terms of the Bidding Documents, then this obligation shall be null and void; otherwise, it shall remain in full force and effect and the sum guaranteed by this bond shall, at the option of District, be forfeited to District to pay all losses and damages suffered by District as a result thereof and permitted by applicable law, including, without limitation, the difference between the Bid Amount and amount for which the District may legally contract with another party to perform the Work (if such latter amount be greater than the Bid Amount), costs of publication, and all other losses and damages suffered by District (including, without limitation, those associated with delay to the Project); provided, however, that Surety's liability shall not exceed the penal amount of this bond.

Surety, for value received, hereby agrees that no change, extension of time, alteration or addition to the terms of the Contract or the Bidding Documents, or to the work to be performed thereunder, nor any withdrawal of the Bid in a manner not permitted by the requirements of the Bidding Documents shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

BID BOND

Page 2 of 2

In the event any legal proceeding or arbitration is brought upon this bond by District and judgment or award is entered in favor of District as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the District.

IN WITNESS WHEREOF the undersigned parties have day of, 20, the name and corp	
and these presents duly signed by its undersigned repre	
	Affix Seal if Corporation
(Firm Name – Principal)	-
	<u>.</u>
(Business Address)	_
By (Original Signature)	-
(Title)	<u>.</u>
(Corporation Name – Surety)	Affix Corporate Seal
(Business Address)	- - -
By (Original Signature) ATTORNEY-IN-FACT	-

Note: Notary acknowledgment for Surety's signature and Surety's Power of Attorney must be included or attached

AGREEMENT

Page 1 of 3

	_		
THIS AGREEMENT, entered into this	day	of, 202	22, by and between
, here Parks & Open-Space District, hereinafter c			he Riverside County Regional agree as follows:
CONTRACT DOCUMENTS: The complete to be complimentary.	contract includes all	of the Contrac	Documents which are intended
The Contract Documents include: Notice Ir "Add Alternates" being removed from the drequirements, including Attachment A and incorporated into the RFB; this Agreement; and approved change orders.	locuments; the Reque	est for Bids ("R ddenda or othe	FB") with the updated licensing r documents attached to or
STATEMENT OF WORK: The Contractor a supervision, services, transportation, waste District Headquarters Pond Restoration Pro	e disposal, facilities a	nd other require	ed items necessary to complete
TIME FOR COMPLETION: The period of p	performance shall be	for thirty (30) d	ays or less at the time the Notice
To Proceed is issued to the Contractor. Co complete the work, with no obligation by th			
oomplete the work, warne estigation sy th	o Biothor to paronace	any opcomed	amount of oor video.
COMPENSATION TO BE PAID TO CONT	RACTOR: The Distric	ct agrees to pay	and the Contractor agrees to
accept in full consideration for the performa	ance of all work not to	exceed the su	
Please reference the contract breakdown t	hat is outlined below.		(\$).
Item Description	Quantity	Unit	Amount
1.	1	EACH	\$
2.	1	EACH	\$
3.	1	EACH	\$
4.	1	EACH	\$
BASE BID The undersigned agrees to perform all wor	k required for this pro	piect for the sur	n of:

AGREEMENT FORM

	Page 2 o	f 3	
Tot	al Contract Cost (Price	Written in Words)	
In case of discrepancy be	tween the written price and the	numerical price, the written price shall prevail.	
10% Contingency: The District has are not a guarantee of payment but a use of these funds must have prior w change order request in order to initial	re set aside in the everitten approval by Dist	ent that an adjustment is need. rict staff. Contractor must subm	The
		(\$)
TOTAL BID AMOUNT (GRAND SUM	I TOTAL OF BASE B	SID, and 10% CONTIGENCY):	
		(\$).
Including all applicable taxes, licen	ses, and Bonds.		
worker's compensation or to undertal comply with such provisions before contractor's legal type of organization List names of all persons who have a	ommencing the perfor	mance of work of this contract."	
AGREED:			
Firm Name:			
Address:			
Contractor's License No.		Expires:	
DIR Registration No:			
Signature:		Date:	
Name and Title:			

AGREEMENT FORM

Page 3 of 3

Riverside County Regional Parks & Open-Space District
Signature:
Name and Title:
Date:

PAYMENT BOND

Page 1 of 2

(Public Work - Civil Code Sections 9550 et seq.)

WHEREAS, the Riverside	e County Parks & Open-S	pace District ("District") on	, 2022, has awarded
Construction Contract Nu	mber: BID#	("Contract") to the undersign	ed, as
Principal ("Principal") to pe	erform the work ("Work") fo	or the following project;	
WHEREAS, said Principa	l is required by the Contrac	t and/or by Division 3, Part IV, Titl	e XV, Chapter 7 (commencing
at Section 9550) of the Ca	alifornia Civil Code to furnis	sh a payment bond in connection	with the Contract;
NOW THEREFORE, we,	the Principal and		("Surety"), an admitted surety
insurer pursuant to Code	of Civil Procedure, Sectio	n 995.120, are held and firmly be	ound unto District in the penal
sum of			
Dollars (\$), this amount being	not less than one hundred per	cent (100%) of the total sum
payable by District under	the Contract at the time th	e Contract is awarded by District	to the Principal, lawful money
of the United States of An	nerica, for the payment of	which sum well and truly to be m	ade, we, Principal and Surety,
bind ourselves, our heirs,	executors, administrators	, successors and assigns, jointly	and severally, firmly by these
presents.			

THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators, successors, or assigns approved by District, or its subcontractors, of any contracting tier, shall fail to pay any person or persons named in California Civil Code, Section 9554, then Surety will pay for the same, in or to an amount not exceeding the penal amount hereinabove set forth, and also will pay to the prevailing party if suit is brought upon this bond, reasonable attorney's fees as provided in California Civil Code, Section 9564.

Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the Work to be performed thereunder, nor any rescission or attempted rescission of the Contract or this bond, nor any conditions precedent or subsequent in the bond or Contract attempting to limit the right of recovery of any claimant otherwise entitled to recover under the Contract or this bond shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions.

PAYMENT BOND

Page 2 of 2

Surety is not released from liability to those for whose benefit this bond has been given, by reason of any breach of the Contract by District or Principal.

Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing District's rights against the others.

	Affix Seal if Corporation
(Firm Name – Principal)	_
(Business Address)	-
By (Original Signature)	_
(Title)	_
(Corporation Name – Surety)	Affix Corporate Seal
(Business Address)	_ _
By (Signature – Attached Notary's Acknowledgment)	_
ATTORNEY-IN-FACT (Title-Attach Power of Attorney)	

Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety's Power of Attorney, must be included or attached.

PERFORMANCE BOND

Page 1 of 3

(Public Work – Public Contract Code Section 20129 (b))
WHEREAS, the Riverside County Regional Parks & Open-Space District ("District") on 2022,has
awarded Construction Contract Number: BID # ("Contract") to the undersigned as
Principal ("Principal") to perform the work ("Work") for the following project; ;
which Contract is by this reference hereby incorporated herein and made a part hereof;
WHEREAS, said Principal is required by the Contract and/or by California Public Contract Code, Section 20129 (b)
o furnish a performance bond for the faithful performance of the Contract;
NOW THEREFORE, we, the Principal and ("Surety"), an admitted surety nsurer pursuant to Code of Civil Procedure, Section 995.120, are held and firmly bound unto District in the penasum of
Dollars (\$), this amount being not less than one hundred percent (100%) of the total sumpayable by District under the Contract at the time the Contract is awarded by District to the Principal, lawful money of the United States of America, for the payment of which sum well and truly to be made, we, Principal and Surety, bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally firmly by these presents.
THE CONDITION OF THIS OBLIGATION IS SUCH that if Principal, its heirs, executors, administrators successors or assigns approved by District, shall in all things stand to and abide by and well and truly keep and perform all the undertakings, terms, covenants, conditions and agreements in the Contract, including, without imitation, all obligations during the original term and any extensions thereof as may be granted by District, without notice to Surety thereof (including, without limitation, the obligation for Principal to pay liquidated damages), all obligations during the period of any warranties and guarantees required under the Contract and all other obligations otherwise arising under the terms of the Contract (such as, but not limited to, obligations of any material designated in all respects according to their true and in the manner therein designated in all respects according to their true.

Whenever Principal shall be, and is declared the District to be, in default under the Contract, the Surety shall promptly either remedy the default, or, if the Contract is terminated by District or the Principal's performance of the Work is discontinued, Surety shall promptly complete the Contract through its agents or independent contractors, subject to acceptance of such agents or independent contractors by District as hereinafter set forth, in accordance with its terms and conditions and to pay and perform all obligations of Principal under the Contract (including, without limitation, all obligations with respect to payment of liquidated damages) less the "Balance of the Contract Price" (as hereinafter defined); subject to the penal amount of this bond as set forth above. The term "Balance of the Contract Price," as used in this paragraph, shall mean the total amount payable to Principal by District under the Contract and any modifications thereto, less the amount previously paid by District to the Principal and less amounts that District is authorized to withhold under the terms of the Contract.

intent and meaning, then this obligation shall become null and void; otherwise, it shall be and remain in full force

and effect.

PERFORMANCE BOND

Page 2 of 3

If District determines that completion of the Contract by Surety or its agents or independent contractors must be performed by a lowest responsible bidder selected pursuant to a competitive bidding process, then Surety shall comply with such processes in accordance with the requirements of District and applicable laws. Unless otherwise approved by District, in the exercise of its sole and absolute discretion, Surety shall not utilize Principal in completing performance of the Work.

No right of action shall accrue on this bond to or for the use of any person or entity other than District or its successors or assigns.

In the event any legal proceeding or arbitration is brought upon this bond by District and judgment or award is entered in favor of District as the prevailing party, Surety shall pay all costs and attorney's fees incurred by the District.

Correspondence or claims relating to this bond shall be sent to Surety at the address set forth below. Surety, for value received, agrees that no change, extension of time, alteration or addition to the terms of the Contract, or to the work to be performed thereunder, shall in any way impair or affect Surety's obligation under this bond, and Surety does hereby waive notice of any such changes, extensions of time, alterations or additions. Surety's obligations hereunder are independent of the obligations of any other surety for the performance of the Contract, and suit may be brought against Surety and such other sureties, joint and severally, or against any one or more of them or against less than all of them, without impairing District's rights against the others.

PERFORMANCE BOND

Page 3 of 3

	Affix Seal if Corporation
<u>(Firm Name – Principal)</u>	
	<u>.</u>
(Business Address)	
By	
(Original Signature)	
<u>(Title)</u>	
(Corporation Name – Surety)	Affix Corporate Seal
(Business Address)	
Ву	
(Signature – Attached Notary's Acknowledgment)	
ATTORNEY-IN-FACT (Title-Attach Power of Attorney)	
(

Note: Notary acknowledgment of signatures of Bidder and Surety, and Surety's Power of Attorney, must be included or attached.

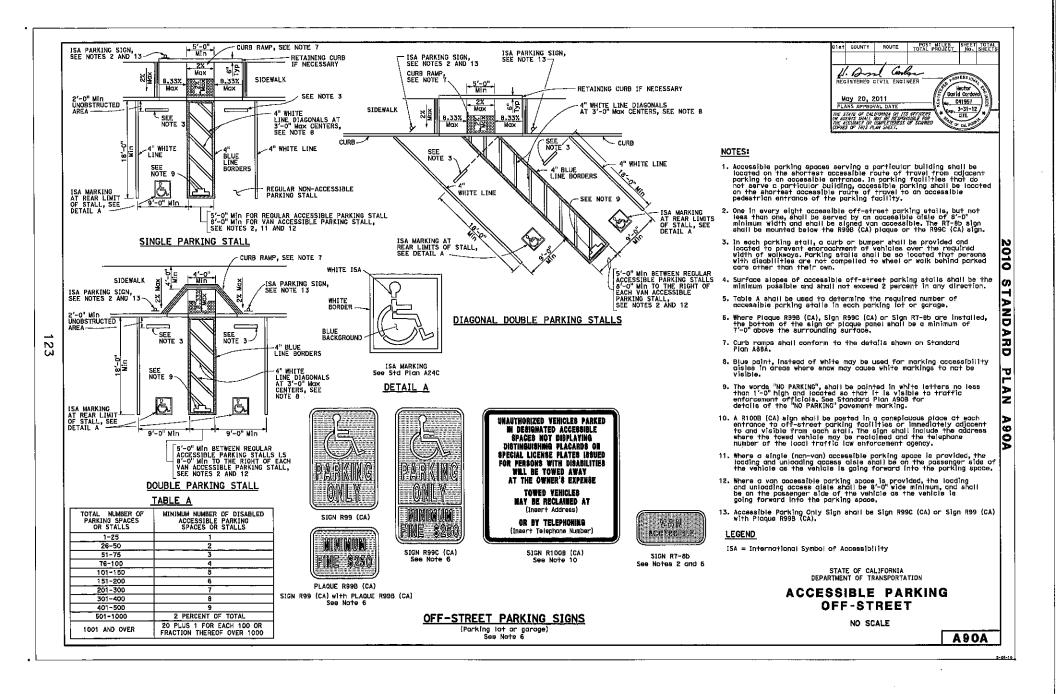
ATTACHMENT C SCOPE OF WORK

Lawler County Park and Alpine Camp Re-Paving

The DISTRICT has completed the specifications for the Pavement Resurfacing at Lawler County Park and Alpine Camp. Lawler Lodge will be 19,500 s.f. of Cape Seal repaving and Alpine Camp will be 9,950 s.f. of cape seal repaving with PME Chip seal and AC Pavement, finished with restriping.

The project will also include deductive alternates as described in Construction BPMs.

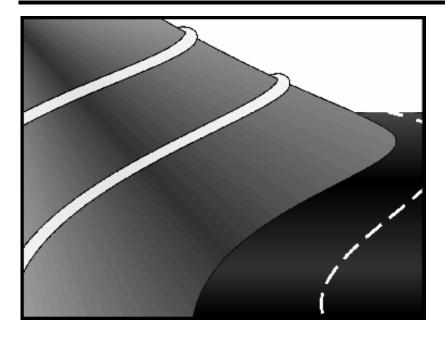
ATTACHMENT D ADA PLAN



RIVERSIDE COUNTY REGIONAL PARK AND OPEN-SPACE DISTRICT PUBLIC WORKS (Projects Over \$25,000)

ATTACHMENT E CONSTRUCTION BPMs

Fiber Rolls SE-5



Description and Purpose

A fiber roll consists of straw, flax, or other similar materials bound into a tight tubular roll. When fiber rolls are placed at the toe and on the face of slopes, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff. By interrupting the length of a slope, fiber rolls can also reduce erosion.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the end of a downward slope where it transitions to a steeper slope
- Along the perimeter of a project
- As check dams in unlined ditches
- Down-slope of exposed soil areas
- Around temporary stockpiles

Limitations

Fiber rolls are not effective unless trenched

Objectives

EC Erosion Control

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SE Sediment Control

TR Tracking Control

WE Wind Erosion Control

NS Non-Stormwater Management Control

WM Waste Management and Materials Pollution Control

Legend:

☑ Primary Objective

☒ Secondary Objective

Targeted Constituents

Sediment

Nutrients

Trash Metals

Bacteria

Oil and Grease

Organics

Potential Alternatives

SE-1 Silt Fence

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-9 Straw Bale Barrier



SE-5 Fiber Rolls

- Fiber rolls at the toe of slopes greater than 5:1 (H:V) should be a minimum of 20 in. diameter or installations achieving the same protection (i.e. stacked smaller diameter fiber rolls, etc.).
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.

Implementation

Fiber Roll Materials

• Fiber rolls should be either prefabricated rolls or rolled tubes of erosion control blanket.

Assembly of Field Rolled Fiber Roll

- Roll length of erosion control blanket into a tube of minimum 8 in. diameter.
- Bind roll at each end and every 4 ft along length of roll with jute-type twine.

Installation

- Locate fiber rolls on level contours spaced as follows:
 - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
 - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
 - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into a 2 to 4 in. deep trench with a width equal to the diameter of the fiber roll.
 - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
 - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.

Removal

• Fiber rolls are typically left in place.

Fiber Rolls SE-5

 If fiber rolls are removed, collect and dispose of sediment accumulation, and fill and compact holes, trenches, depressions or any other ground disturbance to blend with adjacent ground.

Costs

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

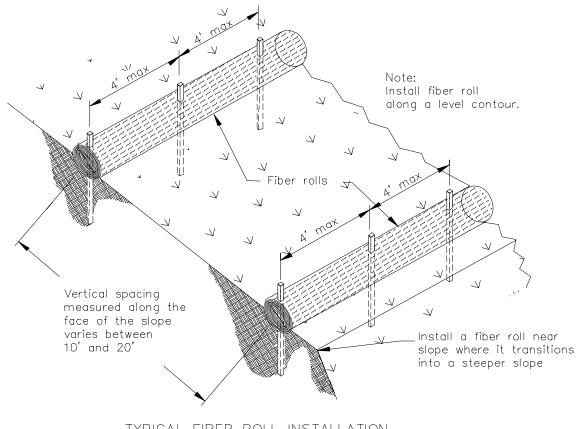
Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage depth, usually one-half the distance between the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site of disposed at an appropriate location.
- If fiber rolls are used for erosion control, such as in a mini check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.

References

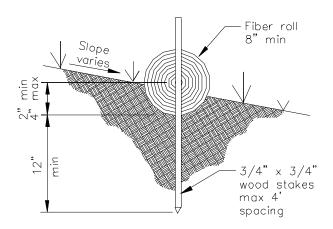
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

SE-5 Fiber Rolls



TYPICAL FIBER ROLL INSTALLATION

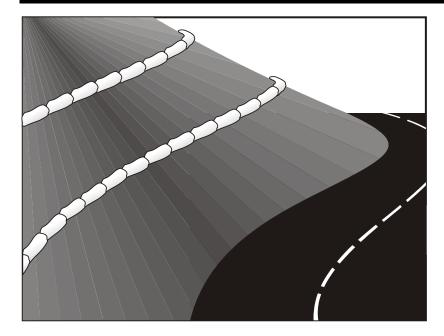
N.T.S.



ENTRENCHMENT DETAIL N.T.S.

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Description and Purpose

A gravel bag berm is a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out, and release runoff slowly as sheet flows, preventing erosion.

Suitable Applications

Gravel bag berms may be suitable:

- As a linear sediment control measure:
 - Below the toe of slopes and erodible slopes
 - As sediment traps at culvert/pipe outlets
 - Below other small cleared areas
 - Along the perimeter of a site
 - Down slope of exposed soil areas
 - Around temporary stockpiles and spoil areas
 - Parallel to a roadway to keep sediment off paved areas
 - Along streams and channels
- As linear erosion control measure:

Objectives

EC Erosion Control

SE Sediment Control

TR Tracking Control

WE Wind Erosion Control

NS Non-Stormwater Management Control

WM Waste Management and Materials Pollution Control

Legend:

☑ Primary Objective

☒ Secondary Objective

Targeted Constituents

Sediment

Nutrients

Trash

Metals

Bacteria

Oil and Grease

Organics

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Roll

SE-8 Sandbag Barrier

SE-9 Straw Bale Barrier



- Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- At the top of slopes to divert runoff away from disturbed slopes
- As check dams across mildly sloped construction roads

Limitations

- Gravel berms may be difficult to remove.
- Removal problems limit their usefulness in landscaped areas.
- Gravel bag berm may not be appropriate for drainage areas greater than 5 acres.
- Runoff will pond upstream of the filter, possibly causing flooding if sufficient space does not exist.
- Degraded gravel bags may rupture when removed, spilling contents.
- Installation can be labor intensive.
- Berms may have limited durability for long-term projects.
- When used to detain concentrated flows, maintenance requirements increase.

Implementation

General

A gravel bag berm consists of a row of open graded gravel—filled bags placed on a level contour. When appropriately placed, a gravel bag berm intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding provides quiescent conditions allowing sediment to settle. The open graded gravel in the bags is porous, which allows the ponded runoff to flow slowly through the bags, releasing the runoff as sheet flows. Gravel bag berms also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets, which erode rills, and ultimately gullies, into disturbed, sloped soils. Gravel bag berms are similar to sand bag barriers, but are more porous.

Design and Layout

- Locate gravel bag berms on level contours.
 - Slopes between 20:1 and 2:1 (H:V): Gravel bags should be placed at a maximum interval of 50 ft (a closer spacing is more effective), with the first row near the slope toe.
 - Slopes 2:1 (H:V) or steeper: Gravel bags should be placed at a maximum interval of 25 ft (a closer spacing is more effective), with the first row placed the slope toe.
- Turn the ends of the gravel bag barriers up slope to prevent runoff from going around the berm.
- Allow sufficient space up slope from the gravel bag berm to allow ponding, and to provide room for sediment storage.

- For installation near the toe of the slope, consider moving the gravel bag barriers away from the slope toe to facilitate cleaning. To prevent flows behind the barrier, bags can be placed perpendicular to a berm to serve as cross barriers.
- Drainage area should not exceed 5 acres.
- In Non-Traffic Areas:
 - Height = 18 in. maximum
 - Top width = 24 in. minimum for three or more layer construction
 - Top width = 12 in. minimum for one or two layer construction
 - Side slopes = 2:1 or flatter
- In Construction Traffic Areas:
 - Height = 12 in. maximum
 - Top width = 24 in. minimum for three or more layer construction.
 - Top width = 12 in. minimum for one or two layer construction.
 - Side slopes = 2:1 or flatter.
- Butt ends of bags tightly
- On multiple row, or multiple layer construction, overlapp butt joints of adjacent row and row beneath.
- Use a pyramid approach when stacking bags.

Materials

- **Bag Material:** Bags should be woven polypropylene, polyethylene or polyamide fabric or burlap, minimum unit weight of 4 ounces/yd², Mullen burst strength exceeding 300 lb/in² in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355.
- **Bag Size:** Each gravel-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.
- *Fill Material:* Fill material should be 0.5 to 1 in. Class 2 aggregate base, clean and free from clay, organic matter, and other deleterious material, or other suitable open graded, non-cohesive, porous gravel.

Costs

Gravel filter: Expensive, since off-site materials, hand construction, and demolition/removal are usually required. Material costs for gravel bags are average of \$2.50 per empty gravel bag. Gravel costs range from \$20-\$35 per yd³.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Gravel bags exposed to sunlight will need to be replaced every two to three months due to degrading of the bags.
- Reshape or replace gravel bags as needed.
- Repair washouts or other damage as needed.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- Remove gravel bag berms when no longer needed. Remove sediment accumulation and clean, re-grade, and stabilize the area. Removed sediment should be incorporated in the project or disposed of.

References

Handbook of Steel Drainage and Highway Construction, American Iron and Steel Institute, 1983.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Pollution Plan Handbook, First Edition, State of California, Department of Transportation Division of New Technology, Materials and Research, October 1992.



Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.

Objectives

EC Erosion Control

SE Sediment Control

TR Tracking Control

WE Wind Erosion Control

NS Non-Stormwater
Management Control

Waste Management and Materials Pollution Control

Legend:

- **☑** Primary Objective
- **☒** Secondary Objective

Targeted Constituents

Sediment

Nutrients

Trash

Metals

Bacteria

Oil and Grease

Organics

Potential Alternatives

None



SE-7 Street Sweeping and Vacuuming

- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.
- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from 58/hour (3 yd³ hopper) to 88/hour (9 yd³ hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

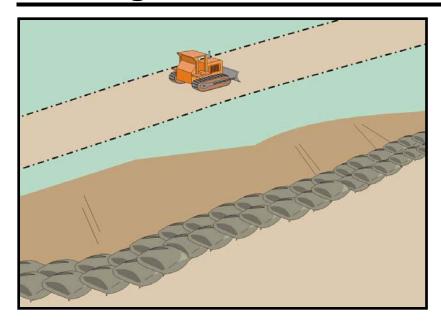
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.

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Objectives

EC	Erosion Control	×
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SE Sediment Control

TR Tracking Control

WE Wind Erosion Control

NS Non-Stormwater Management Control

WM Waste Management and Materials Pollution Control

Legend:

- **☑** Primary Objective
- **☒** Secondary Objective

Description and Purpose

A sandbag barrier is a series of sand-filled bags placed on a level contour to intercept sheet flows. Sandbag barriers pond sheet flow runoff, allowing sediment to settle out.

Suitable Applications

Sandbag barriers may be suitable:

- As a linear sediment control measure:
 - Below the toe of slopes and erodible slopes
 - As sediment traps at culvert/pipe outlets
 - Below other small cleared areas
 - Along the perimeter of a site
 - Down slope of exposed soil areas
 - Around temporary stockpiles and spoil areas
 - Parallel to a roadway to keep sediment off paved areas
 - Along streams and channels
- As linear erosion control measure:
 - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow

Targeted Constituents

Sediment

Nutrients

Trash

Metals

Bacteria

Oil and Grease

Organics

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-9 Straw Bale Barrier



- At the top of slopes to divert runoff away from disturbed slopes
- As check dams across mildly sloped construction roads

Limitations

- It is necessary to limit the drainage area upstream of the barrier to 5 acres.
- Degraded sandbags may rupture when removed, spilling sand.
- Installation can be labor intensive.
- Barriers may have limited durability for long-term projects.
- When used to detain concentrated flows, maintenance requirements increase.
- Burlap should not be used for sandbags.

Implementation

General

A sandbag barrier consists of a row of sand-filled bags placed on a level contour. When appropriately placed, a sandbag barrier intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding provides quiescent conditions allowing sediment to settle. While the sand-filled bags are porous, the fine sand tends to quickly plug with sediment, limiting the rate of flow through the barrier. If a porous barrier is desired, consider SE-1, Silt Fence, SE-5, Fiber Rolls, SE-6, Gravel Bag Berms, or SE-9, Straw Bale Barriers. Sandbag barriers also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets which erode rills, and ultimately gullies, into disturbed, sloped soils. Sandbag barriers are similar to ground bag berms, but less porous.

Design and Layout

- Locate sandbag barriers on a level contour.
 - Slopes between 20:1 and 2:1 (H:V): Sandbags should be placed at a maximum interval of 50 ft (a closer spacing is more effective), with the first row near the slope toe.
 - Slopes 2:1 (H:V) or steeper: Sandbags should be placed at a maximum interval of 25 ft (a closer spacing is more effective), with the first row placed near the slope toe.
- Turn the ends of the sandbag barrier up slope to prevent runoff from going around the barrier.
- Allow sufficient space up slope from the barrier to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, consider moving the barrier away from the slope toe to facilitate cleaning. To prevent flow behind the barrier, sandbags can be placed perpendicular to the barrier to serve as cross barriers.
- Drainage area should not exceed 5 acres.

- Stack sandbags at least three bags high.
- Butt ends of bags tightly.
- Overlapp butt joints of row beneath with each successive row.
- Use a pyramid approach when stacking bags.
- In non-traffic areas
 - Height = 18 in. maximum
 - Top width = 24 in. minimum for three or more layer construction
 - Side slope = 2:1 or flatter
- In construction traffic areas
 - Height = 12 in. maximum
 - Top width = 24 in. minimum for three or more layer construction.
 - Side slopes = 2:1 or flatter.

Materials

- **Sandbag Material:** Sandbag should be woven polypropylene, polyethylene or polyamide fabric, minimum unit weight of 4 ounces/yd², Mullen burst strength exceeding 300 lb/in² in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355. Use of burlap may not acceptable in some jurisdictions.
- **Sandbag Size:** Each sand-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.
- *Fill Material:* All sandbag fill material should be non-cohesive, Class 1 or Class 2 permeable material free from clay and deleterious material.

Costs

Sandbag barriers are more costly, but typically have a longer useful life than other barriers. Empty sandbags cost \$0.25 - \$0.75. Average cost of fill material is \$8 per yd³. Pre-filled sandbags are more expensive at \$1.50 - \$2.00 per bag.

Inspection and Maintenance

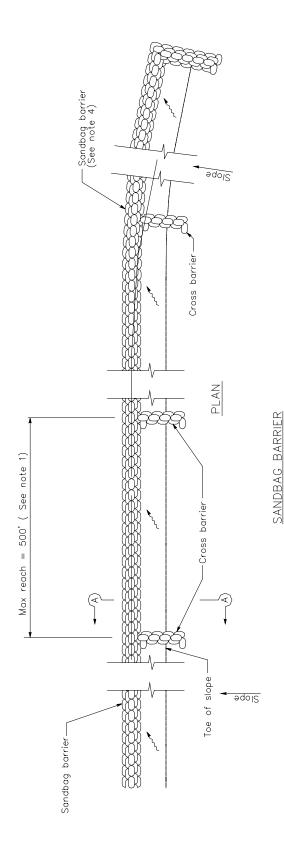
- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Sandbags exposed to sunlight will need to be replaced every two to three months due to degradation of the bags.
- Reshape or replace sandbags as needed.

Sandbag Barrier

- Repair washouts or other damage as needed.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.
- Remove sandbags when no longer needed. Remove sediment accumulation, and clean, regrade, and stabilize the area.

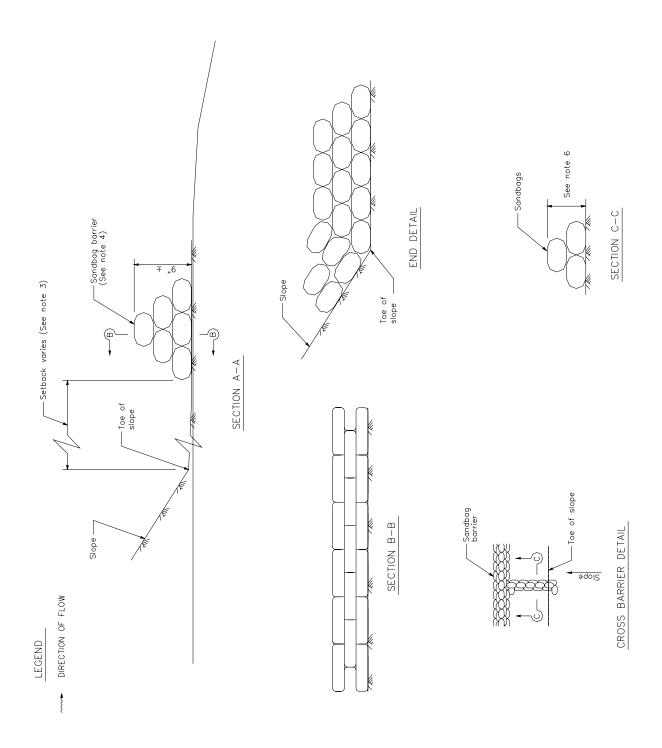
References

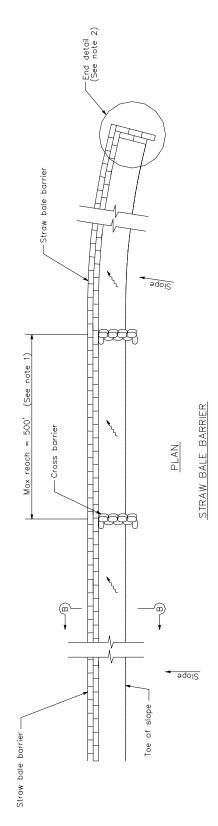
Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.



NOTES

- . Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/2 the height of the linear barrier. In no case shall the reach length exceed 500.
- . Place sandbags tight
- Dimension may vary to fit field condition.
- 4. Sandbag barrier shall be a minimum of 3 bags high.
- 5. The end of the barrier shall be turned
- 6. Cross barriers shall be a min of 1/2 and a max of 2/3 the height of
- 7. Sandbag rows and layers shall be staggered to eliminate gaps.





DIRECTION OF FLOW

The end of barrier shall be turned up slope. Dimension may vary to fit field condition.

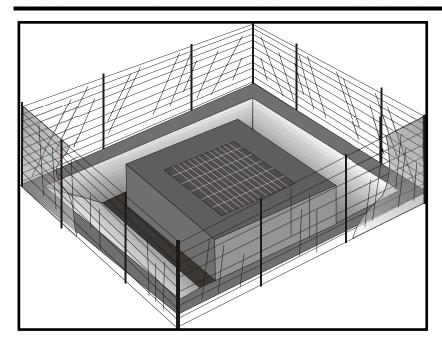
NOTES

- Stake dimensions are nominal.
- Place straw bales tightly together.
- ιć
- Tamp embedment spoils against sides of installed bales.
- Drive angled wood stake before vertical stake to ensure tight abutment to adjacent bale.
 - cross barriers should be a min of 1/2 the height of the linear barrier. ∞i
- Sandbag rows and layers should be offset to eliminate gaps.

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Description and Purpose

Storm drain inlet protection consists of a sediment filter or an impounding area around or upstream of a storm drain, drop inlet, or curb inlet. Storm drain inlet protection measures temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Some filter configurations also remove sediment by filtering, but usually the ponding action results in the greatest sediment reduction.

Suitable Applications

Every storm drain inlet receiving sediment-laden runoff should be protected.

Limitations

- Drainage area should not exceed 1 acre.
- Straw bales, while potentially effective, have not produced in practice satisfactory results, primarily due to improper installation.
- Requires an adequate area for water to pond without encroaching into portions of the roadway subject to traffic.
- Inlet protection usually requires other methods of temporary protection to prevent sediment-laden stormwater and non-stormwater discharges from entering the storm drain system.
- Sediment removal may be difficult in high flow conditions or if runoff is heavily sediment laden. If high flow conditions are

Objectives

EC Erosion Control

SE Sediment Control

TR Tracking Control

WE Wind Erosion Control

NS Non-Stormwater Management Control

WM Waste Management and Materials Pollution Control

Legend:

☑ Primary Objective

☒ Secondary Objective

Targeted Constituents

Sediment

Nutrients

Trash

Metals

Bacteria

Oil and Grease

Organics

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-9 Straw Bale Barrier



SE-10 Storm Drain Inlet Protection

expected, use other onsite sediment trapping techniques in conjunction with inlet protection.

- Frequent maintenance is required.
- For drainage areas larger than 1 acre, runoff should be routed to a sediment-trapping device designed for larger flows. See BMPs SE-2, Sediment Basin, and SE-3, Sediment Traps.
- Excavated drop inlet sediment traps are appropriate where relatively heavy flows are expected, and overflow capability is needed.

Implementation

General

Large amounts of sediment may enter the storm drain system when storm drains are installed before the upslope drainage area is stabilized, or where construction is adjacent to an existing storm drain. In cases of extreme sediment loading, the storm drain itself may clog and lose a major portion of its capacity. To avoid these problems, it is necessary to prevent sediment from entering the system at the inlets.

Inlet control measures presented in this handbook should not be used for inlets draining more than one acre. Runoff from larger disturbed areas should be first routed through SE-2, Sediment Basin or SE-3, Sediment Trap. Different types of inlet protection are appropriate for different applications depending on site conditions and the type of inlet. Inlet protection methods not presented in this handbook should be approved by the local stormwater management agency.

Design and Layout

Identify existing and planned storm drain inlets that have the potential to receive sediment-laden surface runoff. Determine if storm drain inlet protection is needed and which method to use.

- Limit upstream drainage area to 1 acre maximum. For larger drainage areas, use SE-2, Sediment Basin, or SE-3, Sediment Trap, upstream of the inlet protection device.
- The key to successful and safe use of storm drain inlet protection devices is to know where runoff will pond or be diverted.
 - Determine the acceptable location and extent of ponding in the vicinity of the drain inlet. The acceptable location and extent of ponding will influence the type and design of the storm drain inlet protection device.
 - Determine the extent of potential runoff diversion caused by the storm drain inlet protection device. Runoff ponded by inlet protection devices may flow around the device and towards the next downstream inlet. In some cases, this is acceptable; in other cases, serious erosion or downstream property damage can be caused by these diversions. The possibility of runoff diversions will influence whether or not storm drain inlet protection is suitable; and, if suitable, the type and design of the device.
- The location and extent of ponding, and the extent of diversion, can usually be controlled through appropriate placement of the inlet protection device. In some cases, moving the

inlet protection device a short distance upstream of the actual inlet can provide more efficient sediment control, limit ponding to desired areas, and prevent or control diversions.

- Four types of inlet protection are presented below. However, it is recognized that other effective methods and proprietary devices exist and may be selected.
 - Filter Fabric Fence: Appropriate for drainage basins with less than a 5% slope, sheet flows, and flows under 0.5 cfs.
 - Excavated Drop Inlet Sediment Trap: An excavated area around the inlet to trap sediment (SE-3).
 - Gravel bag barrier: Used to create a small sediment trap upstream of inlets on sloped, paved streets. Appropriate for sheet flow or when concentrated flow may exceed 0.5 cfs, and where overtopping is required to prevent flooding.
 - Block and Gravel Filter: Appropriate for flows greater than 0.5 cfs.
- Select the appropriate type of inlet protection and design as referred to or as described in this fact sheet.
- Provide area around the inlet for water to pond without flooding structures and property.
- Grates and spaces around all inlets should be sealed to prevent seepage of sediment-laden water.
- Excavate sediment sumps (where needed) 1 to 2 ft with 2:1 side slopes around the inlet.

Installation

- **DI Protection Type 1 Filter Fabric Fence -** The filter fabric fence (Type 1) protection is shown in the attached figure. Similar to constructing a silt fence; see BMP SE-1, Silt Fence. Do not place filter fabric underneath the inlet grate since the collected sediment may fall into the drain inlet when the fabric is removed or replaced.
 - 1. Excavate a trench approximately 6 in. wide and 6 in. deep along the line of the silt fence inlet protection device.
 - 2. Place 2 in. by 2 in. wooden stakes around the perimeter of the inlet a maximum of 3 ft apart and drive them at least 18 in. into the ground or 12 in. below the bottom of the trench. The stakes must be at least 48 in.
 - 3. Lay fabric along bottom of trench, up side of trench, and then up stakes. See SE-1, Silt Fence, for details. The maximum silt fence height around the inlet is 24 in.
 - 4. Staple the filter fabric (for materials and specifications, see SE-1, Silt Fence) to wooden stakes. Use heavy-duty wire staples at least 1 in. in length.
 - 5. Backfill the trench with gravel or compacted earth all the way around.
- *DI Protection Type 2 Excavated Drop Inlet Sediment Trap -* The excavated drop inlet sediment trap (Type 2) is shown in the attached figures. Install filter fabric fence in

SE-10 Storm Drain Inlet Protection

accordance with DI Protection Type 1. Size excavated trap to provide a minimum storage capacity calculated at the rate 67 yd³/acre of drainage area.

- **DI Protection Type 3 Gravel bag -** The gravel bag barrier (Type 3) is shown in the figures. Flow from a severe storm should not overtop the curb. In areas of high clay and silts, use filter fabric and gravel as additional filter media. Construct gravel bags in accordance with SE-6, Gravel Bag Berm. Gravel bags should be used due to their high permeability.
 - 1. Use sand bag made of geotextile fabric (not burlap) and fill with 0.75 in. rock or 0.25 in. pea gravel.
 - Construct on gently sloping street.
 - 3. Leave room upstream of barrier for water to pond and sediment to settle.
 - 4. Place several layers of sand bags overlapping the bags and packing them tightly together.
 - 5. Leave gap of one bag on the top row to serve as a spillway. Flow from a severe storm (e.g., 10 year storm) should not overtop the curb.
- **DI Protection Type 4 Block and Gravel Filter** The block and gravel filter (Type 4) is shown in the figures. Block and gravel filters are suitable for curb inlets commonly used in residential, commercial, and industrial construction.
 - 1. Place hardware cloth or comparable wire mesh with 0.5 in. openings over the drop inlet so that the wire extends a minimum of 1 ft beyond each side of the inlet structure. If more than one strip is necessary, overlap the strips. Place filter fabric over the wire mesh.
 - 2. Place concrete blocks lengthwise on their sides in a single row around the perimeter of the inlet, so that the open ends face outward, not upward. The ends of adjacent blocks should abut. The height of the barrier can be varied, depending on design needs, by stacking combinations of blocks that are 4 in., 8 in., and 12 in. wide. The row of blocks should be at least 12 in. but no greater than 24 in. high.
 - 3. Place wire mesh over the outside vertical face (open end) of the concrete blocks to prevent stone from being washed through the blocks. Use hardware cloth or comparable wire mesh with 0.5 in. opening.
 - 4. Pile washed stone against the wire mesh to the top of the blocks. Use 0.75 to 3 in.

Costs

■ Average annual cost for installation and maintenance (one year useful life) is \$200 per inlet.

Inspection and Maintenance

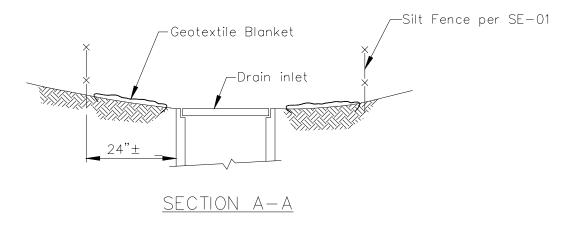
■ Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.

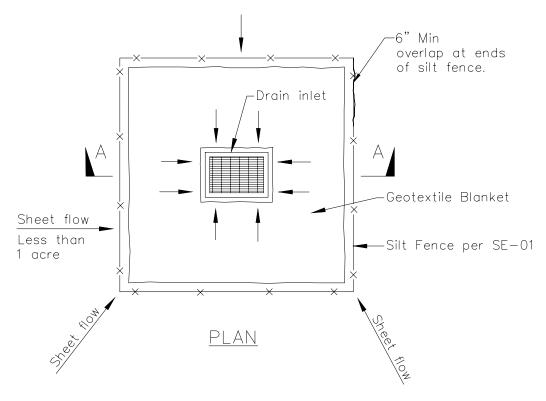
- Filter Fabric Fences. If the fabric becomes clogged, torn, or degrades, it should be replaced. Make sure the stakes are securely driven in the ground and are in good shape (i.e., not bent, cracked, or splintered, and are reasonably perpendicular to the ground). Replace damaged stakes.
- Gravel Filters. If the gravel becomes clogged with sediment, it must be carefully removed from the inlet and either cleaned or replaced. Since cleaning gravel at a construction site may be difficult, consider using the sediment-laden stone as fill material and put fresh stone around the inlet. Inspect bags for holes, gashes, and snags, and replace bags as needed. Check gravel bags for proper arrangement and displacement.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site ore disposed at an appropriate location.
- Remove storm drain inlet protection once the drainage area is stabilized.
 - Clean and regrade area around the inlet and clean the inside of the storm drain inlet as it must be free of sediment and debris at the time of final inspection.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management Manual for The Puget Sound Basin, Washington State Department of Ecology, Public Review Draft, 1991.

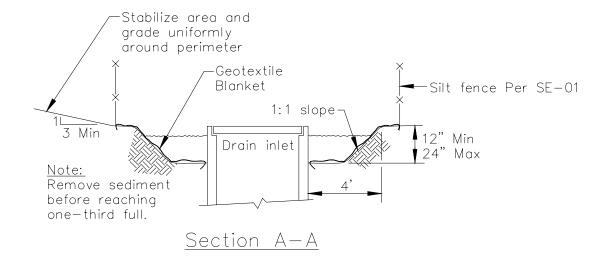


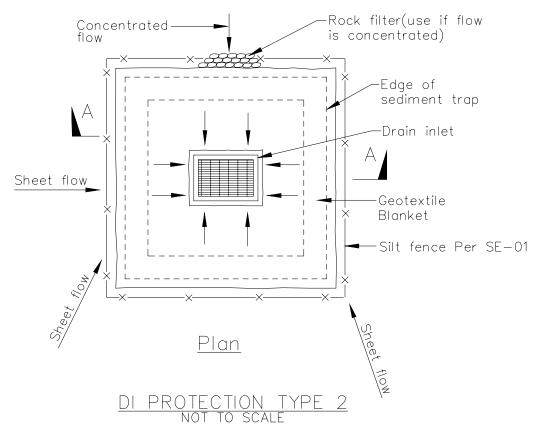


DI PROTECTION TYPE 1
NOT TO SCALE

NOTES:

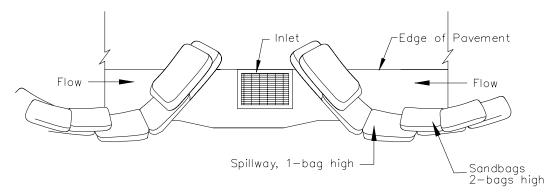
- 1. For use in areas where grading has been completed and final soil stabilization and seeding are pending.
- 2. Not applicable in paved areas.
- 3. Not applicable with concentrated flows.



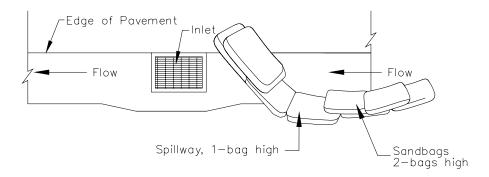


Notes

- 1. For use in cleared and grubbed and in graded areas.
- 2. Shape basin so that longest inflow area faces longest length of trap.
- 3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.



TYPICAL PROTECTION FOR INLET ON SUMP

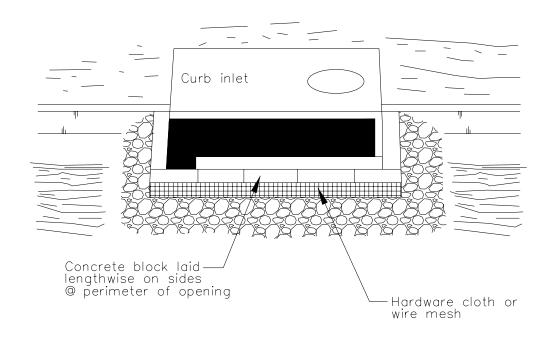


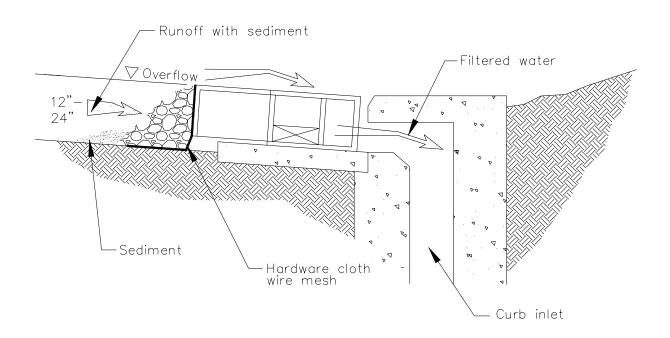
TYPICAL PROTECTION FOR INLET ON GRADE

NOTES:

- 1. Intended for short-term use.
- 2. Use to inhibit non-storm water flow.
- 3. Allow for proper maintenance and cleanup.
- 4. Bags must be removed after adjacent operation is completed
- 5. Not applicable in areas with high silts and clays without filter fabric.

DI PROTECTION TYPE 3 NOT TO SCALE





DI PROTECTION - TYPE 4

NOT TO SCALE