

ADDENDUM NO. 2

June 1, 2020

BIDDING AND CONTRACT DOCUMENTS

FOR

BOYD DEEP CANYON- ROAD REPAIR

PROJECT NO. 950515

CONTRACT NO. 950515-MF-2020-103



The following changes, additions, or deletions shall be made to the following documents as indicated for this Project; and all other terms and conditions shall remain the same. Each bidder is responsible for transmitting this information to all affected subcontractors and suppliers before the Bid Deadline.

1. **LIST OF DRAWINGS**

Delete List of Drawings and replace with the one issued in this Addendum.

2. **SPECIFICATIONS**

Delete existing Specifications Table of Contents and replace with the one issued in this Addendum.

Delete existing Specification 03 30 00 Cast-In-Place Concrete and replace it with the one issued in this Addendum.

Delete existing Specification 32 12 16 Asphalt Paving and replace it with the one issued in this Addendum.

Delete existing Specification 32 16 13 Curbs and Gutters and replace it with the one issued in this Addendum.

Delete existing Specification 32 17 23 Pavement Marking and replace it with the one issued in this Addendum.

3. **DRAWINGS**

Delete existing Sheet 4 of Bid Set Drawings and replace it with the one issued in this Addendum

4. **BID REQUESTS FOR INFORMATION**

BID RFI No.	QUESTIONS / ANSWERS
1-6	<p>Question: The Asphalt Pavement Section 32 12 16 refers to several repairs not specifically shown on the plans, such as Chip Seal (3.4), Slurry Seal (3.5), Sealing Cracks In Asphalt Pavement (3.4 & 3.5) and Cement Stabilized Pulverized Base CSPB (3.6). Please confirm whether or not these items are required?</p> <p>Answer: Not required.</p>
1-7	<p>Question: . The Asphalt Pavement Section 32 12 16 refers to a 'primer' in paragraph 3.2 Asphalt Concrete Pavement line B. Please confirm whether or not a primer is required and if so, what kind is specified? I would strongly recommend against a primer as it is very messy and adds little to no benefit to the pavement performance.</p> <p>Answer: SSPWC Sec 302-5 specifically includes a Prime Coat (302-5.3) and Tack Coat (302-5.4).</p>
1-8	<p>Question: . Does Alternate No. 3-'Pulverize and Compact Existing AC Pavement' refer to the entire road from STA 10+00.00 through STA 121+70.12? If so, does the election of this Alternate mean that there will be no asphalt repair work?</p> <p>Answer: Alternate 3 "Pulverize and Compact Existing AC Pavement" is for the existing pavement between station 10+00 to 121+70.12. If this alternate is selected, the Base</p>

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	Bid work items of sawcut and remove AC pavement, and place 4" AC pavement on compacted native will NOT be performed.
1-9	Question: Do we have to saw cut the asphalt removals if we are removing the asphalt with a milling machine and leave straight edges? Answer: As long as the joining edge is clean and vertical.
1-10	Question: Is there supposed to be a Ribbon Gutter between STA 25+27.5 and STA 25+40.7? If so, does it go with Alternate No. 1? Additionally, the road will need to be closed until the concrete strengthens as it appears there is too much mature vegetation to go around. Answer: No ribbon gutter between station 25=27.5 and 25+40.7.
1-11	Question: Does all of the striping depicted of Sheets 1-10 go with Alternate No. 1? Answer: All striping is listed as Alternate 1.
1-12	Question: Does the contractor have to pay for a water meter to access the hydrants referenced in Addendum 1? Answer: Contractor to coordinate meter directly with the district. Contractor responsible for all fees
1-13	Question: Is there supposed to be striping between STA 30+49.9 and STA 31+92.0? Answer: See revised sheet 4 for striping station limits.

END OF ADDENDUM

LIST OF DRAWINGS

SHEET NO.	TITLE	DATE
1	TITLE SHEET	May 2020
2	DETAILS AND NOTES	May 2020
3	WORK CONSTRUCTION SHEET	May 2020
4	WORK <u>OPTION 1</u> CONSTRUCTION SHEET	<u>Addendum 2,</u> <u>June 1, 2020</u> May 2020
5	WORK CONSTRUCTION SHEET	May 2020
6	WORK CONSTRUCTION SHEET	May 2020
7	WORK CONSTRUCTION SHEET	May 2020
8	WORK CONSTRUCTION SHEET	May 2020
9	WORK CONSTRUCTION SHEET	May 2020
10	WORK CONSTRUCTION SHEET	May 2020

END OF LIST OF DRAWINGS

SPECIFICATIONS

INDEX TO SPECIFICATIONS

DIVISION 1 – GENERAL REQUIREMENTS

- Section 01010 General Requirements
- Section 01 25 00 Material/Product Substitution Request
- Section 01 2613 Request For Information
- Section 01 3329.08 Buy Clean California Reporting
- Section 01 4300 Inspection Request
- Section 01 4300 Non-Conforming Work Notice
- Section 01 7700 Special Warranty

DIVISION 2 – SITE CONSTRUCTION

DIVISION 3 – CONCRETE

Revised Addendum 2 **Section 03 30 00 Cast-in-Place Concrete**

DIVISION 32 – EXTERIOR IMPROVEMENTS

Revised Addendum 2 **Section 32 12 16 Asphalt Paving**
Revised Addendum 2 **Section 32 16 13 Asphalt Paving**
Revised Addendum 2 **Section 32 17 23 Pavement Markings**

SECTION 01010 GENERAL REQUIREMENTS

1. GENERAL

1.1 Section Includes

- 1.1.1 Summary of Work
- 1.1.2 Coordination and Meetings
- 1.1.3 Submittals
- 1.1.4 Quality Control
- 1.1.5 Construction Facilities and Temporary Controls
- 1.1.6 Material and Equipment
- 1.1.7 Contract Closeout

2. SUMMARY OF WORK

2.1 Scope of Work Description

The access road which services the Boyd Deep Canyon Desert Research Center is a three mile stretch of asphalt which begins in the foothills of the Santa Rosa Mountains and stretches down through the wash to the levee which serves to protect the southern edge of the Reserve and Ironwood private communities. The University intends to perform some level of maintenance on the stretch of road with all work being completed before June 30, 2020. Since this is a singular access to the Research buildings it will be necessary to coordinate some level of access for the users who work and live at the Research Center.

2.2 Allowances – Not Used

2.3 Unit Prices

2.3.1 General

- 2.3.1.1 Insert unit price quotations in the appropriate spaces in the Bid Form for each unit price item of Work described herein.
- 2.3.1.2 Unit prices stated in the Agreement shall be used to compute adjustments of the Contract Sum for approved unit price items of Work. Such adjustments shall be made by Change Order.
- 2.3.1.3 Unit prices shall include all labor, materials, tools, and equipment; all other direct and indirect costs necessary to complete the item of Work and to coordinate the unit price Work with adjacent work; and shall include all overhead and profit. Contractor shall accept compensation computed in accordance with the unit prices as full compensation for furnishing such Work.
- 2.3.1.4 Compensation will be paid for those items of Work described herein.
- 2.3.1.5 Applicable Sections of the Specifications describe the materials and methods required under the various unit price items of Work.

2.3.2 Unit Price Items and Descriptions

.2.3.2.1 **Unit Price 1:** Provide Square Foot Cost for Additional Asphalt Remove and Replace

.2.3.2.2 **Unit Price 2:** Provide Square Foot Cost for Additional Concrete Crossing per Detail 3/Sheet 2 of the drawings

2.3.3 Execution

2.3.3.1 Contractor shall use advanced coordination, and shall immediately notify University's Representative when conditions require the use of unit price items of Work.

2.3.3.2 The applicability of, measurement methods for, documentation of, and the final adjustment of the Contract Sum for unit price items of Work shall be determined by University's Representative.

2.3.3.3 After performing unit price items of Work as directed by University's Representative, Contractor shall take necessary measurements in the presence of University's Representative and shall submit calculations of quantities to University's Representative for approval. Contractor shall notify University's Representative 1 day in advance of taking measurements.

2.4 Alternates

2.4.1 General

2.4.1.1 This Section identifies each Alternate and describes basic changes to the Work only when that Alternate is made a part of the Work by specific provision in the Agreement.

2.4.1.2 The Lump Sum Base Bid and Alternate(s) shall include the costs of all supporting elements required, so that the combination of the Lump Sum Base Bid and any Alternate shall be complete. The scope of Work for all Alternates shall be in accordance with applicable Drawings and Specifications.

2.4.1.3 Except as otherwise specifically provided by University, the Work described in an Alternate shall be completed with no increase in Contract Time.

2.4.1.4 This Section includes only the non-technical descriptions of the Alternate(s). Refer to the specific Sections of the Specifications Divisions 2-16, as applicable, for technical descriptions of the Alternate(s).

2.4.1.5 Contractor shall coordinate related Work and modify surrounding Work as required to properly and completely integrate the Alternates into the Work.

2.4.2 Description of Alternate(s)

2.4.2.1 **Alternate 1:**

Add: Ribbon Gutter, AC Berm, Grade Area to Drain, and Apply 4" White Stripe

2.4.2.2 **Alternate 2a:**

Add: Concrete Crossing

2.4.2.3 **Alternate 2b:**

Deduct: Place 4" AC Pavement on Compacted Native within Concrete Crossing limits of Work.

2.4.2.4 **Alternate 3a:**

Add: Pulverize and Compact Existing AC Pavement.

2.4.2.5 **Alternate 3b:**

Deduct: Sawcut and Remove Existing AC Pavement within Pulverize and Compact Existing AC Pavement limits.

3. COORDINATION AND MEETINGS

3.1 Project Coordination

3.1.1 The Contractor shall coordinate the Work.

3.1.2 Contractor shall verify that utility requirement characteristics of operating equipment are compatible with building utilities.

3.1.3 Contractor shall coordinate space requirements and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit as closely as practicable. In finished areas, conceal pipes, ducts, and wiring within the construction.

3.2 Project Meetings

3.2.1 University will schedule a preconstruction meeting either concurrently with or after issuing the Notice to Proceed, but prior to the commencement of the Work.

3.2.2 University's Representative will schedule and administer meetings throughout the progress of the Work.

3.2.3 University's Representative will preside at the meetings, record minutes, and distribute copies within 3 days to Contractors, Design Professional, and to University.

4. SUBMITTALS

4.1 Schedules

4.1.1 Preliminary Contract Schedule

- 4.1.1.1 Submit the Preliminary Contract Schedule to University's Representative within the time specified in the Instructions to Bidders and Supplementary Instructions to bidders.
- 4.1.1.2 Submit 1 hardcopy and 1 electronic copy in MS Excel, MS Word, Microsoft Project, or other software format approved by University's Representative. Use the form of a bar chart, GANT chart, or other system approved by University's Representative showing the start date and final completion date of the Project, with the various work activities involved and other information relative to the progress of the Work, in a continuous flow from left to right.
- 4.1.1.3 Show sufficient detail to demonstrate adequate planning for the Work, represent a practical plan to complete the Work within the Contract Time, and suitable for monitoring progress of the Work.
- 4.1.1.4 Identify the milestone events and Work activities for completion of the Project. At a minimum, identify the following:

- Commencement Date
- Submittals (Receipt through Approval)
- Lead Times (e.g., materials, etc.)
- Demolition
- As-Builts
- M&O Manuals
- Substantial Completion
- Punchlist
- Final Cleaning
- Final Inspection
- Final Completion

- 4.1.1.5 Identify all Work activities that constitute the critical path.
- 4.1.1.6 A minimum of 7 days shall be allotted for University's Representative to review each submittal.
- 4.1.1.7 Identify all holidays and non-working days. Note the following University Holidays and Campus Closure Days:

- New Year's Day: Holiday
- Martin Luther King, Jr. Day (3rd Monday in January): Holiday
- Presidents' Day (3rd Monday in February): Holiday
- Cesar Chavez Day (Last Friday in March): Holiday
- Memorial Day (Last Monday in May): Holiday
- Independence Day (July 4): Holiday
- Labor Day (1st Monday in September): Holiday
- Veterans' Day (November 11): Holiday
- Thanksgiving Day (4th Thursday in November): Holiday
- Friday following Thanksgiving Day: Holiday
- Christmas Eve: Holiday
- Christmas Day: Holiday
- December 28 – 29, 2010: Campus Closure
- New Year's Eve: Holiday

Exception: A University Holiday that falls on a Saturday is observed on the preceding Friday, and a University Holiday that falls on a Sunday is

observed on the following Monday, unless an alternate day to observe the University Holiday is designated.

4.1.2 Contract Schedule

4.1.2.1 Submit the Contract Schedule within 15 days prior to submitting an Application For Payment. No Application For Payment will be processed nor shall any progress payment become due until the Contract Schedule is accepted by University's Representative per 4.1.2.

.1 The accepted, updated Contract Schedule shall be the Contract Schedule of record for the period it is current and shall be the basis for payment during that period.

4.1.2.2 Submit 1 hardcopy and 1 electronic copy in MS Excel, MS Word, Microsoft Project, or other software format approved by University's Representative.

4.1.2.3 Within 5 days after receipt of the Contract Schedule, University's Representative will notify Contractor of its acceptance or return with comments for resubmittal so that appropriate adjustments can be made by Contractor in the development of the Contract Schedule.

4.1.2.4 Submit the Contract Schedule in the same form as required in subsection 4.1.1.

4.1.2.5 Identify all Work activities in correct sequence for the completion of the Work. Work activities shall include the following:

.1 All Work activities that constitute the critical path.

.2 Major Contractor-furnished equipment, materials, and building elements, and scheduled activities requiring submittals or University's prior approval.

.3 Show dates for the submission, review, and approval of each submittal. Dates shall be shown for the procurement, fabrication, delivery, and installation of major equipment, materials, and building elements, and for scheduled activities designated by University.

.4 A minimum of 7 days shall be allotted for University's Representative to review each submittal.

.5 System test dates.

.6 Scheduled overtime Work if required by Contract Documents.

.7 Dates Contractor requests designated working spaces, storage areas, access, and other facilities to be provided by University.

.8 Dates Contractor requests orders and decisions from University on designated items.

.9 Dates Contractor requests University-furnished equipment.

- .10 Dates Contractor requests University-furnished utilities.
- .11 Connection and relocation of existing utilities.
- .12 Connecting to or penetrating existing structures.
- .13 Scheduled inspections as required by Codes, or as otherwise specified.

4.1.2.6 Critical Work activities are defined as Work activities which, if delayed or extended, will delay the scheduled completion of one or more of the milestones specified in this Section or the scheduled completion of the Work, or both. All other Work activities are defined as non-critical Work activities and are considered to have float.

4.1.2.7 Float is defined as the time that a non-critical Work activity can be delayed or extended without delaying the scheduled completion of milestones specified in this Section or the scheduled completion of the Work, or both. Neither Contractor nor University shall have an exclusive right to the use of float. The party using float shall document the effect on the updated Contract Schedule.

4.1.2.8 Delays of any non-critical Work activity shall not be the basis for an extension of Contract Time until the delays consume the float associated with that non-critical Work activity and cause the Work activity to become critical.

4.1.2.9 The presentation of each Work activity on the Contract Schedule shall include a brief description of the Work activity, the duration of the Work activity in days, and a responsibility code identifying the organization or trades performing the Work activity.

4.1.2.10 Updating

.1 Review the Contract Schedule with University's Representative once each week to incorporate in the Contract Schedule all changes in the progress, sequences, and scope of Work activities.

.2 The updated Contract Schedule shall accurately represent the as-built condition of all completed and in-progress Work activities as of the date of the updated Contract Schedule.

.3 Contractor shall perform the Work in accordance with the updated Contract Schedule approved by University's Representative.

4.2 Proposed Products List

4.2.1 Within 7 days after the commencement date specified in the Notice to Proceed, Contractor shall submit a complete list of major Products proposed for use, with the name of the manufacturer, trade name, and model number of each Product.

4.2.2 For product substitutions, see 7.3 of this Section.

4.3 Shop Drawings

4.3.1 Contractor shall submit in the form of one reproducible transparency.

4.4 Product Data

4.4.1 Contractor shall submit 3 copies. Mark each copy to identify applicable models, options and other data for each Product.

4.5 Samples

4.5.1 Contractor shall submit samples to illustrate functional and aesthetic characteristics of the Products.

5. QUALITY CONTROL

5.1 University's Testing Laboratory

5.1.1 If applicable to the Work of this Project, University will appoint, employ, and pay for services of an independent firm (University's Testing Laboratory) to perform inspection and testing. University's Testing Laboratory will perform inspections, tests, and other services as required by the University.

5.1.2 Contractor shall cooperate with University's Testing Laboratory and furnish samples as requested.

5.1.3 Any cost of re-testing, required because of non-conformance to specified requirements, will be charged to Contractor.

5.2 Not Used

6. CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

6.1 Staging Area

6.1.1 The staging area to be used by Contractor shall be the area designated on Drawing

6.2 Work Hours

6.2.1 The University's normal business hours are:

6.2.2 The University is closed on the following Holidays: see 4.1.1.7 above.

6.2.3 Special provisions:

6.3 Health and Safety

6.3.1 Contractor is responsible for the safety and health of employees and the public, and shall comply with OSHA regulations and perform in accordance with all applicable Local, State and Federal Regulations; including CFR-29 (*Code of Federal Regulations*), Part 1910; *Occupational Safety and Health Standards*, Part 1925; *Safety and Health Standards for Federal Service Contracts*; and Part 1926 *Safety and Health Regulations for Construction*. Contractor shall maintain current injury and illness prevention plan (IIPP) that complies with Local, State and Federal requirements and shall submit a copy of the IIPP to the University Representative for review upon request. Contractor shall follow the IIPP closely throughout the Work and will be solely responsible for any and all fines or citations resulting from

non-compliance with all applicable Local, State and Federal laws and regulations. Any contractor work-related accident, which results in injury or property damage, shall be reported as soon as possible to the UCR Department of Environmental Health & Safety at (951) 827-5528. For all accidents, the Contractor shall be required to complete any reports deemed necessary and within the time-frame specified by the University's Representative. Work may be stopped at the discretion of the University's Representative subsequent to review by the Head of Industrial Hygiene, UCR Department of Environmental Health & Safety, if an unsafe or non-compliant condition is found to exist, and at no additional cost or adjustment to the Contract Sum.

6.4 Waste Management

6.4.1 Collection and Disposal of Waste: Contractor shall furnish all labor, equipment, containers, transportation, materials, supplies and related expenses to provide the University with comprehensive waste collection and waste recycling services for the Project. Contractor shall collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 degrees F (27 degrees C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly.

- .1 Do not burn waste materials. Do not bury debris or excess materials on the University's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems or streams. Remove waste materials from the site and dispose of lawfully.
- .2 Where extra materials of value remain after completion of associated Work, they become the University's property. Dispose of these materials as directed by the University's Representative.
- .3 Provide on-site containers for collection of waste materials, debris, and rubbish, and empty at least weekly. Maintain containers in such condition so as to ensure they are clean and sanitary, to prevent odor and insect infestation, and ensure no unsightly presentation. Perform maintenance on the containers as required to ensure proper function for the intended purpose.
- .4 Handle waste materials in a controlled manner. Do not drop or throw materials from heights.
- .5 Remove combustible debris from the building daily and store in covered, non-combustible containers located not less than 40 feet from any building.

6.4.2 Cleaning During Construction Period: Comply with regulations of the University and safety standards for cleaning.

- .1 Schedule cleaning operations so that dust and other contaminants resulting from cleaning operations will not settle on wet paint, or other coatings or finishes during their cure period.
- .2 Comply with manufacturer's instructions for cleaning the surfaces and parts of finishes and equipment. Use only those cleaning materials and procedures recommended by the manufacturer of the item to be cleaned.

- .3 Provide cleaning during construction as necessary to ensure operations can proceed on schedule and that finish materials can be installed properly and viewed for determination of aesthetic characteristics.
- 6.4.3 Cleaning Agents: Use cleaning materials and agents recommended by the manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.
- 6.4.4 Environmental Requirements: Conduct cleaning and waste-disposal operations in compliance with local laws and ordinances. Comply fully with federal and local environmental and antipollution regulations.
 - .1 Do not dispose of volatile wastes, such as mineral spirits, oil, or paint thinner, in streams, storm or sanitary drains.
 - .2 Burning or burying of debris, rubbish, or other waste material on the premises is not permitted.
 - .3 Comply with requirements of Southern California Air Quality Management District in effect at the time of construction.
 - .4 Comply with governing regulations and safety standards for cleaning operations. Remove waste materials from the site and dispose of lawfully.
- 6.4.5 Submittal: Prior to requesting inspection for Substantial Completion and Final Completion, submit written certification to the University's Representative that final cleaning has been performed in accordance with the Contract Documents.
- 6.4.6 The University has established that this Project shall generate the least amount of waste possible and that processes that ensure the generation of as little waste as possible shall be employed to enable the University to meet a minimum 95% percent diversion of construction waste from the landfill.
- 6.4.7 Contractor shall be responsible for monitoring and maintaining a written log using the C&D Waste Management Form, a copy of which is attached at the end of this Section, to report when actual container deliveries and waste pickups occur, the kinds of C&D waste material included, and for submitting the data to University's Representative, or designee, **with each Application for Payment**. Such written information shall be used as backup to support payment of Contractor's scheduled value for Division 1, General Requirements.
- 6.4.8 C&D waste is a combination of concrete, lumber, plaster, cardboard, glass, various metals, paper, PVC, ABS, HDPE, PP, PDPE, PET, white foam, paint buckets, carpet and dirt. C&D waste accepted for recycling:
 - .1 Card Board
 - .2 Mixed metals
 - .3 PVC Pipe
 - .4 ABS Pipe
 - .5 H.D.P.E. Pipe
 - .6 Carpet
 - .7 Carpet Pad
 - .8 Mixed Plastics
 - .9 Glass
 - .10 Bottles & Cans – CRV
 - .11 H.D.P.E Plastics

- .12 H.D.P.E Pipe
- .13 Foam – White
- .14 Paper – Mixed
- .15 Plastic Buckets – Paint (empty) & Landscapers
- .16 Drywall
- .17 Wood
- .18 Particle Board
- .19 Green Waste – No Grass Clippings – All tree trunks/branches need to me cut up into 4' x 10" pieces
- .20 Enerts – Soil, Asphalt, Brick, Concrete..

6.5 Hazardous Materials

- 6.5.1 Refer all questions to the University's Representative.

6.6 Temporary Electricity

- 6.6.1 All Electrical Utility service shall confirm to NEC Code.
- 6.6.2 Contractor shall connect to existing power service without modification. Modifications to existing infrastructure shall be made only with prior approval of the University's Representative. Power consumption shall not disrupt or jeopardize the University's requirement for uninterrupted service.
- 6.6.3 Contractor shall provide power for construction operations utilizing rated/certified branch wiring, distribution boxes, flexible power cords, and receptacles as required.
- 6.6.4 University will pay the cost of the power used.

6.7 Temporary Lighting

- 6.7.1 All temporary lighting shall conform to NEC Code.
- 6.7.2 Contractor shall provide and maintain lighting for construction operations. Provide rated/certified branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- 6.7.3 Disconnection of existing building lighting shall be made only with prior approval of University's Representative.

6.8 Temporary Heat

- 6.8.1 Contractor shall utilize University's existing heat plant. Contractor shall not rig, alter or modify existing HVAC without prior approval of University's Representative.
- 6.8.2 Contractor shall provide temporary supplemental HVAC as required to maintain specified conditions during construction operations.
- 6.8.3 Contractor shall provide and pay for delivery, setup, operation, maintenance, and regular replacement of such equipment, filters, and worn or consumed parts as a part of the Project.
- 6.8.4 University will pay the cost of the energy used.

6.9 Temporary Ventilation

- 6.9.1 All ventilation remedies shall be approved by University's Representative before implementation by Contractor.
- 6.9.2 Contractor shall ventilate enclosed areas to assist the cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, and gases.
- 6.9.3 As required to maintain clean air during construction operations, Contractor shall provide ventilation equipment or supplement existing ventilation equipment.
- 6.9.4 Hazardous materials presence and remediation shall be strictly covered under 6.3 of this Section.

6.10 Telephone Service

- 6.10.1 Contractor shall provide cellular, mobile, or two-way communication, or provide, maintain, and pay for telephone service to a field office location as identified by University's Representative, commencing at the time of mobilization and terminated upon Final Completion.

6.11 Temporary Water Service

- 6.11.1 Contractor shall connect to existing water source for construction operations.
- 6.11.2 Disruption of existing domestic hot and cold, de-ionized, chilled, industrial or irrigation water sources shall be made only with prior approval of University's Representative.

6.12 Temporary Sanitary Facilities

- 6.12.1 Contractor shall provide and maintain required sanitary facilities and enclosures.
- 6.12.2 University's existing sanitary facilities may be used only with the prior approval of University's Representative. Contractor shall maintain sanitary facilities in a clean and sanitary condition.
- 6.12.3 Do not flush construction materials down toilets or sinks.

6.13 Site Access and Public Safety

- 6.13.1 Contractor shall provide prudent signage, barriers or fencing to prevent unauthorized access to construction areas and to protect existing facilities and adjacent properties from damage.
- 6.13.2 Contractor shall provide oversight by Contractor's personnel to direct pedestrian and vehicular traffic away from the Project site or areas that University reasonably expects to remain secure during construction per University's Representative.
- 6.13.3 To the extent reasonably possible, Contractor shall implement such precautions and coordinate through University's Representative to allow normal University business to continue.

6.14 Site Control – Progress Cleaning

- 6.14.1 Contractor shall maintain the Project site in a clean and orderly condition at all times free of waste, materials, debris, and rubbish.

6.14.2 University's dumpsters and trash receptacles shall not be used for construction waste.

6.14.3 Contractor shall provide for collection, removal and transportation of all waste materials from the site in accordance with 6.2 of this Section.

6.15 Water Control

6.15.1 Contractor shall maintain Project site and adjacent areas free of water. Provide, operate and maintain pumping equipment.

6.15.2 Do not allow excess water to run in streets or gutters.

6.16 Dust Control

6.16.1 Contractor shall maintain Project site and adjacent areas free of accumulated dirt and dust from construction on a daily basis. As approved by University's Representative, provide sweeping and/or vacuuming, wipe down and/or wash down procedures to be used by Contractor's personnel and Contractor's subcontractors.

6.17 Interior Enclosures

6.17.1 All interior demarcations shall be approved by the Campus Fire Marshal before construction/installation.

6.17.2 Contractors shall provide temporary partitions and/or coverings as required to separate Work area from University occupied area(s), to prevent penetration of dust and moisture into University occupied area(s), and to prevent damage to existing materials and equipment.

6.18 Protection of Installed Work

6.18.1 Contractor shall protect installed Work and provide special protection where specified in individual Specification Sections.

6.19 Security

6.19.1 Contractor shall provide security and facilities to protect Work, existing facilities, and University's operations from unauthorized entry, vandalism, or theft.

6.20 Access Roads

6.20.1 Designated University access roads may be used by construction traffic for the purposes of reaching the Project site, delivery of materials and removal of waste, with the prior approval of University's Representative. Otherwise, use of and parking on University access roads is strictly prohibited.

6.21 Parking

6.21.1 Contractor shall be responsible for obtaining required permits for all vehicles parked on University property.

6.21.2 Arrangements for access, lay-down and parking shall be approved by University's Representative.

- 6.21.3 For parking permit information, contact University's Transportation & Parking Services (TAPS) located at 683 Linden Street, Riverside, California 92521, or by calling at (951) 827-8277. Notify TAPS at the time you purchase your permit(s) that you are contracted through Facilities – Design & Construction, Contracts Administration. All contractors, subcontractors, suppliers, etc. are responsible for properly displaying parking permits and for following all parking codes and regulations. Gate passes are required for certain areas and are available from TAPS for a refundable fee or at additional cost. All fees are subject to change without notice.
- 6.21.4 It is the Contractor's responsibility to determine and include all costs associated with doing business with the University in its bid.

6.22 Removal of Temporary Utilities, Facilities, and Controls

- 6.22.1 Contractor shall remove temporary above grade or buried utilities, equipment, facilities, materials, and controls before Final Inspection.
- 6.22.2 Contractor shall clean and repair/restore to original condition damage caused by installation, removal, or use of temporary utilities, facilities or controls.

7. MATERIALS AND EQUIPMENT

7.1 Products

- 7.1.1 The term "Product" or "Products" means new material, machinery, components, equipment, fixtures, and systems forming the Work.

7.2 Transportation, Handling, Storage, and Protection

- 7.2.1 Transport, handle, store, and protect Products in accordance with manufacturer's instructions.

7.3 Substitutions

- 7.3.1 When a product, material or equipment specified by brand or trade name is followed by the words "or equal," a substitution may be permitted if the substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and if the substitution complies with all other requirements of the plans and specifications.
- 7.3.2 A request for substitution must be submitted in writing to the University's Representative not later than **35 days** after the date of commencement specified in the Notice to Proceed. No requests for substitutions of products, material or equipment subject to the **35-day** deadline shall be considered unless the request and supporting data is submitted on or before the deadline, except those deemed, in University's Representative's sole opinion, to be necessary because (i) previously specified or approved manufactured products, material or equipment are no longer manufactured, (ii) of University initiated change orders, or (iii) it is in the best interest of University to accept such substitution. The **35-day** submittal period does not excuse the Contractor from completing the Work within the Contract Time.
- 7.3.3 Substitutions are not allowed unless approved in writing by the University's Representative. Any such approval shall not relieve Contractor from the requirements of the Contract Documents. In addition to complying with all other submittal requirements of the Contract, submit written data demonstrating that the

proposed substitution is equal to or superior to the first-named product, material or equipment in quality, utility and appearance and otherwise complies with all requirements of the plans and specifications.

- 7.3.4 The first-named product, material or equipment specified by brand or trade name and model number is the basis for the Project design and the use of any item other than the first-named one may require modifications of that design. If Contractor uses any product, material or equipment other than the first-named one, Contractor shall, at its sole cost, make all revisions and modifications to the design and construction of the Work necessitated by the use the product, material or equipment. If such revisions or modifications are necessary, the product, material or equipment may be used only if the revisions or modifications are approved in writing by the University's Representative.
- 7.3.5 Other products, material or equipment that are specified by brand or trade name and model number are approved for use, provided that Contractor complies with all Contract requirements. Specification of a product, material or equipment by brand or trade name and model number is not a representation or warranty that the product, material or equipment is available or that it can be used without modification, to meet the requirements of the plans and specifications; Contractor shall confirm, prior submitting a bid the availability of any product, material, or equipment. If modifications are necessary, Contractor shall, at its sole cost, modify such products, material, or equipment so that they comply with all requirements of the plans and specifications.

8. CONTRACT CLOSEOUT

8.1 Final Cleaning

- 8.1.1 Contract shall execute final cleaning before Final Inspection.
- 8.1.2 Contractor shall clean interior and exterior surfaces exposed to view.
- 8.1.3 Contractor shall vacuum carpeted and soft surfaces, and wipe down hard floors and walls as needed.
- 8.1.4 Contractor shall clean light fixtures as needed.
- 8.1.5 Contractor shall replace filters in operating equipment.
- 8.1.6 Contractor shall remove all waste, rubbish, and construction equipment from the Project site.
- 8.1.7 Contractor shall remove all surplus materials from the Project site, and shall deliver them to University's Representative.

8.2 As-Built Documents

- 8.2.1 Contractor shall maintain and keep current on a daily basis, one set of Contract Documents to be used for As-Built ("red-lined" drawings and specifications) documents.
- 8.2.2 Unless otherwise approved by University's Representative, Contractor shall keep and maintain the As-Built documents on the Project site.
- 8.2.3 Contractor shall deliver the As-Built documents to University's Representative before Final Inspection.

8.3 Operations and Maintenance Data

8.3.1 Contractor shall submit 2 sets before Final Inspection, printed on 8-1/2 x 11 inch text pages, bound in D-sided three-ring binders with durable plastic covers.

8.3.2 Contractor shall prepare the binder cover with the printed title, "OPERATION AND MAINTENANCE INSTRUCTIONS," along with the Project Name and Project Number.

8.3.3 Contractor shall include in the binder as contents:

8.3.3.1 Directory listing the names, addresses, telephone numbers, facsimile numbers and email addresses of:

- .1 Design Professional
- .2 Contractor
- .3 All subcontractors
- .4 Major equipment suppliers.

8.3.3.2 Operation and maintenance instructions arranged by system.

8.3.3.3 Project documents and certificates.

8.4 Guarantees

8.4.1 Article 10 of the General Conditions requires all items to be guaranteed for a period of at least 1 year. Guarantees for more than 1 year where indicated in various Specification Sections shall be written on the letterhead of the Contractor, subcontractor, or supplier doing the Work and/or supplying the item to be guaranteed and shall be in the form of the guarantee contained on the following page of this Section.

GUARANTEE

Date: _____

Project Name: _____ Project No.: _____
 Project Location: University of California, Riverside, _____
 _____ (City) _____ (County)

GUARANTEE FOR _____, Contract No. _____
 _____ (Specification Section)
 (the "Contract"), between The Regents of the University of California ("University") and _____ ("Contractor").
 _____ (Name of Prime Contractor)

_____ ("Subcontractor") hereby guarantees to
 _____ (Name of Subcontractor)
 University that the portion of the Work described as follows:

_____ which it has provided for the above referenced Project, is of good quality; free from defects; free from any liens, claims, and security interests; and has been completed in accordance with the Specification Section specified above and the other requirements of the Contract.

The undersigned further agrees that, if at any time within _____ months after the date of the guarantee the undersigned receives notice from University that the aforesaid portion of the Work is unsatisfactory, faulty, deficient, incomplete, or not in conformance with the requirements of the Contract, the undersigned will, within 10 days after receipt of such notice, correct, repair, or replace such portion of the Work, together with any other parts of the Work and any other property which is damaged or destroyed as a result of such defective portion of the Work or the correction, repair, or replacement thereof; and that it shall diligently and continuously prosecute such correction, repair, or replacement to completion.

In the event the undersigned fails to commence such correction, repair, or replacement within 10 days after such notice, or to diligently and continuously prosecute the same to completion, the undersigned, collectively and separately, do hereby authorize University to undertake such correction, repair, or replacement at the expense of the undersigned; and Contractor will pay to University promptly upon demand all costs and expenses incurred by University in connection therewith.

SUBCONTRACTOR:

CONTRACTOR:

 (Signature & Date)

 (Print Name & Title)
 _____ (License Classification) _____ (License No.)

 (Street Address)

 (City, State & Zip Code)

 (Phone Number(s))

 (Signature & Date)

 (Print Name & Title)
 _____ (License Classification) _____ (License No.)

 (Street Address)

 (City, State & Zip Code)

 (Phone Number(s))

SECTION 03 30 00
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section specifies preparation of the project site cast-in-place concrete.

B. Related Requirements:

1. Section 01 23 00 ~~WORK OPTIONS~~ **ALTERNATES**.
2. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
3. Completely coordinate with work of other trades.

1.2 REFERENCES:

- A. Standard Specifications for Public Works Construction (SSPWC), ~~2015~~ **2018** edition, and supplements for rock materials. The Standard Specifications apply only to performance and materials and how they are to be incorporated into the Work. The legal/contractual relationship, measurement and payment sections of the SSPWC do not apply to this document.

1.3 SUBMITTALS

- A. Concrete curing plan.
- B. Product data for materials and products.
- C. Concrete mix design.
- D. Aggregate test report.
- E. Compaction test report.

1.4 DELIVERY, STORAGE AND HANDLING

A. Concrete:

Do not deliver concrete until forms, reinforcement, and embedded items are in place and ready for concrete placement.

B. Reinforcement:

Store reinforcement of different sizes and shapes in separate piles or racks raised above the ground to avoid excessive rusting. Protect from contaminants such as grease, oil, and dirt. Ensure bar sizes can be accurately identified after bundles are broken and tags removed.

1.5 QUALITY ASSURANCE

- A. Where a particular type of material or method is specified, no other type of material or method will be permitted, except as described in Section 00 26 00, but balance of Specifications shall apply.
- B. Field inspection and testing will be performed under provisions of Section 01 45 23.
- C. Concrete Curing Plan-Submit proposed materials, methods and duration for curing concrete elements in accordance with ACI 308.1.

D. Pumping Concrete-Submit proposed materials and methods for pumping concrete. Submittal must include mix designs, pumping equipment including type of pump, size and material for pipe, and maximum length and height concrete is to be pumped.

1.6 SUSTAINABLE DESIGN REQUIREMENTS

A. Local/Regional Materials:

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available. Submit documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site.

B. Forest Stewardship Council (FSC) Certification:

Use FSC-certified wood. Provide letter of certification signed by lumber supplier. Indicate compliance with FSC STD 01 001 and identify certifying organization. Submit FSC certification numbers; identify each certified product on a line-item basis. Submit copies of invoices bearing the FSC certification numbers.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Wood Forms:

1. Provide lumber that is square edged or tongue-and-groove boards, free of raised grain, knotholes, or other surface defects. Provide plywood that complies with NIST PS 1, B-B concrete form panels or better or AHA A135.4, hardboard for smooth form lining.

B. Form Ties and Accessories:

1. Provide a form tie system that does not leave mild steel after break-off or removal any closer than 2 inches from the exposed surface. Do not use wire alone. Form ties and accessories must not reduce the effective cover of the reinforcement.

C. Concrete:

1. Concrete conforming to relevant provisions of Section 201 – Concrete, Mortar, and Related Materials of the Standard Specifications for Public Works Construction.
2. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates to Owner for each batch discharged and used in the Work.

D. Steel reinforcement:

1. Reinforcing Bars: ASTM A 615, Grade 60; deformed.
2. Bar Supports: Use dense pre-cast concrete supports with embedded wire ties for reinforcement placed on grade. Elsewhere, use wire bar supports.
3. Tie wire: ASTM A82, Annealed copper-bearing steel, 16 gauge minimum.

E. Fabrication of reinforcing bars:

1. Comply with CRSI Manual of Standard Practice for Reinforced Concrete Construction for fabrication of reinforcing steel.
2. Bending and Forming: Fabricate bars of the indicated sizes and bend and form to required shapes and lengths by methods not injurious to materials. Do not heat reinforcement for bending. Bend bars No. 6 size and larger in the shop only. Bars with unscheduled kinks or bends are subject to rejection. Use only tested and approved bar materials.

F. Bond breaker: Liquid membrane, plastic film or asphalt saturated felt or paper.

G. Liquid curing compound:

1. Comply with ASTM C309 and State Specifications.

PART 3 - EXECUTION

3.1 CAST-IN-PLACE CONCRETE

A. Perform all cast-in-place concrete shall be constructed as defined in Section 302-6 of the SSPWC.

B. Sub-Grade Preparation:

1. Clear the limits of placement of cast-in-place-concrete of all brush, vegetation and debris, and dispose of in a legal manner.
2. Remove excess earth material to the elevation of the sub-grade for the cast-in-place concrete.
3. Scarify the sub-grade a minimum of 6 inches in depth.
4. Compact the sub-grade to a minimum relative compaction of 90 percent, adding earth material as necessary to achieve the sub-grade elevation.

C. Forms:

1. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
2. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

D. Steel reinforcement

1. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
2. Before placing bars, and again before concrete is placed, clean bars of loose mill scale, oil, or any other coating that might destroy or reduce bond.
3. Clearances: Maintain minimum clear distances between reinforcing bars and face of concrete as indicated or directed.
4. Splices: Do not splice reinforcing bars at the points of maximum stress except where indicated. Lap splices as shown or required to develop the full strength or stress of bars. Stagger splices in horizontal wall bars at least 48" longitudinally in alternate bars and opposite faces.
5. Maintaining Bars In Position: Take adequate precautions to assure that reinforcing position and spacing is maintained during placement of concrete.

E. Concrete color: All concrete paving shall be GRAY colored

F. On properly compacted sub-grade, place concrete per plan.

1. Screed to avoid material segregation using mechanical methods. Manual methods may be used in small areas.
2. Cold Weather:
Do not allow concrete temperature to decrease below 50 degrees F. Obtain approval prior to placing concrete when the ambient temperature is below 40 degrees F or when concrete

is likely to be subjected to freezing temperatures within 24 hours. Cover concrete and provide sufficient heat to maintain 50 degrees F minimum adjacent to both the formwork and the structure while curing. Limit the rate of cooling to 37 degrees F in any 1 hour and 50 degrees F per 24 hours after heat application.

3. Hot Weather:

Maintain required concrete temperature using Figure 4.2 in ACI 305R to prevent the evaporation rate from exceeding 0.2 pound of water per square foot of exposed concrete per hour. Cool ingredients before mixing or use other suitable means to control concrete temperature and prevent rapid drying of newly placed concrete. Shade the fresh concrete as soon as possible after placing. Start curing when the surface of the fresh concrete is sufficiently hard to permit curing without damage. Provide water hoses, pipes, spraying equipment, and water hauling equipment, where job site is remote to water source, to maintain a moist concrete surface throughout the curing period. Provide burlap cover or other suitable, permeable material with fog spray or continuous wetting of the concrete when weather conditions prevent the use of either liquid membrane curing compound or impervious sheets. For vertical surfaces, protect forms from direct sunlight and add water to top of structure once concrete is set.

G. Driving Surface Texture:

1. Finish the driving surface per Section 302-6.4.4 of the SSPWC.
 - a. Finish should be equivalent to a "rough broom" texture.

H. Weakened Plane Joints:

1. Construct per Section 302-6.5.4 of the SSPWC.
2. Spacing 10 FEET maximum between joints.
3. Provide for weakened plane joints at end of each day's work at and whenever necessary to suspend work.

I. Curing:

1. Cast-in-place concrete to be cured per Section 302-6.6 of the SSPWC.

3.2 REPAIRS AND PROTECTION

- A. Remove and replace concrete pavement that is broken, damaged, or defective or that does not comply with requirements in this Section.
- B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.
- C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

SECTION 32 12 16

ASPHALT PAVING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section specifies preparation of the project site asphalt paving, including asphalt berm.

B. Related Requirements:

1. Section 01 23 00 ~~WORK OPTIONS~~ **ALTERNATES**.
2. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
3. ~~Section 32 01 17.61 SEALING CRACKS IN ASPHALT PAVEMENT.~~
4. Section 32 16 13 CURBS AND GUTTERS.
5. Section 32 17 23 PAVEMENT MARKINGS.
6. Completely coordinate with work of other trades.

1.2 REFERENCES:

- A. Standard Specifications for Public Works Construction (SSPWC), ~~2015~~ **2018** edition, and supplements for rock materials. The Standard Specifications apply only to performance and materials and how they are to be incorporated into the Work. The legal/contractual relationship, measurement and payment sections of the SSPWC do not apply to this document.
- B. California Department of Transportation Maintenance Technical Advisory Guide (MTAG) Volume I - Flexible Pavement Preservation, Second Edition.

1.3 SUBMITTALS

- A. Product data for materials and products.
- B. Mix Design.
- C. Aggregate Test Report.
- D. Compaction Test Report.

1.4 QUALITY ASSURANCE

- A. Where a particular type of material or method is specified, no other type of material or method will be permitted, except as described in Section 00 26 00, but balance of Specifications shall apply.
- B. Field inspection and testing will be performed under provisions of Section 01 45 23.

1.5 SUSTAINABLE DESIGN REQUIREMENTS

A. Local/Regional Materials:

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available. Submit documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials shall conform to relevant provisions of Section 203 - Bituminous Materials of the SSPWC.
- B. Cement Stabilized Pulverized Base (CSPB) materials shall conform to Section 301-3.4 .2 of the SSPWC.
- C. Asphalt Concrete Pavement shall be a class and grade B-PG 70-10.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify compacted subgrade is dry and ready to support paving and imposed loads.
- B. Verify surface is clean, dry, and within acceptable temperature range.

3.2 ASPHALT CONCRETE PAVEMENT

- A. Perform all placement of asphalt concrete pavement as defined in Section 302-5 of the SSPWC.
- B. Place paving course at least 12 hours after application of primer.
- C. Place paving course to compacted thickness shown.
- D. Compact pavement by rolling. Do not displace or extrude pavement from position. Hand compact in areas inaccessible to rolling equipment.
- E. Roll with consecutive passes to achieve even and smooth finish, without roller marks. Avoid excessive rolling.

3.3 ASPHALT CONCRETE BERM

- A. Apply tack coat to areas receiving asphalt berm.
- B. Install extruded asphalt concrete (rolled bituminous) berm to profile shown.

~~3.4 CHIP SEAL~~

- ~~A. Repair per Section 32 01 17.61 SEALING CRACKS IN ASPHALT PAVEMENT.~~
- ~~B. Perform placement of chip seal as defined in Section 302-2 of the SSPWC.~~
- ~~C. Use a medium type chip seal.~~
- ~~D. Do not permit traffic until chip seal is fully cured.~~

~~3.5 SLURRY SEAL~~

- ~~A. Repair per Section 32 01 17.61 SEALING CRACKS IN ASPHALT PAVEMENT.~~
- ~~B. Remove dirt and organic matter from existing pavement areas to be slurry sealed. Scrape and treat oil stains, pavement markings, and other blemishes to ensure no bleed through.~~
- ~~C. Apply slurry seal per Section 302-4 of the SSPWC.~~
- ~~D. Do not permit traffic until slurry seal is fully cured.~~

3.6 CEMENT STABILIZED PULVERIZED BASE

- A. Construct cement stabilized pulverized base (CSPB) per Section 301-3.4 of the SSPWC.

3.7 TOLERANCES

- A. Flatness: Maximum variation of 1/8 inch measured with 10 foot straight edge.
- B. Compacted Scheduled Thickness: Within 1/4 inch of design thickness.
- C. Variation from True Line and/or Elevation: Within 1/8 inch measured with a 10 foot straight edge.

END OF SECTION

**SECTION 32 16 13
CURBS AND GUTTERS**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section specifies preparation of the project site concrete curbs and gutters.

B. Related Requirements:

1. Section 01 23 00 ~~WORK OPTIONS~~ **ALTERNATES**.
2. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
3. Completely coordinate with work of other trades.

1.2 REFERENCES:

- A. Standard Specifications for Public Works Construction (SSPWC), ~~2015~~ **2018** edition, and supplements for rock materials. The Standard Specifications apply only to performance and materials and how they are to be incorporated into the Work. The legal/contractual relationship, measurement and payment sections of the SSPWC do not apply to this document.

1.3 SUBMITTALS

- A. Concrete curing plan.
- B. Product data for materials and products.
- C. Concrete mix design.
- D. Aggregate test report.

1.4 DELIVERY, STORAGE AND HANDLING

A. Concrete:

Do not deliver concrete until forms, reinforcement, and embedded items are in place and ready for concrete placement.

B. Reinforcement:

Store reinforcement of different sizes and shapes in separate piles or racks raised above the ground to avoid excessive rusting. Protect from contaminants such as grease, oil, and dirt. Ensure bar sizes can be accurately identified after bundles are broken and tags removed.

1.5 QUALITY ASSURANCE

- A. Where a particular type of material or method is specified, no other type of material or method will be permitted, except as described in Section 00 26 00, but balance of Specifications shall apply.
- B. Field inspection and testing will be performed under provisions of Section 01 45 23.
- C. Concrete Curing Plan-Submit proposed materials, methods and duration for curing concrete elements in accordance with ACI 308.1.

D. Pumping Concrete-Submit proposed materials and methods for pumping concrete. Submittal must include mix designs, pumping equipment including type of pump, size and material for pipe, and maximum length and height concrete is to be pumped.

1.6 SUSTAINABLE DESIGN REQUIREMENTS

A. Local/Regional Materials:

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available. Submit documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site.

B. Forest Stewardship Council (FSC) Certification:

Use FSC-certified wood. Provide letter of certification signed by lumber supplier. Indicate compliance with FSC STD 01 001 and identify certifying organization. Submit FSC certification numbers; identify each certified product on a line-item basis. Submit copies of invoices bearing the FSC certification numbers.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Wood Forms:

1. Provide lumber that is square edged or tongue-and-groove boards, free of raised grain, knotholes, or other surface defects. Provide plywood that complies with NIST PS 1, B-B concrete form panels or better or AHA A135.4, hardboard for smooth form lining.

B. Form Ties and Accessories:

1. Provide a form tie system that does not leave mild steel after break-off or removal any closer than 2 inches from the exposed surface. Do not use wire alone. Form ties and accessories must not reduce the effective cover of the reinforcement.

C. Concrete:

1. Concrete conforming to relevant provisions of Section 201 – Concrete, Mortar, and Related Materials of the Standard Specifications for Public Works Construction.
2. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates to Owner for each batch discharged and used in the Work.

D. Steel reinforcement:

1. Reinforcing Bars: ASTM A 615, Grade 60; deformed.
2. Bar Supports: Use dense pre-cast concrete supports with embedded wire ties for reinforcement placed on grade. Elsewhere, use wire bar supports.
3. Tie wire: ASTM A82, Annealed copper-bearing steel, 16 gauge minimum.

E. Fabrication of reinforcing bars:

1. Comply with CRSI Manual of Standard Practice for Reinforced Concrete Construction for fabrication of reinforcing steel.
2. Bending and Forming: Fabricate bars of the indicated sizes and bend and form to required shapes and lengths by methods not injurious to materials. Do not heat reinforcement for bending. Bend bars No. 6 size and larger in the shop only. Bars with unscheduled kinks or bends are subject to rejection. Use only tested and approved bar materials.

F. Bond breaker: Liquid membrane, plastic film or asphalt saturated felt or paper.

G. Liquid curing compound:

1. Comply with ASTM C309 and State Specifications.

PART 3 - EXECUTION

3.1 CURBS AND GUTTERS

A. Perform all curb and gutter construction as defined in Section 303-5 of the SSPWC.

B. Forms:

1. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for pavement. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
2. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

C. Steel reinforcement

1. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.
2. Before placing bars, and again before concrete is placed, clean bars of loose mill scale, oil, or any other coating that might destroy or reduce bond.
3. Clearances: Maintain minimum clear distances between reinforcing bars and face of concrete as indicated or directed.
4. Splices: Do not splice reinforcing bars at the points of maximum stress except where indicated. Lap splices as shown or required to develop the full strength or stress of bars. Stagger splices in horizontal wall bars at least 48" longitudinally in alternate bars and opposite faces.
5. Maintaining Bars In Position: Take adequate precautions to assure that reinforcing position and spacing is maintained during placement of concrete.

D. Concrete color: All curbs and gutters shall be GRAY colored.

E. On properly compacted sub-grade, place concrete per plan.

1. Screed to avoid material segregation using mechanical methods. Manual methods may be used in small areas.
2. Cold Weather:
Do not allow concrete temperature to decrease below 50 degrees F. Obtain approval prior to placing concrete when the ambient temperature is below 40 degrees F or when concrete is likely to be subjected to freezing temperatures within 24 hours. Cover concrete and provide sufficient heat to maintain 50 degrees F minimum adjacent to both the formwork and the structure while curing. Limit the rate of cooling to 37 degrees F in any 1 hour and 50 degrees F per 24 hours after heat application.
3. Hot Weather:
Maintain required concrete temperature using Figure 4.2 in ACI 305R to prevent the evaporation rate from exceeding 0.2 pound of water per square foot of exposed concrete per hour. Cool ingredients before mixing or use other suitable means to control concrete

temperature and prevent rapid drying of newly placed concrete. Shade the fresh concrete as soon as possible after placing. Start curing when the surface of the fresh concrete is sufficiently hard to permit curing without damage. Provide water hoses, pipes, spraying equipment, and water hauling equipment, where job site is remote to water source, to maintain a moist concrete surface throughout the curing period. Provide burlap cover or other suitable, permeable material with fog spray or continuous wetting of the concrete when weather conditions prevent the use of either liquid membrane curing compound or impervious sheets. For vertical surfaces, protect forms from direct sunlight and add water to top of structure once concrete is set.

4. Hand finish as necessary, non-directional and uniform.

F. Weakened Plane Joints:

1. Construct per Section 303-5.4.3 of the SSPWC.
2. Plastic control joint not allowed.
3. Provide for weakened plane joints at end of each day's work at and whenever necessary to suspend work.

G. Curing:

1. Curbs and gutters to be cured per Section 303-5.6 of the SSPWC.

H. Correct surface deviations by removing and replacing the non-complying sections; or by grinding as approved by Engineer.

3.2 REPAIRS AND PROTECTION

- A. Remove and replace concrete curbs and gutters that are broken, damaged, or defective or that do not comply with requirements in this Section.
- B. Protect concrete from damage. Exclude traffic from pavement for at least 14 days after placement.
- C. Maintain concrete pavement free of stains, discoloration, dirt, and other foreign material. Sweep concrete pavement not more than two days before date scheduled for Substantial Completion inspections.

END OF SECTION

**SECTION 32 17 23
PAVEMENT MARKINGS**

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. This section specifies application of pavement markings.

B. Related Requirements:

1. Section 01 23 00 ~~WORK OPTIONS~~ **ALTERNATES**.
2. Section 01 74 19 CONSTRUCTION WASTE MANAGEMENT.
3. Section 32 12 16 ASPHALT PAVING.
4. Completely coordinate with work of other trades.

1.2 REFERENCES:

A. Standard Specifications for Public Works Construction (SSPWC), ~~2015~~ **2018** edition, and supplements for rock materials. The Standard Specifications apply only to performance and materials and how they are to be incorporated into the Work. The legal/contractual relationship, measurement and payment sections of the SSPWC do not apply to this document.

1.3 SUBMITTALS

A. Product Data for materials and products.

1.4 QUALITY ASSURANCE

A. Where a particular type of material or method is specified, no other type of material or method will be permitted, except as described in Section 00 26 00, but balance of Specifications shall apply.

B. Field inspection and testing will be performed under provisions of Section 01 45 23.

1.5 SUSTAINABLE DESIGN REQUIREMENTS

A. Local/Regional Materials:

Use materials or products extracted, harvested, or recovered, as well as manufactured, within a 500 mile radius from the project site, if available. Submit documentation indicating distance between manufacturing facility and the project site. Indicate distance of raw material origin from the project site.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Conform to Section 214-4 of the SSPWC.

B. Pavement Markings:

Color Schedule - Paving Paint

Item	Color	Reflective / Non-Reflective
Striping	White	Non-Reflective
Traffic Arrows	White	Non-Reflective
Pavement Lettering	White	Non-Reflective
Accessible Symbols	Blue	Non-Reflective
Fire Lanes	Red	Non-Reflective
Paint-out of existing items	Black	Non-Reflective

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify surface is clean, dry, and within acceptable temperature range.

3.2 PAVEMENT MARKING

- A. Apply pavement markings per Section 314 of the SSPWC.
- B. Apply paint at rate recommended by manufacturer.
- C. Protect from damage until dry.

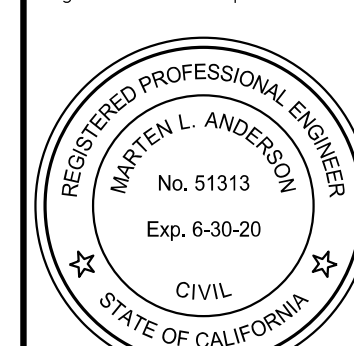
END OF SECTION

Engineer's Data:



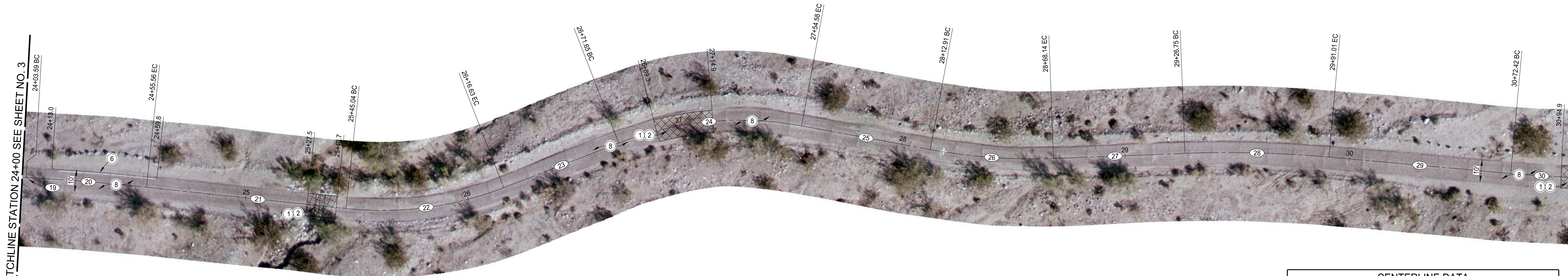
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Consultant's Stamp:

UC, RIVERSIDE PROJECT NUMBER 950515
BOYD DEEP CANYON DESERT RESEARCH CENTER
ACCESS ROAD REPAIR PLAN



MATCHLINE STATION 24+00 SEE SHEET NO. 3

MATCHLINE STATION 31+00 SEE BELOW LEFT

CENTERLINE DATA				
NO.	DELTA OR BRG.	RADIUS	LENGTH	TANGENT
19	N22°19'09"E		3.59'	
20	2°58'38"	1000.00'	51.96'	25.99'
21	N25°17'47"E		89.49'	
22	27°20'37"	150.00'	71.59'	36.49'
23	N2°02'50"W		55.02'	
24	31°40'41"	150.00'	82.93'	42.56'
25	N29°37'51"E		58.33'	
26	12°39'28"	250.00'	55.23'	27.73'
27	N16°58'23"E		58.61'	
28	7°21'47"	500.00'	64.25'	32.17'
29	N24°20'10"E		81.41'	
30	3°09'39"	500.00'	27.58'	13.80'
31	11°33'58"	500.00'	100.93'	50.64'
32	N9°36'32"E		22.01'	
33	5°21'59"	175.00'	16.39'	8.20'
34	N14°58'31"E		48.99'	
35	26°02'58"	175.00'	79.56'	40.48'
36	N11°04'28"W		24.20'	
37	22°49'04"	125.00'	49.78'	25.22'
38	N33°53'32"W		51.15'	
39	29°20'49"	200.00'	102.44'	52.37'
40	N4°32'44"W		21.17'	
41	10°48'45"	300.00'	56.61'	28.39'
42	N6°16'01"E		52.58'	
43	5°52'58"	200.00'	20.53'	10.28'
44	N12°08'59"E		19.56'	
45	5°09'30"	300.00'	27.01'	13.51'
46	N6°59'29"E		7.07'	

NOTES TO CONTRACTOR

- THE LIMITS OF CONSTRUCTION SITE DISTURBANCE SHALL BE THE EXISTING ACCESS ROAD PAVEMENT LIMITS, PLUS A MAXIMUM OF TWO FEET BEYOND THE EXISTING EDGE OF PAVEMENT ON BOTH SIDES OF THE ROAD EXCEPT IN AREAS WITH LONG-LIVED PERENNIAL PLANTS (EXISTING CACTUS AND CREOSOTE BUSH) THAT CANNOT BE RELOCATED.
- ALL VEHICLES AND EQUIPMENT WILL USE THE EXISTING DESIGNATED TURNOUTS FOR PARKING AND PASSING AND AT NO TIME SHALL THEY BE PERMITTED TO DRIVE OR PARK OUTSIDE THE EXISTING ACCESS ROAD PAVEMENT LIMITS OR TURNOUTS.
- CONTRACTOR STAGING AND TURN AROUND AREAS WILL BE DELINEATED BY BOYD DEEP CANYON DESERT RESEARCH CENTER STAFF AFTER CONSULTATION WITH THE CONTRACTOR AND PRIOR TO THE START OF CONSTRUCTION.
- THE NOMINAL ROAD WIDTH VARIES FROM 10' ON THE ACCESS ROAD TO 14' ON DRIVEWAYS TO THE RESIDENCE AND MAYHEW BUILDINGS. THESE NOMINAL WIDTHS ARE TO BE ADHERED TO IN THE ROAD RENOVATION.
- BIDDERS WILL CONTACT BOYD DEEP CANYON DESERT RESEARCH CENTER STAFF TO ARRANGE ACCESS TO THE FACILITY AND CLEARANCE THROUGH SECURITY AT "THE RESERVE," A PRIVATE COMMUNITY NORTH OF THE BOYD DEEP CANYON DESERT RESEARCH CENTER.

BASE BID CONSTRUCTION NOTES

- SAWCUT AND REMOVE EXISTING AC PAVEMENT
- PLACE 4" AC PAVEMENT ON COMPACTED NATIVE

ALTERNATE 1 CONSTRUCTION NOTES

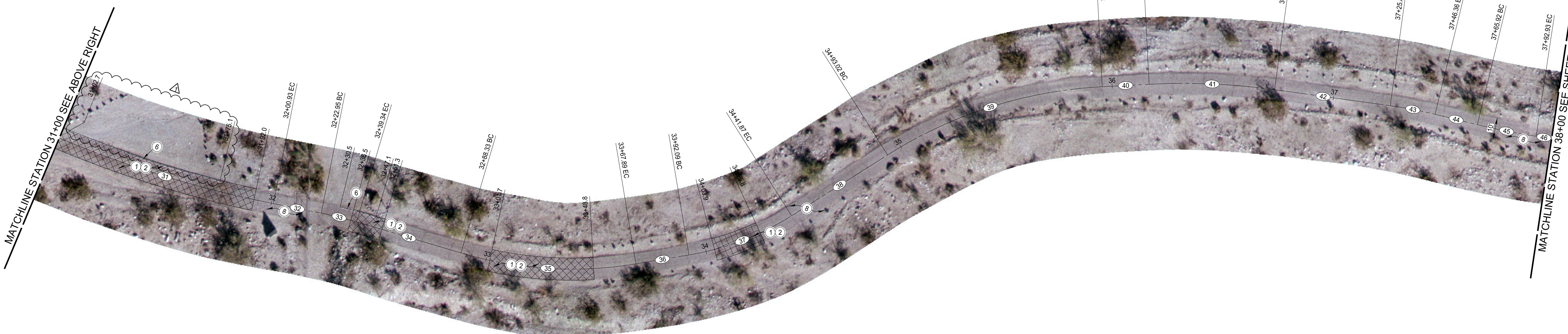
- CONSTRUCT RIBBON GUTTER PER DETAIL 1 ON SHEET 2
- CONSTRUCT AC BERM PER DETAIL 2 ON SHEET 2
- GRADE AREA TO DRAIN TO RIBBON GUTTER
- APPLY 4" WHITE STRIPE

ALTERNATE 2 CONSTRUCTION NOTES

- CONSTRUCT CONCRETE CROSSING PER DETAIL 3 ON SHEET 2

ALTERNATE 3 CONSTRUCTION NOTES

- PULVERIZE AND COMPACT EXISTING AC PAVEMENT



MATCHLINE STATION 31+00 SEE ABOVE RIGHT

MATCHLINE STATION 38+00 SEE SHEET NO. 5

CAUTION:

EXACT LOCATION OF EXISTING UNDERGROUND FACILITIES IS UNKNOWN. CONTRACTOR TO VERIFY IN FIELD PRIOR TO START OF CONSTRUCTION.



Know what's below.
Call before you dig.

Call at least 2 working days prior to excavating.

SCALE: 1" = 20'

REVISIONS		
REV #	DESCRIPTION	DATE
BID SET		MAY, 2020
ADDENDUM 2		JUN 1, 2020

Consultant's Data:

UCR Project Manager:
ROWAN REID

Scale: 1" = 20'	SD Approval:
Drawn By: MLA	DD Approval:
Checked By: MLA	CD Approval:
Project No.: 950515	Construction Release:
DSA No.:	

Drawing Title: **WORK OPTION 1 CONSTRUCTION SHEET** Sheet No. **4**