

PART 3 - EXECUTION

3.01 GENERAL:

- A. All demolition and clearing and grubbing of objectionable materials must be completed to the satisfaction of the Soils Engineer before starting earthwork grading and excavation.
- B. Survey:
Contractor shall provide all survey services necessary for horizontal and vertical control points, layouts, lines and levels, staking of work.

Any corrections to the grading work required to obtain proper drainage and to bring it into conformance with the intent of the plans and specifications and DISTRICT codes shall be performed by Contractor at no additional cost to the DISTRICT.
- C. Contractor shall check all existing grades prior to initiating grading work as necessary to verify that the project can be graded as proposed. Any discrepancies found should immediately be brought to the attention of the DISTRICT in writing.

3.02 ROUGH GRADING:

- A. Rough grading of the site shall be in accordance with indicated contours, elevations, and limit lines shown on the plans and shall be sufficient to allow for the depths of slabs, paving, sub-base, topsoil, and compacted fills. Tolerance for rough grading is 1/10th of a foot. In all areas, appearance and positive drainage will be governing factors in acceptability of grades.
- B. Graded material shall not be left in loose layers, but shall be stockpiled for use as compacted fill or compacted in thin layers as grading takes place in accordance with the requirements for compacted fill.
- C. Scarification to a minimum depth of six (6) inches or to a depth permitting twelve (12) inches of controlled compacted fill shall be performed on all areas indicated to receive paving.
- D. The Soils Engineer shall inspect all scarified surfaces prior to placement of compacted fill.

3.03 CONTROLLED FILL:

- A. Fill material shall be spread in uniform lifts of six (6) to eight (8) inches of uncompacted thickness.
- B. Prior to starting compaction, the fill material shall be brought to optimum moisture content by spraying with water if too dry, and aeration if too wet.
- C. Thoroughly mix each lift to assure uniform distribution of water content.

- D. Bring fills to suitable elevations above required grades to provide for effects of shrinkage and settlement.
- E. For all areas designated to receive slabs and pavement and within a perimeter five (5) feet outside these areas, each lift shall be compacted to a minimum of 90% of maximum density as determined by ASTM D1557-70.
- F. Where fill is required in planting areas each lift shall be compacted to a minimum of 85% maximum density.
- G. Perform all compaction by suitable mechanical equipment and methods approved by the Soils Engineer.
- H. Inspection and field tests shall be carried on during grading by the Soils Engineer to assist the Contractor in obtaining the required degree of compaction and the proper moisture content. Where compaction of less than 90% is indicated, additional compactive effort shall be made with adjustment of the moisture content as necessary until a minimum of 90% compaction is obtained.
- I. The material in any soft or spongy spots shall be removed to such depth as directed by the Soils Engineer and replaced with suitable material, properly compacted.
- J. Sub-grades to receive slabs and pavements shall be finished to a tolerance of plus or minus one-half (1/2) inch.

3.04 FINE GRADING:

Finish grades shall slope to drain without water pockets or irregularities and shall conform to the intent of all plans and specifications after thorough settlement and compaction of the soil. Finish grades shall meet all existing or established controls of sidewalks and curbs, and shall be of uniform slope and grade between points of fixed elevations or elevation controls and from such points to established grades. Tolerance for finish grading is 1/4 inch, plus or minus.

Any corrections to the grading work required to obtain proper drainage and to bring it into conformance with the intent of the plans and specifications and County codes shall be performed by Contractor at no additional cost to the DISTRICT.

3.05 EXCAVATION:

The Contractor shall make all necessary excavation for footings and slabs and to any additional excavation necessary to provide ample room for installation of concrete forms where required.

Footings may be poured against undisturbed soil if Soils Engineer approves.

Bottom of excavations shall be level, free from loose material and brought to the indicated or required grades in undisturbed earth. All excavations shall be kept free from standing water. The Contractor shall do all pumping or draining that may be necessary in carrying on the work. Should excavations for footings, through error, be excavated to a greater depth of size than indicated or required, such additional depth or size shall be filled with concrete, at the Contractor's expense.

3.06 BACKFILLING:

Select site material shall be used for backfill of trenches and shall be free from large stones and clods. Material shall be as approved by the Soils Engineer.

Backfill shall be deposited in layers of maximum six inch thickness.

Layers of backfill shall be moistened with water, the amount to be rigidly controlled to insure optimum moisture conditions for the type of fill material used. Excess water causing saturated earth beneath footings, walks, and curbs will not be permitted.

Backfill shall be compacted by suitable means to a minimum 90%.

All trenches shall be backfilled in accordance with this section, and may be tested at the discretion of the Engineer.

3.07 DUST AND NOISE ABATEMENT:

During the entire period of construction, site areas shall be kept sprinkled as necessary to reduce dust in the air and annoyance to surrounding properties. Adhere to the requirements of County ordinances for dust and noise control.

END OF SECTION

SECTION 02221 - DECOMPOSED GRANITE

PART 1 - GENERAL

1.01 SCOPE OF WORK:

- A. Subgrade preparation
- B. Furnishing and installing decomposed granite and stabilizer

1.02 APPROVALS:

- A. Submit 10 pound sample of decomposed granite for approval prior to ordering delivery. Attach supplier's certification of testing.
- B. Subgrade shall be approved prior to placing.

PART 2 - MATERIALS

2.01 DECOMPOSED GRANITE:

- A. Decomposed granite shall be an imported blend of 1/4" minus crushed granite and clay, pre-mixed prior to delivery:

<u>% Passing</u>	<u>Screen Size</u>
100	3/8"
98	No. 4
77	No. 8
58	No. 16
45	No. 30
32	No. 50
22	No. 100
14.6	No. 200

2.02 SOIL STABILIZER:

Suitable material: 'Soil Secure,' available from Southwest Boulder & Stone, (877)792-7625

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION:

- A. Rough grade to 3 inch depth below finish grade. Subgrade shall be smooth and shall follow the drainage planes as shown on the drawings.

3.02 PRE-EMERGENT WEED CONTROL:

Contractor to apply product with a properly calibrated spreader which will assure accurate, even particle distribution at a rate of 4.6 lbs./1,000 Sq. Ft or as specified by product manufacturer.

3.03 TOPPING COURSE:

- A. Scarify subgrade to one inch depth. Thoroughly moisten surface without flooding.
- B. Provide pre-mixed stabilized decomposed granite. Pre-mixed should be done off-site. Material shall arrive pre-mixed ready for installation. Proper mixing is a must for a successful application.
- C. Spread topping material in one 2 inch layer. Level the topping course to smooth plane surface. Scarify, re-grade, and re-compact areas not conforming to finish grades as shown on the drawings.
- D. Apply water until moisture penetrates to full depth of the Soil Secure. Water activates Stabilizer so it is **essential** that the **full depth** of the material receives water at this time.
- E. Upon thorough moisture penetration, compact the stabilized decomposed granite. Compaction can be done with small riding roller, power walk-behind roller, sod roller, vibrating plat tamp or similar.
- F. Allow finished surface enough time to dry completely. Set-up time varies, depending upon weather conditions.

3.04 WEED CONTROL:

Contractor is responsible for eradicating weeds from the decomposed granite surface.

END OF SECTION

SECTION 02230 – SUBGRADE PREPARATION

PART 1 - GENERAL

1.01 GENERAL CONDITIONS

Requirements of the Contract Documents, including but not limited to, the General, Special, and Technical Provisions, apply to work in this Section with the same force and effect as though repeated in full herein.

1.02 SCOPE OF WORK

Furnish materials, labor, transportation, services, and equipment necessary to perform all sub-grade preparation work for the park as indicated on the Drawings complete as shown and as specified herein.

Related Work:

Earthwork	Section 02310
Concrete Formwork	Section 03110
Concrete Reinforcement	Section 03210
Cast-In-Place Concrete	Section 03310

1.03 REFERENCES

Comply with the applicable reference specifications as specified in the GENERAL PROVISIONS and in accordance with applicable laws, codes and regulations required by the County of Riverside.

Comply with the current provisions of the following Codes and Standards:

ASTM - American Society for Testing and Materials.
Standard Specifications
Uniform Building Code

PART 2 - MATERIALS

2.01 SUITABLE MATERIALS

General: Fill, backfill, and embankment materials shall be suitable selected or processed clean, fine earth, rock, or sand, and free from grass, roots, brush, or other vegetation; contamination; or deleterious material. The size, gradation, and properties of the materials shall be in accordance with the requirements of the Soil Report and these specifications.

Aggregate base materials under pavements shall be crushed aggregate base material constructed to the thickness shown or specified. The percentage composition by weight of aggregate base shall conform to the Standard Specifications.

PART 3 - EXECUTION

3.01 SUBGRADE PREPARATION

Excavate and shape subgrade to line, grade, and cross-section shown on the Drawings.

Subgrade is that area on which pavement, surfacing, base, sub-base, or a layer of other material which may be specified, is to be placed.

Plow or scarify subgrade to a depth of 6" below the final subgrade elevation; and by harrowing, dry rolling and breaking clods, the earth shall be brought to finely divided condition. Remove boulders, hardened material, or rock encountered. The earth shall be uniform for the full depth and width of the subgrade.

Water loose earth to a uniform depth of 4".

Harrow the earth to mix the wet earth with the dry beneath, until the whole mass of loose material is at the proper state of moisture for compaction.

The finished subgrade, immediately prior to placing subsequent material thereon, shall be in accordance with the Standard Specifications and project soils report.

The finished surface of the subgrade, at any point, shall not vary more than 0.05' above or 0.2' below the elevation indicated on the drawings unless approved in writing by Owner's Representative.

The Owner will not provide any additional compensation to the Contractor for hard rock or caliches excavation. Refer to the project soils report for test boring information and analysis.

3.02 BASE

Base shall be readily compacted and spread with equipment that will provide a uniform layer conforming to the planned section.

3.03 CLEANUP

Upon completion of the subgrade preparation and base, remove surplus construction materials, earth and debris so that the job site is left in a neat and orderly condition.

END OF SECTION 02230

SECTION 02445 - TEMPORARY CHAIN LINK FENCING1.01 TEMPORARY FENCING:

Install a 6' tall (min.) temporary construction fence prior to beginning any site work, at the perimeter of active work. The fence shall be chain link (new or used), free of openings or breaks in the fabric, with fence posts at 10' O/C maximum. Fencing shall incorporate green "tennis court" windscreen material, securely fastened to top and bottom of chain link fabric, for the entire secured perimeter of the fence line. The fence shall be maintained in place throughout the construction phase period through to the end of the ninety (90) day landscape maintenance period. Install "No Trespassing" signs minimum 150' o.c., with wording presented in both English and Spanish. The temporary fence shall be removed prior to final inspection/project acceptance at the end of the maintenance period.

END OF SECTION 02445

SECTION 02470 - SITE FURNISHINGS**PART 1 - GENERAL**1.01 RELATED DOCUMENTS:

The provisions of *The "Greenbook" Standard Specifications for Public Works Construction* shall also apply to this section.

1.02 SCOPE OF WORK:

The work included in this section generally consists of providing all labor, equipment and materials necessary to install all site furnishings complete as shown on the plans and as described herein.

1.03 SUBMITTALS:

- A. Contractor shall submit a written work schedule and cost breakdown for the various elements of the work at the preconstruction conference. Contractor shall also submit a complete list of materials along with manufacturers catalog data for all materials proposed for use in the work as a substitute for those specified herein.
- B. Manufacturer's Product Data: Submit six (6) copies of manufacturer's literature for each item of site furnishings.
- C. Submit suppliers certificates attesting that the materials furnished will meet specifications.

1.04 DELIVERY, STORAGE AND HANDLING:

Contractor assumes all responsibility for storage of all materials relative to this project. DISTRICT assumes no liability for losses or damages from any cause as a result of such storage.

1.05 JOB CONDITIONS - PROTECTION:

After slabs are poured and site furnishings are installed, all damage to surrounding irrigation system shall be repaired by the contractor at the contractor's expense. All trees and shrubs in and around the project site shall be protected by the contractor and, if damaged, replaced at the contractor's expense. This provision is in effect until acceptance by the DISTRICT of the complete project.

1.06 LOCATION INSPECTION:

No equipment, apparatus or foundations for same shall be placed until location stakes have been inspected and accepted by the PA.

1.07 GUARANTEE & LIABILITY INSURANCES:

- A. Manufacturer shall guarantee all materials and workmanship for a period of one (1) year exclusive of vandalism. Manufacturer will be required to provide product liability insurance coverage in the minimum amounts of \$1,000,000.00 per incident.

The manufacturer will be required to provide complete installation drawings including specifications and a replacement parts list for all products.

- B. Contractor shall provide a written guarantee on his firm's letterhead for all materials and workmanship for a period of one (1) year exclusive of vandalism. Written guarantee shall be submitted to the DISTRICT at the final inspection prior to final acceptance of the work.

PART 2 - PRODUCTS

2.01 DRINKING FOUNTAIN:

Shall model #10145-SM available from Most Dependable Fountains, (800)552-6331.

2.02 MESSAGE BOARD (ADDITIVE ALTERNATE):

Shall be 84"x44" Outdoor Message Board model #SCBB234 available from Displays 4 Sale (800)289-1539.

PART 3 - EXECUTION

3.01 LAYOUT:

Contractor shall stake/mark locations for all slabs and foundations and shall obtain the approval of their location from DISTRICT representative prior to commencing any digging. Locations shall be adjusted to provide minimum clear distances required from all edges of slabs, trees, irrigation heads, or other obstructions.

3.02 FURNITURE INSTALLATION:

- A. All site furnishings shall be installed with vandal-proof hardware or made vandal-proof (deforming or peening).
- B. Block outs for "after slab installation" will not be allowed.

3.03 CLEAN-UP:

Contractor shall clean up and legally dispose of all unused materials, excess soil, and debris at regular intervals throughout the duration of the work, and as directed by the DISTRICT representative.

3.04 PROTECTION OF EXISTING IMPROVEMENTS:

Contractor shall protect all existing improvements from damage.

END OF SECTION

SECTION 03010 - CONCRETE

PART 1 - GENERAL

1.01 QUALITY ASSURANCE:

- A. Codes and Standards: Comply with the provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:
1. ACI 301 "Specifications for Structural Concrete for Building."
 2. ACI 318 "Building Code Requirements for Reinforced Concrete."
 3. ACI 347 "Recommended Practice for Concrete Formwork."
 4. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete."
 5. Concrete Reinforcing Steel Institute, "Manual of Standard Practice."
 6. California Building Code (CBC), 2013 Edition.
- B. Testing: Owner's testing laboratory will perform sampling and testing during concrete placement, which may include the following, as directed by the PA. Comply with LABC Section 91.2604.3.
1. Sampling: ASTM C 172.
 2. Slump: ASTM C 173, one test for each load at point of discharge.
 3. Air Content: ASTM C 173, one for each set of compressive strength specimens.
 4. Compressive Strength: ASTM C 39, one set for each 50 cu. yds. of each grade of structural concrete; and at least one test for each day's concreting for each grade of concrete used, two specimens tested at 28 days.

1.02 SUBMITTALS:

- A. Comply with pertinent provisions of Section 01300.
- B. For all concrete, a signed copy of batch plant's certificate stating the quantity of each material, amount of water, admixtures, departure time and date shall accompany each load of materials or concrete.

- C. Submit test results as required by the DISTRICT.
- D. Product Data: Submit manufacturer's product data with installation instructions for proprietary materials including reinforcement and forming accessories, admixture, joint materials, hardeners, curing materials and others as requested by the PA.
- E. Laboratory Reports: Submit laboratory test or evaluation reports for concrete materials and mix designs as required by the DISTRICT.

PART 2 - PRODUCTS

2.01 FORM MATERIALS:

- A. Unless otherwise indicated, construct formwork for exposed concrete surfaces with 2x lumber or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form materials with sufficient thickness to withstand pressure of newly-placed concrete without bow or deflection.

2.02 CONCRETE MATERIALS:

- A. Portland Cement: ASTM C 150, type I or type II.
- B. Aggregates: ASTM C 33, except local aggregates of proven durability may be used when acceptable to the PA. Provide aggregates from a single source for exposed concrete.
- C. Water: Potable.

2.03 CONCRETE ADMIXTURES:

- A. General: Provide admixtures produced by established reputable manufacturers and use in compliance with the manufacturer's printed directions. Do not use admixtures which have not been incorporated and tested in accepted mixes, unless otherwise authorized in writing by the PA.
- B. The following admixtures may be used with written approval of the PA. Conform to manufacturer's recommendations for use.
 - 1. Water Reducing: ASTM C 494. Shall provide a minimum of 5% water reduction, 10% increase of 28 day compressive strength, drying shrinkage at 21 days shall be less than concrete without admixture.
 - 2. Acceleration or Retarding: ASTM C 494.

- C. Waterproofing Admixture: SIKA CHEMICAL CORPORATION "Sika Red Label" (Sikamix 198).
- D. Calcium chloride not permitted.

2.04 JOINT MATERIALS:

- A. Keyed Metal Joint: BURKE CONCRETE ACCESSORIES "Keyed Kold" 24 gauge galvanized steel joint form with steel "Keyed Kold" stakes.
- B. Fiber Joint Filler: ASTM D 1751 non-extruding premolded bituminous impregnated fiberboard units. Plain or punched for dowels as required.
- C. Plastic Joint Insert: "Quickjoint" T-shaped 1/16" plastic strip, 1 inch minimum depth as distributed by J.A. CRAWFORD CO., phone (213) 698-0901.

2.05 VAPOR BARRIER:

- A. Provide vapor barrier cover over prepared base material where shown on drawings. Use only materials which are resistant to decay when tested in accordance with ASTM D 154, as follows:
 - 1. Provide polyethylene sheet not less than 10 mils thick.

2.06 FINISH MATERIALS:

- A. Sealer: A.C. HORN "Horntraz."

2.07 CURING MATERIALS:

- A. Liquid Curing Compound: ASTM C 309, type 1 non-staining, approved standard product resin type.
 - 1. Gray Cement: Free of wax or oil, compatible with subsequently applied finishes or coverings, delivered in unopened labeled containers.
- B. Concrete Curing Paper: ASTM C 171, non-staining reinforced type.

2.08 PATCHING MATERIAL:

- A. Bonding Agent: LARSON PRODUCTS "Weldcrete," W.R. GRACE "Daraweld" or SONNEBORN-CONTECH "Soncrete."

- B. Patching Mortar: Latex modified Portland Cement mortar. Provide CUSTOM BUILDING PRODUCTS "Fix-a-crete."

2.09 PROPORTIONING:

- A. Proportioning shall be by weight of loose, dry material, 94 pounds of cement shall be considered 1 cubic foot. Fine aggregate volume shall be at least 35% of the sum of the separate fine and coarse aggregate volumes.

Weighing equipment shall be accurate to within 1 pound and be adjustable for varying aggregate moisture content. A beam auxiliary shall register any part of the last 100 pounds of each aggregate. The aggregate hopper shall have a volume adjustment.

- B. Accurately control the proportions, water content, and air content.
- C. Waterproofing Admixture: Add to all concrete used for exposed roof slabs, slabs on grade and walls against grade. Add in accordance with manufacturer's instructions.
- D. Admixture (other than waterproofing and integral color): If admixture is used, conform to type specified. Quantity per sack of cement and method of using admixture shall be in accordance with recommendations of manufacturer and laboratory furnishing mix design.
- E. Non-shrink Grout: Pre-proportioned, or job mixed. For job-mix: one part, by weight, metallic aggregate mix; one part Portland cement; one part fine aggregate; and enough water for flowable consistency.
- F. Cement Grout: One part by volume Portland cement and 2 1/2 parts fine aggregate. Mix dry. Add just enough water to make mixture flow under its own weight.
- G. Dry Pack: One part by volume Portland cement and 2 1/2 parts fine aggregate, mixed dry. Add just enough water to dampen mix to a cohesive packing or tamping consistency.
- H. Patching Mortar: Mix liquid. Combine dry mix with liquid and add water in proportions recommended by manufacturer.

2.10 MIX DESIGN:

- A. Prepare design mixes for each type and strength of concrete indicated on plans.
 - 1. Proportions: For each material including admixtures and water, state water-cement ratio and maximum allowable water content, using not less than the

minimum cement content required in paragraphs "proportioning."

2. Materials: Manufacturer's name, designation and source of each material.
3. Aggregate: Conform to LABC Section 91.2603.3.
4. Modified Mix: Same as other concrete types except remove 50% of the coarse aggregate.

2.11 CONCRETE TYPES:

- A. Refer to structural drawings for specific uses and locations.
- B. Specified strengths measured at 28 days.
 1. Standard Weight Concrete: 2500 psi. minimum unless otherwise specified.

2.12 MIXING CONCRETE:

- A. Ready-Mixed Concrete: Concrete shall be supplied by an established commercial ready-mix plant conforming to ASTM C 94.
 1. Truck Mixers: Minimum 2 cu. yd. capacity, equipped with accurate revolution counter. Operate at rated speed. Discontinue use of mixers producing unsatisfactory concrete or showing more than 10% difference in sand-cement or water-cement ratios in samples taken from front, center and back of mixer.
 2. Mixing Time: Total at least 15 minutes, with at least 5 minutes immediately after addition of water, and at least 10 minutes just before discharging.
 3. Mixing Water: Withhold 2 1/2 gallons per cubic yard from predetermined water content. All or part thereof may be added at site, as directed.
- B. Re-tempered Concrete: Concrete not placed within 90 minutes after water is introduced into mix or which has stood for 30 minutes after leaving mixer shall not be used.

PART 3 - EXECUTION

3.01 FORMS:

- A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads

CONSTRUCTION IMPROVEMENTS TO SANTA ROSA PLATEAU ECOLOGICAL PRESERVE: ACCESSIBILITY(ADA)
IMPROVEMENTS

4600 CRESTMORE ROAD, JURUPA VALLEY, CA 92509
RIVERSIDE COUNTY REGIONAL PARK AND OPEN-SPACE DISTRICT
COMMUNITY WORKS DESIGN GROUP

that might be applied until such loads can be supported by concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position. Comply with ACI 347.

- B. Design and fabricate formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.
- C. Provide temporary opening where interior area of formwork is inaccessible for cleanout, for inspection before concrete placement and for placement of concrete.
- D. Chamfer exposed corners and edges as indicated, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- E. Form Ties: Factory fabricated, adjustable length, removable or snap-off metal form ties, designed to prevent form deflection, and to prevent spalling concrete surfaces upon removal.
- F. Provide openings in formwork to accommodate work of other trades. Accurately place and securely support items build into forms.

3.02 VAPOR BARRIER:

- A. Place interior slabs on grade over vapor barrier consisting of 2 inch bed of washed natural sand over vapor barrier sheet. Turn up edges of vapor barrier 2 inches. Lap edges 6". Tape and seal all edge laps and penetrations. Roll sub-grade smooth prior to placing vapor barrier.
 - 1. Omit stakes at metal joints occurring over vapor barrier. Use screed pads to hold screed posts. Do not pierce vapor barrier.
 - 2. Do not disturb or damage vapor barrier while placing metal formed joints and concrete reinforcing. If damage does occur, repair areas before placing concrete. Use vapor barrier material, lapped over damaged areas minimum 6" in all directions and seal.

3.05 JOINTS:

- A. Provide construction, isolation, and control joints as indicated or required. Locate construction joints so as to not impair the strength and appearance of the structure. Place isolation and control joints in a slabs-on-ground to stabilize differential settlement and random cracking.
- B. Metal Formed Joint: "Key-Kold" type metal joint form. Set top of stakes 3/8" below slab surface elevation, spaced at 2'-0" o.c.. When concrete is not poured continuously

over both sides of joint, the knockout anchors shall be bent at 45 degree angle into the pour. Finish the concrete to the top of the joint and burn in with hand trowel.

3.06 INSTALLATION OF EMBEDDED ITEMS:

- A. Set and build into the work anchorage devices and other embedded items required for other work that is attached to, or supported by cast-in-place concrete. Use setting diagrams, templates and instruction provided by others for locating and setting.

3.07 CONCRETE PLACEMENT:

- A. Pre-placement Inspection: Before placing concrete, inspect and complete formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit installation of their work; cooperate with other trades in setting such work. Moisten wood forms immediately before placing concrete where form coatings are not used.
- B. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.
- C. Comply with ACI 304, placing concrete in a continuous operation within planned joints or sections. Do not begin placement until work of other trades affecting concrete is completed.
- D. Consolidate placed concrete using mechanical vibrating equipment with hand rodding and tamping, so that concrete is worked around reinforcement and other embedded items and into all part of forms.
- E. Maintain reinforcing in proper position during concrete placement operations.
- F. Tolerances: Variations in finish surfaces shall not exceed 1/8 inch in any direction along a 10 foot straightedge.
- G. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.
 - 1. In cold weather comply with ACI 306.
 - 2. In hot weather comply with ACI 305.

3.08 FINISH OF FORMED SURFACES:

- A. Rough Form Finish: For formed concrete surfaces not exposed-to-view in the finish work, unless otherwise indicated. This is the concrete surface having texture imparted

by form facing material used, with tie holes and defective areas repaired and patched and fins and other projections exceeding 1/4" in height rubbed down or chipped off.

- B. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to concrete, or a covering material applied directly to concrete, such as waterproofing, damp-proofing, painting or other similar system. This is as-cast concrete surface obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with fins or other projections completely removed and smoothed.

3.09 SLAB FINISH:

- A. Non-Slip Top Cast Finish: Apply non-slip top cast finish to exterior concrete paving.
 - 1. Immediately after trowel finishing, slightly roughen concrete surface by brooming with hair bristle broom perpendicular to main traffic route. Coordinate required final finish with the PA before application.
- B. Sealer: Apply to scheduled areas in accordance with manufacturer's printed instructions.

3.10 CONCRETE CURING:

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
 - 1. Start initial curing as soon as free water has disappeared from concrete surface after placing and finishing. Weather permitting, keep continuously moist for not less than 7 days.
 - 2. Begin final curing procedures immediately following initial curing and before concrete has dried. Continue final curing for at least 7 days in accordance with ACI 301 procedures. Avoid rapid drying at end of final curing period.
- B. Curing Methods: Perform curing of concrete by moist curing, by moisture retaining cover curing, by curing compound, and by combination thereof, as herein specified.
- C. Do not use membrane curing compounds on surfaces which are to be covered with coating material applied directly to concrete, liquid floor hardener, waterproofing, damp-proofing, membrane roofing, flooring, painting, and other coatings and finish materials, unless otherwise acceptable to the PA.
- C. Curing Formed Surfaces: Cure formed concrete surfaces, including undersides of beams, supported slabs and other similar surface by moist curing with forms in place for

full curing period or until forms are removed. If forms are removed, continue curing by methods specified above, as applicable.

- E. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of appropriate curing compound.

3.11 REMOVAL OF FORMS:

- A. Time: Remove forms after concrete has developed sufficient strength to sustain its own weight and superimposed loads, but not before the time listed below:

- 1. Slabs: 1 day.

3.12 RE-USE OF FORMS:

- A. Clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact surfaces as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close all joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces, except as acceptable to the PA.

3.13 MISCELLANEOUS CONCRETE ITEMS:

- A. Equipment Bases: Form concrete bases for all mechanical and electrical equipment indicated on the drawings, including architectural, structural, mechanical, electrical, and plumbing drawings, in accordance with approved shop details furnished by the various trades. Corners shall be bullnosed and bases shall be coved.
 - 1. Set anchor bolts for machines and equipment to template at correct elevations, complying with certified diagrams or templates of manufacturer furnishing machines and equipment.
- B. Pits, Trenches, Curbs: Form and pour pits for valves, trenches, curbs, and miscellaneous concrete items. Steel trowel surfaces hard, dense and smooth with corners, intersections, and terminations rounded. Where structural details for minor structures listed above do not specify otherwise, walls, floors and covers shall be 6" thick, reinforced with #3 bars, 6" o.c. both ways at center of members.

3.14 CONCRETE SURFACE REPAIRS:

- A. Patching Defective Areas: Repair and patch defective areas with cement mortar immediately after removal of forms, when acceptable to the DISTRICT representative.
- B. Remove and replace concrete having defective surfaces if defects cannot be repaired to satisfaction of the DISTRICT representative.
- C. Do not leave exposed steel ties, clamps, in concrete. Solid pack holes resulting from form construction after flushing them with water. Fill tie wire, nail, bolt, nut, separator and core sample holes, which will be exposed within 24 hours after forms are stripped.
 - 1. Cut out honeycomb, rock pockets, voids over 1/4" in any dimension, and holes left by tie rods and bolts, down to solid concrete but, in no case to a depth of less than 1". Make edges of cuts perpendicular to the concrete surface. Thoroughly clean, dampen with water and brush-coat the area to be patched with specified bonding agent. Place patching mortar after bonding compound has dried.
 - 2. Match surrounding architectural concrete surfaces in color and texture. Make trial patch to determine color match.

3.15 FIELD QUALITY CONTROL:

- A. Slump Tests: Measure concrete consistency by the "Standard Method of Test for Slump of Portland Cement Concrete," ASTM Designation C 143. Make this test at point of discharge twice each day or partial day's run. A complete and accurate record of these tests shall be kept by the inspector. Maximum slump shall be as follows:
 - 1. Walls 4" to 5".
 - 2. Floor slab on grade, 3" to 4".
- B. Cylinder Samples: Make concrete test cylinder samples in accordance with ASTM C 31.

3.16 DEFECTIVE CONCRETE:

- A. Mix Proportions: If ultimate compressive strength of test cylinders fall below minimum assumed in design, proportions of concrete mixes for remaining portion of structure shall be adjusted as required to produce concrete of design strength.
- C. Test Cores: Should the required test cylinders fail to show design compressive strength, test cores shall be taken at locations designated by the PA. Cores shall be tested complying with LABC Section 91.2604.3.5.1. If results show compressive strength to

be less than design stress, concrete shall be deemed defective and shall be replaced in a manner acceptable to the DISTRICT representative, and the Building Department. Cost of cores, tests, and patching shall be paid by Contractor. Coring holes shall be dry-packed.

- C. Concrete work not formed as indicated, not true to intended alignment, not plumb, level, or true to intended grades, with embedded sawdust or debris, and not fully conforming to the provisions of these specifications shall be deemed defective and shall be removed from the job site as directed by the DISTRICT representative and shall be replaced with concrete complying with specification requirements.

END OF SECTION

SECTION 03300 - CAST-IN-PLACE CONCRETE

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

The provisions of *The “Greenbook” Standard Specifications for Public Works Construction* shall apply except as modified herein.

1.02 SCOPE:

Work included: Provide all cast-in-place concrete, complete in place, as indicated on the drawings, specified herein, and needed for a complete and proper installation.

1.03 QUALITY ASSURANCE:

Qualifications of Installers:

Throughout the progress of installation of the work of this Section, provide at least one person who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills, and who shall be present at the site and shall direct all work performed under this Section.

Use adequate number of skilled workers to ensure installation in strict accordance with the approved design.

PART 2 - MATERIALS

2.01 GENERAL:

All materials shall conform to Section 201 of Standard Specifications.

- A. Portland Cement: Section 201-1.2.1, Type I or II, low alkali. Only one brand of cement shall be used.
- B. Aggregates: Conform to Section 201-1.2.2.
- D. Water shall be clean and free from deleterious materials.
- E. Curing compound: "Clear Aqua Resin Cure" as manufactured by Burke Concrete Accessories, Inc.
- F. Form lumber shall be Douglas Fir, construction grade or better.

- G. Expansion joint material: Shall be ASTM Standard D1751-61 "Flexcell" as manufactured by Celotex Corporation or approved equivalent.

PART 3 - EXECUTION

3.01 GENERAL:

All materials shall conform to Section 302.6 and 03360 of Standard Specifications except as modified herein.

3.02 CONCRETE MIX:

- A. The Contractor shall supply and pay all costs for concrete mix designs.
- B. In no case shall concrete contain less than 5 sacks of cement per cubic yard, and a maximum of 7 gallons of water per sack of cement.
- C. Concrete mixes shall be proportioned by the using of 1-inch maximum size aggregate.
- D. Concrete shall develop an ultimate compressive strength at 28 days of 2500 P.S.I. or as called out on each specific detail, with the stronger PSI specification taking precedence.
- E. The maximum slump for slab on grade shall be 4".

3.03 TESTS AND INSPECTION:

- A. The quality and quantity of materials used in the concrete shall be controlled at the batch plant by a Weighmaster.
- B. Contractor shall deliver two copies of each load ticket to DISTRICT.

3.04 FORMWORK:

Form shall be substantial, unyielding, true to line and grade, and shall conform to the dimensions indicated on the drawings.

3.05 TRANSPORTATION AND PLACING CONCRETE :

Responsibility for proper placing, compacting and finishing rests with the Contractor. Finished work showing voids and separation of aggregates will not be accepted.

3.06 SLAB FINISH:

- A. Exterior slabs shall be finished as indicated in the plans.. The finish must be true to line and grade.
- B. Concrete walks shall have 1/4" thick expansion joints at a maximum spacing of 20 feet, and cold joint at maximum intervals of 10 feet on center.
- C. All exterior flatwork shall drain positively away from buildings, whether indicated or not on the drawings.
 - (1) Any condition which may result in water standing or flowing adjacent to buildings shall be brought to the attention of the Landscape Architect before placing concrete.
 - (2) Maximum allowable tolerance for level slab shall be a variation of 1/8" from a 10'0" straight edge.
- D. Graffitied concrete surfaces will not be accepted. The contractor shall provide watchmen as required to insure a graffiti-free surface. Patching of concrete surfaces will not be permitted. Whole sections must be removed and replaced.
- E. Cracks in flatwork shall be remedied per the discretion of the DISTRICT Inspector, by means selected by the DISTRICT Inspector, ranging from epoxying to complete removal and replacement. Concrete finish of repaired or replaced sections must be comparable in finish to adjacent concrete flatwork, per the discretion of the DISTRICT Inspector.

3.07 CURING CONCRETE:

All concrete surfaces shall be kept continuously wet for a period of not less than 24 hours by ponding, soaking or spraying. Following this 24 hour period, the concrete shall be protected from loss of moisture by an approved liquid curing compound.

END OF SECTION

SECTION 03310 - FOOTINGS AND FOUNDATIONS

PART 1 - GENERAL

1.01 RELATED DOCUMENTS:

The provisions of *The "Greenbook" Standard Specifications for Public Works Construction* shall apply except as modified herein.

1.02 SCOPE OF WORK:

Work included: Provide all footings and foundations, complete in place, as indicated on the drawings, specified herein, and needed for a complete and proper installation.

1.03 QUALITY ASSURANCE:

Qualifications of Installers:

Throughout the progress of installation of the work of this Section, provide at least one person who shall be thoroughly familiar with the specified requirements, completely trained and experienced in the necessary skills, and who shall be present at the site and shall direct all work performed under this Section.

Use adequate number of skilled workers to ensure installation in strict accordance with the approved design.

Details provided on plans with notes. If notes conflict with book specification, the more stringent shall apply.

PART 2 - MATERIALS

2.01 GENERAL:

All materials shall conform to Section 201 of the latest edition of *The "Greenbook" Standard Specifications for Public Works Construction*.

- A. Portland Cement: Section 201-1.2.1, Type I or II, low alkali. Only one brand of cement shall be used.
- B. Aggregates: Conform to Section 201-1.2.2.
- C. Water shall be clean and free from deleterious materials.
- D. Form lumber shall be uniform construction grade or better.

- E. Provide reinforcement steel as indicated on the drawings and in conformance with the requirements of the uniform building code latest edition.

PART 3 - EXECUTION

3.01 GENERAL:

All materials shall conform to Section 302.6 of the latest edition of *The "Greenbook" Standard Specifications for Public Works Construction* except as modified herein.

3.02 CONCRETE MIX:

- A. The Contractor shall supply and pay all costs for concrete mix designs.
- B. In no case shall concrete contain less than 5 sacks of cement per cubic yard, and a maximum of 7 gallons of water per sack of cement.
- C. Concrete mixes shall be proportioned by the using of 1-inch maximum size aggregate.
- D. Concrete shall develop an ultimate compressive strength at 28 days of 2500 P.S.I. Special Inspector shall be provided at the Contractor's expense.
- E. The maximum slump for slab on grade shall be 4".

3.03 TESTS AND INSPECTION:

- A. The quality and quantity of materials used in the concrete shall be controlled at the batch plant by a Weighmaster.
- B. Contractor shall deliver two copies of each load ticket to the DISTRICT.

3.04 FORMWORK:

- A. Form shall be substantial, unyielding, true to line and grade, and shall conform to the dimensions indicated on the drawings.
- B. Edge of footing shall not cross property line or right of way line.

3.05 TRANSPORTATION AND PLACING CONCRETE:

Responsibility for proper placing, compacting and finishing rests with the Contractor. Finished work showing voids and separation of aggregates will not be accepted.

3.06 CURING CONCRETE:

All concrete surfaces shall be kept continuously wet for a period of not less than 36 hours by ponding, soaking or spraying. Following this 36 hour period, the concrete shall be protected from loss of moisture by an approved liquid curing compound.

END OF SECTION

SECTION 03380 - CONCRETE CURING

PART 1 B GENERAL

1.01 RELATED DOCUMENTS:

The provisions of *The "Greenbook" Standard Specifications for Public Works Construction* shall apply except as modified herein.

1.02 SCOPE OF WORK:

Furnish materials, labor, transportation, services, and equipment necessary to install all Concrete Curing related to the park as indicated on the Drawings complete as shown and as specified herein.

Related Work:

Concrete	Section 03010
Footings & Foundations	Section 03310

1.03 REFERENCES:

Comply with the applicable reference specifications as specified in the GENERAL PROVISIONS and in accordance with applicable laws, codes and regulations required by the County of Riverside, CA. Comply with the current provisions of the following Codes and Standards:

ASTM - American Society for Testing and Materials:

ASTM C94 B Ready-Mixed Concrete.

ASTM C150 B Portland Cement.

ASTM C271 B Sheet Materials for Curing Concrete.

ASTM C309 B Liquid Membrane-Forming Compounds for Curing Concrete.

ACI B American Concrete Institute:

ACI 301 B Specifications for Structural Concrete for Buildings.

ACI 305 B Recommended Practice for Hot Weather Concreting.

ACI 306 B Recommended Practice for Cold Weather Concreting.

ACI 318 B Building Code Requirements for Reinforced Concrete.

CBC B 2013 Edition of the California Building Code

1.04 SUBMITTALS:

In accordance with Contract Documents, General and Technical Provisions.

Submit product data and manufacturer's instructions for:

1. Curing compound.
2. Proprietary cleaning agents.
3. Plastic film for curing.

4. Surface retarders.

1.05 DELIVERY, STORAGE, AND HANDLING:

Store materials in dry and protected locations and protect from damage.

1.06 SITE CONDITIONS:

Environmental Requirements: Protect concrete against extreme cold and heat, frost, rapid drying, and damage by rain.

PART 2 - PRODUCTS

2.01 MATERIALS:

Curing Compound: ASTM C 309, non-staining, all resin type, white-pigmented, compatible with color admixture.

Acceptable Product: Burke Spartan-Cote Cure or equal. Curing Compound Application Rate: 350 sq. ft./U.S. Gallon (12.5m sq./L)

PART 3 - EXECUTION

3.01 CURING:

Protect concrete surfaces against rapid drying. Keep sealed with cure agent for necessary amount of time to reach concrete strength and inhibit moisture loss after placing per manufacturer=s recommendation.

Apply to exposed surface of concrete as soon as manufacturer recommends with an airless sprayer.

Apply to sides of concrete paving upon removal of form boards.

Meet requirements of manufacturer=s current printed application instructions.

Uniformly apply 2 coats and apply the second coat at right angle to first coat.

Apply compound to form a continuous, uniform, coherent film that will not check, crack, or peel.

Do not apply to concrete that is still bleeding, or has a visible water sheen on the surface.

Protect paving surfaces from foot traffic with scuff-proof paper.

Immediately re-coat damaged areas of curing compound.

Protect surface from water, adjacent concrete work and debris.

3.02 CLEANUP:

Contractor to remove all cure agent from concrete surface with power washing equipment and soft brush not causing abrasion to finish work surface prior to final inspection. No Cure Agent shall be present on any surfaces for final inspection acceptance. Remove debris and trash resulting from specified work.

END OF SECTION

SECTION 05510 – METAL FABRICATIONS

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

The provisions of *The “Greenbook” Standard Specifications for Public Works Construction* shall apply except as modified herein.

1.02 SCOPE:

- A. Work included: Provide all miscellaneous metal and metal fabrications complete, in place, as shown on the Drawings, specified herein, or needed for a complete and proper installation and not specifically called for under other Sections of these Specifications.
- B. Related work described elsewhere: Other metal items are specifically called for and described in other sections.

1.03 QUALITY ASSURANCE:

- A. Qualifications of personnel: Use adequate numbers of skilled workers who are thoroughly trained and experienced in the necessary crafts and who are completely familiar with the specified requirements and the methods needed for proper performance of the work of this Section.
- B. Welding: Perform all shop and field welding required in connection with the work of this Section, adhering strictly to the current pertinent recommendations of the American Welding Society.

1.04 SUBMITTALS:

- A. Product data: At the pre-construction meeting, submit:
 - 1. Complete materials list of all items proposed to be furnished and installed under this Section.
 - 2. Manufacturer's specifications and other data required to demonstrate compliance with specified requirements.
 - 3. Shop Drawings of all items proposed to be furnished and installed under this Section. Include plans, sections, elevations, and details as needed.
 - 4. Templates for anchor and bolt installation by other trades, where applicable.

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1.05 PRODUCT HANDLING:

- A. Protection: Use all means necessary to protect the materials of this Section before, during and after installation and to protect the work and materials of all other trades.
- B. Replacement: In the event of damage, immediately make all repairs and replacements necessary to the approval of the DISTRICT Representative and at no additional cost to the DISTRICT.

PART 2 - PRODUCTS

2.01 GENERAL:

All materials shall conform with Section 206 of the Standard Specifications except as modified herein.

2.02 MATERIALS AND COMPONENTS:

- A. Metal surfaces, general: For fabrication of the work of this Section which will be exposed to view, use only those materials which are smooth and free from surface blemishes including pitting, seam marks, roller marks, rolled trade name, and roughness.
- B. Standards: All materials shall comply with:
 - ASTM B209 – Aluminum and Aluminum-Alloy Sheet and Plate
 - ASTM B221 – Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles and Tubes
 - ASTM B580 – Anodic Oxide Coating on Aluminum

2.03 FASTENERS:

- A. General: Provide anodized aluminum fasteners or fasteners with extended corrosion protection in marine environments for exterior use and where built into exterior walls. Select fasteners for the type, grade, and class required.
- B. Standards: All fasteners shall comply with:

Masonry anchorage devices: patented Blue Climaseal coating or approved equal, Fed. Spec. FF-S-325.

2.04 FABRICATION:

- A. Workmanship:
 - 1. Use materials of size and thickness shown or, if not shown, of required size and thickness to produce strength and durability in the finished product.

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2. Work to dimensions shown or accepted on the Shop Drawings, using proven details of fabrication and support.
 3. Use type of materials shown or specified for the various components of the work.
 4. Form exposed work true to line and level, with accurate angles and surfaces and with straight sharp edges.
 5. Ease the exposed edges to a radius of approximately 0.8 mm 1/32" unless otherwise shown.
 6. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.
 7. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush; match and blend with adjoining surfaces.
 8. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type shown or, if not shown, use Phillips flat-head (counter-sunk) screws or bolts.
 9. Provide for anchorage of the type shown. Coordinate with supporting structure. Fabricate and space the anchoring devices to provide adequate support for intended use.
 10. Cut, reinforce, drill, and tap miscellaneous metal work as indicated to receive finish hardware and similar items.
- B. Anodizing: Provide an Architectural Class II anodic oxide coating for those items shown or specified to be anodized, per Anodic Oxide Coatings on Aluminum, ASTM B580.

2.05 MISCELLANEOUS METAL FABRICATIONS:

- A. Rough Hardware:
1. Provide bent or otherwise custom fabricated bolts, plates, anchors, hangars, dowels, and other miscellaneous anodized aluminum shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete and other structures.
 2. Manufacture or fabricate items of sizes, shapes, and dimensions required.
 3. Provide anodized aluminum for heads and nuts which bear on structural connections.
 4. Tack weld all exposed fasteners to prevent unauthorized removal. Include all fastening on the roof.

PART 3 - EXECUTION

3.01 GENERAL:

All work shall conform with Section 304 of the Standard Specifications.

3.02 INSPECTION:

Examine the areas and conditions under which miscellaneous metal items are to be installed, and correct conditions detrimental to the proper and timely completion of the work. Do not proceed until unsatisfactory conditions have been corrected.

3.03 PREPARATION:

Furnish setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as concrete inserts, anchor bolts, and miscellaneous items having integral anchors, which are to be embedded in concrete construction. Coordinate delivery of such items to project site.

3.04 INSTALLATION:

- A. Fastening to in-place construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction including threaded fasteners for concrete inserts, toggle bolts, lag bolts, wood screws, and other connectors as required.
- B. Cutting, Fitting, and Placement:
 - 1. Perform cutting, drilling, and fitting required for installation of miscellaneous metal fabrications.
 - 2. Set work accurately in location, alignment, and elevation, and make plumb, level, true and free from rack, measured from established lines and levels.
 - 3. Provide temporary bracing or anchors in formwork for items which are to be built into concrete or similar construction.
 - 4. Fit exposed connections accurately together to form tight hairline joints.
 - 5. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations.
 - 6. Grind exposed joints smooth, and brush plate if necessary. Do not weld, cut, or abrade the surfaces of exterior units which have been anodized after fabrication, and are intended for bolted or screwed field connections, except where required for vandal resistant anchorage.

- C. Field welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of weld made and methods in correcting welding work. No field welding of aluminum without the approval of the Engineer.
- D. Brush plating: Immediately after erection, complete brush plating to clean field welds, bolted connections, and any surface inconsistencies or abrasions. DISTRICT Representative to inspect afterwards, and determine if additional plating is necessary.

END OF SECTION

SECTION 09000 – STRIPING

PART 1 – GENERAL

1.01 RELATED DOCUMENTS:

The provisions of *The “Greenbook” Standard Specifications for Public Works Construction* shall apply except as modified herein.

1.02 SCOPE OF WORK:

Striping.

PART 2 - MATERIALS

2.05 PAINT:

Shall conform to Section 210-1.6 of the Std. Specs. except as modified on the drawings. Paint shall be specifically manufactured for traffic line markings and reflective glass beads shall be added to the paint.

PART 3 - EXECUTION

3.06 STRIPING:

Install striping and other markings as shown on the plans in accordance with Section 310-5.6.1 of the Std. Specs.

END OF SECTION

SECTION 09623 – ANTI-GRAFFITI COATINGS

PART 1 – GENERAL

1.01 SUMMARY:

- A. Section includes: Anti-graffiti coatings.
- B. Related Sections:
 - 1. Section 09 90 00 - Painting: Applicable preparation and application requirements.

1.02 SUBMITTALS:

- A. Product Data: Submit complete manufacturer's descriptive literature and specifications. Include complete lists of materials proposed for use, giving the manufacturer's name, catalog number, and catalog cut for each item where applicable.
- B. Samples: Submit the manufacturer's standard palette for the selection of color.
 - 1. When selections have been made, submit samples of finish not less than 12 inches by 12 inches in size for review and acceptance.
- C. Quality Control Submittals:
 - 1. Certificates: Submit written certification that the applicator has been approved by the anti-graffiti coating manufacturer.
 - 2. Manufacturer Instructions: Submit the manufacturer's current recommended methods of installation, including relevant limitations, safety and environmental cautions, and application rates.
- D. Contract Closeout Submittals:
 - 1. Certification: Submit, to the County, a certified copy of invoices from the coating manufacturer clearly showing the quantity of the accepted coating delivered to the jobsite, together with an affidavit showing the square footage of surfaces to which the coating was applied and the manufacturer's written recommendations for coverage.

1.03 QUALITY ASSURANCE:

- A. Qualifications:
 - 1. Use products by manufacturers regularly engaged in manufacturer of this product and with a history of at least three successful applications, within the last three years, acceptable to the County.

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COMMUNITY WORKS DESIGN GROUP

2. Use skilled workers who are thoroughly trained and experienced and who are completely familiar with the specified requirements and methods.
 - a. Regulatory Requirements: Comply with applicable codes and regulations of governmental agencies having jurisdiction. Where those requirements conflict with this Specification, comply with the more stringent provisions.
 - b. Certifications: Upon completion, issue to the County, a Certificate of Inspection and Compliance indication that the completed work meets all the requirements of this Specification and the manufacturer's printing instructions. Certificate shall be signed by the applicator.

1.04 DELIVERY, STORAGE, AND HANDLING:

- A. Acceptance at Site: Material shall be delivered to Project in original containers, completely sealed and bearing name of coating contained therein.
- B. Storage and Protection: Use all means necessary to protect the materials of this Section before, during and after installation.

1.05 PROJECT CONDITIONS:

- A. Environmental Requirements: Do not apply coatings when surface temperature is more than 90 degrees F. in the shade, nor when the relative humidity more than 70 percent.

PART 2 - PRODUCTS

2.01 MANUFACTURERS:

- A. Design is based on products manufactured by Dunn-Edwards Corporation, Los Angeles, CA (888) 337-2468.
- B. Materials shall be the product of one manufacturer and shall be either the ones upon which the design is based or the products of a manufacturer accepted as an equal in advance.

2.02 MATERIALS:

- A. Sealer W709 EFF-STOP.
- B. Finish Coat: IP 630 ULTRASHIELD a two-part aliphatic urethane polyester based mixture. Color pigment shall be factory mixed in the aliphatic urethane.
 1. Color shall be as selected by the County Representative from the manufacturer's full line of standard colors.
 2. Painted surfaces covered by a clear polyurethane coating will not be acceptable.

3. Coating shall have been tested in accordance with the manufacturer's printed literature.
4. Anti-graffiti coatings shall be easily cleanable with MEK or graffiti cleaners without requiring recoating.

PART 3 - EXECUTION

3.01 EXAMINATION:

- A. Verification of Conditions: Prior to Work on this Section, examine the installed work of all other trades and verify that all such work is complete or properly corrected to the point where this installation may properly commence.
- B. Correct defects or other conditions which would adversely affect anti-graffiti coatings to the satisfaction of anti-graffiti material applicator prior to application of coatings.

3.02 PREPARATION:

- A. Protection: Protect and cover finished work and materials of all other trades which may be affected by work of this Section during coating application.
- B. Surface Preparation:
 1. Substrates to receive anti-graffiti coatings shall be thoroughly cleaned of all dirt, laitance, encrustations and other foreign materials which would adversely affect the required appearance of the structure.
 2. Preparation of Substrates: Concrete, concrete block masonry, brick masonry and metal shall be cleaned by water blasting at 3000 pounds per square inch, or other methods in accordance with coating manufacturer's current written instructions and recommendations.

3.03 APPLICATION:

- A. General: Apply coatings in strict accordance with the manufacturer's recommendations as accepted by the County.
- B. Primer shall be applied to a dry film thickness of 1.5 mils per coat. Apply in one or two coats at not more than 300 square feet per gallon. Apply with brush, roller or airless spray.
- C. Coating should be applied to
 - All exposed wall surface
 - All exposed columns of the shade structure
 - Exposed surface of the hot ash containers
 - All concrete trash containers

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3.04 PROTECTION:

- A. Protect finished work during progress of coating application and make good damage done to such work in manner satisfactory to the County Representative. Properly cover and protect finished work of other trades.

END OF SECTION 09 96 23

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

Bid Submission Address:

Riverside County Regional Park & Open-Space District
4600 Crestmore Road
Jurupa Valley, CA 92509
Telephone: (951) 955-4726

Request for Bids # PKARC - 241

Bid Issue Date: 05/22/2019

Job Walk Date: 05/30/2019

Bid Closing Date: 06/13/2019

on or before 1:30 P.M. Pacific Time

ATTACHMENT E

Preliminary Cost Estimate for Santa Rosa Plateau ADA Compliance

**COMMUNITY WORKS DESIGN GROUP
PRELIMINARY COST ESTIMATE**

DATE: 12/06/18

ESTIMATE BY: DIEGO LOPEZ

PROJECT: SANTA ROSA PLATEAU ADA

PROJECT # 181058

DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
GENERAL MOBILIZATION (BONDS, INSURANCE TEMP. FACILITIES)	1	L.S.	\$12,500.00	\$12,500
MOBILIZATION TOTAL				\$12,500
AREA A-ADA PARKING IMPROVEMENTS				
DEMOLITION AND CLEARING				
GRADING/SPREADING GRAVEL	280	S.F.	\$0.50	\$140
CONCRETE	40	S.F.	\$4.50	\$180
HARDSCAPE				
CONCRETE PAVING - 4"	40	S.F.	\$7.50	\$300
* CONCRETE PAVING - 6"	280	S.F.	\$18.00	\$5,040
MISCELLANEOUS				
RESTRIPING - SINGLE LINE STALLS	320	L.F.	\$2.50	\$800
RESTRIPING (DISABLED) - EMBLEM	3	EACH	\$150.00	\$450
ADA SIGNS	3	EACH	\$250.00	\$750
ENTRY TOWING SIGN	1	EACH	\$500.00	\$500
AREA A TOTAL				\$8,160
AREA B-ACCESSIBLE CONNECTION TO DRINKING FOUNTAIN & KIOSK				
DEMOLITION AND CLEARING				
GRADING	2,300	S.F.	\$0.50	\$1,150
12" FILL SOIL FOR 4" PAVING-LOWER POINT	18	C.Y.	\$50.00	\$900
SITE FEATURES				
* REPLACE MESSAGE BOARD	1	EACH	\$3,500.00	\$3,500
DRINKING FOUNTAIN-TIE TO EXISTING DRAIN	1	EACH	\$5,000.00	\$5,000
HANDRAILS	215	L.F.	\$75.00	\$16,125
TRUNCATED DOMES	2	EACH	\$500.00	\$1,000
LANDSCAPING				
3" D.G. NEXT TO NEW CONCRETE WALK	5	C.Y.	\$100.00	\$500
HARDSCAPE				
CONCRETE CURB - 6"	500	L.F.	\$18.00	\$9,000
SPEED TABLE PAVING - 6"	365	S.F.	\$10.00	\$3,650
CONCRETE PAVING - 4"	1,935	S.F.	\$7.50	\$14,513
AREA B TOTAL				\$55,338

DESCRIPTION	QTY.	UNIT	UNIT COST	TOTAL COST
AREA C-ACCESSIBLE CONNECTION TO PORTABLE TOILET				
DEMOLITION AND CLEARING				
GRADING	1,045	S.F.	\$0.50	\$523
CONSTRUCTION				
WALLS / FENCES				
STONE-FACED RETAINING WALL	28	L.F.	\$250.00	\$7,000
SITE FEATURES				
HANDRAILS	67	L.F.	\$75.00	\$5,025
TRUNCATED DOMES	2	EACH	\$500.00	\$1,000
HARDSCAPE				
CONCRETE CURB - 6"	45	L.F.	\$18.00	\$810
SPEED TABLE PAVING - 6"	500	S.F.	\$10.00	\$5,000
CONCRETE PAVING - 4"	545	S.F.	\$7.50	\$4,088
AREA C TOTAL				\$23,445
AREA D-ACCESSIBLE CONNECTION TO STAGE				
DEMOLITION AND CLEARING				
GRADING	1,860	S.F.	\$0.50	\$930
CONSTRUCTION				
SITE FEATURES				
HANDRAILS	120	L.F.	\$75.00	\$9,000
WALLS / FENCES				
* STONE BASES-STAGE POSTS	4	EACH	\$650.00	\$2,600
HARDSCAPE				
CONCRETE CURB - 6"	272	L.F.	\$18.00	\$4,896
CONCRETE PAVING - 4"	1,860	S.F.	\$7.50	\$13,950
* STAMPED ANIMAL FOOTPRINTS IN CONCRETE	1	L.S.	\$2,500.00	\$2,500
AREA D TOTAL				\$33,876
SUBTOTAL				\$133,319
10.00% CONTINGENCY				\$13,332
GRAND TOTAL				\$146,650

* = POTENTIAL ALTERNATES