

HMC ARCHITECTS
3546 Concours Street
Ontario, California 91764

April 23, 2014

Castle View Elementary School
Security Enhancements
Riverside Unified School District
HMC # 3152153-300
DSA # 04-113355

ADDENDUM NO. 1

The following changes, additions, deletions or corrections shall become a part of the Contract Documents for the project named above and all other conditions shall remain the same. The bidders shall be responsible for transmitting this information to all affected subcontractors and suppliers prior to the closing of bids. Acknowledge receipt of this Addendum in spaces provided on the Bid Form. Failure to acknowledge will subject Bidder to disqualification.

SPECIFICATIONS

Item No. AD-1.1: Reference Revised Sections

A. The following revised specification sections are hereby issued:

Section 08 71 00, Door Hardware
Section 32 13 13, Sitework Concrete

Item No. AD-1.2: Reference New Sections

A. The following new specification sections are hereby issued:

Section 09 51 53, Acoustical Ceilings - Glue-Up
Section 32 17 23, Pavement Markings

Item No. AD-1.3: Reference Section 10 14 00, Identification Signs

A. Delete Subparagraph 2.04.A.1. Substitute therefor:

“1. Copy: minimum 4-inch high International Symbol of Accessibility.”

B. Delete Subparagraph 2.05.A.1. Substitute therefor:

“1. UNAUTHORIZED VEHICLES PARKED IN DESIGNATED ACCESSIBLE SPACES NOT DISPLAYING DISTINGUISHING PLACARDS OR SPECIAL LICENSE PLATES ISSUED FOR PERSONS WITH DISABILITIES WILL BE TOWED AWAY AT THE OWNER'S EXPENSE. TOWED VEHICLES MAY BE RECLAIMED AT RIVERSIDE POLICE DEPARTMENT, PHONE (951) 353-7992)

- a. Verify address and phone number from Owner. Use actual address and telephone number in sign copy, signs with a blank line or space for hand lettering will be rejected. All lettering to be permanent fabrication of sign. “

C. Delete Paragraph 3.02.B.3.b. Substitute therefor:

- “b. Set sign so that bottom of the first line of **tactile** text copy is maximum 60-inches AFF, but bottom of lowest line of **braille** copy is minimum 48-inches AFF.”

Item No. AD-1.4: Reference Section 32 31 19.99, Decorative Metal Fences and Gates

A. Delete Subparagraph 2.01.B.1.c. Substitute therefor:

- “c. Pressure to operate **gates/doors** shall not exceed: 5 lbs. (22.2 N) for exterior **gates/doors**, and 5 lbs. (22.2N) for interior doors. When fire doors are required, the maximum effort to operate the doors shall not exceed 5 lbs (22.2 N), except that, when approved by the appropriate administrative authority, the maximum effort required to operate the doors may be increased not to exceed 15 lbs (66.72N). CBC Sections 1008.1.3 and 1133B.2.5.”

B. Delete Subparagraph 2.01.B.e.

DRAWINGS

Item No. AD-1.5: Reference Revised Drawings

A. The following revised drawings are hereby issued:

- A1.1
- A1.2
- A10.00
- A10.01
- A10.02
- A10.10
- C-1
- C-2

HMC ARCHITECTS

By _____
Marco A. Eacrett, Architect
Principal

SECTION 08 71 00

DOOR HARDWARE

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Hardware for doors
 - 2. Weatherstripping and thresholds
 - 3. Gasketing and silencers
 - 4. Keyed cylinders for the work of others
- B. Related Sections
 - 1. Section 06 20 00, Finish Carpentry
 - 2. Section 06 41 16, Casework
 - 3. Section 08 12 13, Hollow Metal Frames, Welded
 - 4. Section 08 13 13, Hollow Metal Doors
 - 5. Section 09 29 00, Gypsum Board

1.02 REFERENCES

- A. ADA – Americans with Disabilities Act of 1990, as amended.
 - 1. ADA Standards – ADA Title II Regulations and 2010 ADA Standards for Accessible Design.
- B. ANSI - American National Standards Institute
BHMA - Builders Hardware Manufacturers Association
 - 1. ANSI/BHMA A156.18 - Materials and Finishes
- C. CBC – 2010 California Building Code (CCR Title 24, Part 2 as adopted and amended by DSA)
 - 1. CBC 10 - Chapter 10, Means of Egress
 - 2. CBC11B – CBC Chapter 11B, Access to Public Buildings, Public Accommodations, Commercial Facilities and Publicly Funded Housing
- D. CRSC - California Referenced Standards Code (CCR Title 24, Part 12)
 - 1. CRSC-7A.2 - Standard 12-7A-2, Exterior Windows
 - 2. CRSC-7A.4 - Standard 12-7A-4 Fire Resistive Standards, Fire Door Assemble Tests
 - 3. CRSC-10.2 - Standard 12-10-2 Single Point Latching or Locking Devices
 - 4. CRSC-10.3 - Standard 12-10-3 Emergency Exit and Panic Hardware
- E. DHI - Door and Hardware Institute
 - 1. DHI-02 - Installation Guide for Doors and Hardware
 - 2. DHI-03 - Keying Systems and Nomenclature
- F. MIL-R - Military Reference
 - 1. MIL-R-6130 - Rubber, Cellular, Chemically Blown

2. MIL-R-6855/3 - Rubber, Synthetic, Rods (or Rounds)
- G. [NFPA - National Fire Protection Agency
1. NFPA 80 - Fire Doors and Fire Windows
 2. NFPA 101 – Life Safety Code
 3. NFPA 105 - Smoke Control Door Assemblies]
- H. UL - Underwriters' Laboratories, Inc.
1. UL Directory - UL Fire Resistive Materials Directory
- 1.03 SUBMITTALS
- A. Action Submittals
1. Shop Drawings indicating locations and mounting heights of each type of hardware
 2. Hardware Schedule. Submit a complete Hardware Schedule, signed by the distributor's AHC, following the procedures in this Manual for Product Data. The Schedule shall include the following information; coordinate with the Schedules required under Sections 08 12 13, 08 13 13.
 - a. Hardware Group identification; use the same numbers and sequence as this Manual
 - b. Completely describe door and frame features and list by related Room Opening Numbers, use the same numbers as Architect's Construction Documents
 - c. Identify each hardware item by manufacturer, model or brand name, and catalog number
 - d. Indicate size or duty rating and finish of each item
 - e. Indicate lock function, type, and style
 - f. Indicate fire-rating, lead lining or other special features
 - g. Provide a legend on each page explaining the abbreviations and symbols used within schedule
 - h. Product Data. Attach a Product Data sheet for each hardware item in the Schedule, include wiring diagrams for each electrified product; coordinate with electrical before submitting.
 3. Keying Schedule. Upon acceptance of Hardware Schedule, develop Keying Schedule in consultation with Owner. Submit following the procedures for Product Data.
- B. Information Submittals
1. Manufacturers' parts lists, templates, and installation instructions.
 2. Manufacturers' certificates of compliance regarding specified fire-ratings.
- C. Closeout Submittals
1. Operation and Maintenance Manuals. Include Product Data on operating hardware, and manufacturer's recommended procedures and schedule for lubrication and inspection procedures related to preventative maintenance. Include a copy of the accepted hardware schedule and key biting list.
 2. Executed Warranties

1.04 QUALITY ASSURANCE

- A. Manufacturers: companies with a minimum of 10-years experience manufacturing door hardware for commercial projects similar in scale and complexity to those required for this Project.
- B. Hardware Supplier: company with at least 6-years experience scheduling and supplying door hardware for commercial projects similar in scale and complexity to those required for this Project.
 - 1. Company shall be a factory-direct, contract-supplier
 - 2. Company shall employ and assign at least one Architectural Hardware Consultant (AHC) to be in responsible charge of the Hardware Schedule development and provide the Field Quality Assurance services specified in this Section.
- C. Supplier's AHC: DHI certified Architectural Hardware Consultant (AHC) with minimum 3-years' experience scheduling and inspecting commercial hardware installations for DSA inspected, projects similar in scale and complexity to those required for this Project. AHC shall be authorized to act on behalf of Supplier, qualified to render judgments on progress of work, able to make recommendations to adapt installations to field conditions and to certify installation as in compliance with Contract requirements.
- D. Items specified as "no substitutions" are intended to match existing similar items.
- E. Regulatory Requirements
 - 1. Pursuant to DSA Bulletin 11-05 (AB211), Dated 6/21/11 (Revised 9/30/11), require that doors shall be capable of locking from the inside of the room, when there are 5 or more occupants, so staff members or students do not have to expose themselves on the outside of the room or building to a hostile intruder during "lock-down" procedures.
 - 2. Materials shall conform to CBC-10, CBC-11B, CRSC-12-7-4 and NFPA 80 for requirements applicable to fire-rated doors and frames.
 - 3. Materials shall conform to CBC-11B, Sections 1133B.2.1 and 1133B.2.5.2 and CBC-10, Sections 1008.1.1.1 and 1008.1.8.2 for positioning for accessibility.
 - a. Hand-activated door opening hardware, handles, pulls, latches, locks, and other operating devices on accessible doors shall be operable with one hand and shall not require tight grasping, pinching, or twisting of the wrist.
 - b. The force required to activate controls shall be no greater than 5 pounds (22.2N). CBC Section 1117B.6, Item 4.
 - c. Hardware shall be centered between 30" and 44" above the floor. CBC Section 1133B.2.5.2.
 - d. Maximum operating force required to push or pull open a door shall not exceed: 5 lbf. (22.2N) for exterior doors, and 5 lbf. (22.2N) for interior doors. Required fire doors shall have the minimum opening force allowable by the DSA authority, not to exceed 15 lbf. Push or pull force for a hinged door shall be measured perpendicular to the door face at the door opening hardware or 30" from the hinged side, whichever is farther from the hinge. CBC Sections 1008.1.3 and 1133B.2.5 / ADAAG 4.13.11.

- e. Door closers, when provided, shall have a sweep period adjusted so that from an open position of 70 degrees, the door will take at least 3 seconds to move to a point 3" from the latch, measured to the leading edge of the door. CBC Sections 1003.3.1 Exception and 1133B2.5.1.
 - 4. Thresholds shall comply with CBC Sections 1008.1.7 and 1133B.2.4.1.
 - 5. Floor stops shall not be located in the path of travel and 4" maximum from walls DSA Policy 99-08.
 - 6. Hardware (including panic hardware) shall not be provided with "Night Latch" (NL) function for any accessible doors or gates unless the following conditions are met per DSA Interpretation 10-08 DSA/AC (External), revised 4/28/09. Such conditions must be clearly demonstrated and indicated in the specification:
 - a. Such hardware has a 'dogging' feature.
 - b. It is dogged during the time the facility is open.
 - c. Such 'dogging' operation is performed only by employees as their job function (non-public use).
 - 7. Panic hardware shall comply with CBC Section 1008.1.10.
 - a. Panic hardware shall be so mounted (centered between 36" and 44" above finished floor as recommended) that the clear width of the exitway is not less than 32" measured between the face of the door and the opposite stop. CBC Section 1133B.2.2 and Figure 11B-5B.
 - b. The unlatching force of the panic hardware shall not exceed 5 pounds (22.2N), applied in the direction of travel. CBC Section 1117B.6, Item 4.
 - 8. Materials for fire-rated and exit doors shall conform to the applicable sections of NFPA 101 and NFPA 105, and CBC-10.
 - 9. Provide UL labels on exit devices for fire-rated openings.
- F. Keying Conference. Upon acceptance of Hardware Schedule, Hardware Supplier shall arrange for and convene a conference with the Owner to confirm keying requirements.
- 1. Convene the Conference sufficiently in advance of hardware installation to cause no delay in the orderly progress of the work.
 - 2. Give Architect at least 10-days advance notice of Conference schedule and agenda.
 - 3. Contractor shall conduct the Conference as specified in Division 01, General Requirements, for project administration.
- G. Pre-Installation Conference. Convene Conference at least two weeks prior to beginning installation of this work.
- 1. Give Architect at least 10-days advance notice of Conference schedule and agenda.
 - 2. Contractor shall conduct the Conference as specified in Division 01, General Requirements, for project administration.
- 1.05 DELIVERY, STORAGE AND HANDLING
- A. Package hardware items individually by doors, group small items together, label and identify package with door opening code to match hardware schedule. Identify location of each door opening. Deliver in strong, sturdy containers.
 - B. Deliver keys to Owner by security shipment direct from hardware supplier.

- C. Protect hardware from theft by cataloging and storing in dry, secure area.

1.06 PROJECT REQUIREMENTS

- A. Coordinate work of this Section with manufacturing of doors, frames and other work, conducted under other Sections, that is reinforced for door hardware.
- B. Although several manufacturers are listed as acceptable, obtain each kind of hardware (latch- and lock-sets, exit devices, hinges, closers, etc.) from only one manufacturer.
- C. Furnish items of hardware required to complete this work in accordance with these Specifications and the manufacturers' instructions. Provide hardware items required for the proper operation of each door, whether or not specified in this Section. Items provided that are not expressly specified shall be commensurate in quality and type to related specified items.
- D. Where hardware items specified are not adaptable to the finished shape or size of the members for which they are specified, submit, for Architect's approval, suitable alternatives having the same operation and quality as the items specified.
- E. Exit Doors shall be operable at all times from the inside without the use of a key or any special knowledge or effort.
- F. Fire-Rated Openings. Provide hardware for fire-rated openings in compliance with NFPA 80. This requirement takes precedence over other specified requirements for such hardware. Provide only devices that have been tested and listed by UL for the type and size of each door required, and that comply with the labeling requirements of the door and door frame. Latching hardware, door closers, ball bearing hinges, and seals are required whether listed in the Hardware Schedule or not.
 - 1. Where exit devices are required on fire-rated doors, provide supplementary marking on the door's UL Label indicating DOOR IS FIRE-RATED - FIRE RATED EXIT HARDWARE REQUIRED, and
 - 2. UL label on exit device shall indicate FIRE EXIT HARDWARE.
 - 3. Hardware for smoke-control doors shall be in accordance with NFPA 105.

1.07 EXTENDED WARRANTIES

- A. Manufacturer shall warrant the installed hardware to be and to remain free from defect in material and workmanship for the periods listed below. Upon written notice from the Owner, the manufacturer shall promptly, without cost and with minimum inconvenience to Owner correct said deficiencies. Manufacturer may service or replace defective work at its option, provided the opening is restored to like-new operation. This guarantee does not cover defect due to lack of maintenance or abnormal or abusive use after Date of Substantial Completion, provided that the manufacturer has demonstrated its recommended maintenance procedures to the Owner's personnel.
 - 1. Warrant Door Closers for at least 10 years.
 - 2. Warrant Locksets for at least 7 years
 - 3. Warrant Exit Devices for at least 7 years.
 - 4. Warrant other hardware items for at least 2 years.

1.08 MAINTENANCE

- A. Extra Materials. Provide, as extra materials, one complete set of special or proprietary wrenches and tools required for the proper maintenance and adjustment each hardware component supplied. Tools shall be by or as recommended by hardware component manufacturer.

PART 2 - PRODUCTS

2.01 MANUFACTURERS

- A. Acceptable Manufacturers

PRODUCT	ACCEPTABLE MANUFACTURERS			
Hinges	McKinney	Bommer	Hager	
Continuous Hinges	Markar	McKinney		
Lock- / Latch-sets	Sargent	Best		
Exit Devices	Sargent	Von Duprin		
Cylinders	Best	As specified		
Closers	Sargent	LCN		
Push/Pull/Kick PI	Rockwood	McKinney	Trimco	
O.H. Stops	Sargent	Rixson		
Door Stops	Rockwood	McKinney	Trimco	
Silencers	Rockwood	McKinney	Trimco	
Weatherstripping	Pemko	McKinney		

- 1. Or equal, approved in accordance with Division 01 requirements for substitutions.

2.02 MATERIALS

- A. Hinges. Hinge open widths shall be sufficient size to permit door to swing 180 degrees. Furnish hinges with steel pins and flush bearings.

- 1. Drawing typically depict doors at 90 degrees; doors will actually swing to maximum allowable. Use wide-throw conventional or continuous hinges as needed up to 8 inches in width to allow door to stand parallel to wall for true 180-degree opening. Advise Architect if 8-inch width is insufficient.
- 2. Provide 3 hinges per door leaf up to 7 foot 6 inch height. Add one additional hinge for each additional 30 inches in door height or fraction thereof.
- 3. At out-swinging exterior doors, provide hinges with non-removable (NRP) pins.

- B. Continuous Hinges:

- 1. Hinge line to be non-handed and of slim barrel design. Hinges to be made of type 304 stainless steel and shall have a concealed Teflon-coated stainless steel pin with twin self-lubricated nylon bearings at each knuckle. Hinges shall be UL listed up to and including 3 hours and shall be available with power transfer cut-outs when necessary.
- 2. Unless directed otherwise, continuous hinges are required at exterior doors.

- C. Lock and Latch-Sets: Mortise Locks: All mortise locks and trim shall be the product of a single manufacturer for continuity of design and consideration of warranty. Locksets shall be Sargent 70-8200 series x LNL trim. Furnish Rockwood VRT24/VRT26 anti-vandal pulls at exterior openings. Review project lock series application with district. All lockset functions shall be manufactured in a single sized case formed from 12 GA. Steel minimum. The case shall be closed on all sides and back. The lockset shall have a field adjustable, beveled armored front, with a .125 inch thickness minimum. The lockset shall be 2-3/4 inch backset standard with a one piece 3/4 inch throw anti-friction stainless steel latchbolt. Lever return springs shall be internal. Springs used for leveling and lever return shall not be located outside of the lock case. Full lever retraction at 30 degrees for ADA accommodation. This standard serves as a "visual operation" when the 8292 classroom lockset is in the push/pull (non-secured) function. Handing shall be field reversible without opening the lock case. Locksets for labeled fire doors shall have a fusible link mechanism to prevent latchbolt retraction in the even of fire. Provide ANSI 4-7/8 standard curve lip strike with wrought boxes for all locks. Strikes shall be of sufficient length to protect trim or the inactive leaf of a pair of doors. Furnish flat strike at pairs with astragal.
- D. Exit Devices (Panic Hardware): Shall be Sargent 70-16-19-8000 Series. Furnish Rockwood VRT24/VRT26 anti-vandal pulls at exterior openings. Exit Devices shall be operable without ability to grasp to open door in accordance with CBC 1133B.2.5.2. Devices shall be non-handed, and in compliance with CBC-10, Sections 1008.1.8.2.1 and 1008.1.9 and CRSC-12-10-3 and have deadlocking latchbolt. Latchbolt may be able to be dogged-down with special tool or key from interior.
1. Push-pad type devices shall have stainless-steel pads.
 2. Lever handle trim, where provided, shall match locksets.
 3. Furnish devices for wood doors with sex bolts unless otherwise specified.
 4. Deadlocking latchbolt shall be interconnected with latching mechanism.
 5. Devices for fire rated doors shall have label that reads "Fire Exit Hardware".
- E. Cylinders: BEST 7 pin, interchangeable core keyed to Owner's existing system. Do not use permanent keying for construction purposes.
- F. Door Closers: Sargent 281 Series : shall be full rack-and-pinion type with full, architectural, removable, non-ferrous case. Place closers inside building, stairs and rooms. Closers shall be non-handed, non-sized and adjustable to operate with maximum 5-lbf.
1. At exterior doors and at interior fire rated doors, provide size 2 through 6, unless scheduled otherwise.
 2. At interior non-rated doors, provide size 1 through 4, unless scheduled otherwise.
 3. Where parallel arm closers are required for doors with fixed panels over, provide flush transom offset brackets.
 4. At narrow head rails, provide drop brackets.
- G. Door Stops. Provide stops for every door to prevent damage to adjoining surfaces in path of door swing. Provide concave, resilient wall stops unless indicated or scheduled otherwise.
1. Where the door would contact equipment, casework, or other obstruction before the adjoining wall, provide an over-head stop. Use concealed type unless surface mounted is required for fire-label requirements.

- H. Kick Plates: 0.050-inch, sheet metal, 10-inches high with four beveled edges. Furnish with machine or wood screws of bronze or stainless steel to match other hardware.
 - 1. For single-leaf door openings, plate width: 2-inches less than door leaf
 - 2. For pairs of doors without mullion, plate width: 1-inch less than door leaf
 - 3. For pairs of doors with edge guards, plate width: 1-1/2-inches less than door leaf
- I. Silencers: Rockwood No. 608, or equal. Furnish unless seals or weatherstripping are scheduled in Part 3 of this Section.
 - 1. Furnish, 3 on jambs of doors.
 - 2. Furnish 1 at head of each leaf at double doors.
- J. Weatherstripping. Where Hardware Set, as scheduled in Part 3 of this Section, includes "weatherstripping" provide a complete set of the following.
 - 1. Thresholds: comply with CBC-10 Section 1008.1.6, CBC-11B Section 1133B.2.4.1 and the following.
 - a. Exterior Thresholds: maximum height of 1/2-inch, with beveled edges
 - b. Interior Thresholds: maximum height of 1/4-inch, with beveled edges
 - 2. Door Sweep
 - 3. Head and Jamb Frame Weatherstripping
 - 4. Mastic: butyl-rubber or polyisobutylene as specified in Section 07 92 00; furnish with primers, and accessories recommended by manufacturer for each condition.

2.03 FASTENERS

- A. Fasteners shall be as furnished or recommended by item manufacturer for each condition. Furnish machine screws for metal substrate, and wood screws for wood.
 - 1. Fastener base metal and finish shall match hardware with which they're used.
 - 2. For strikes, faceplates, and similar items furnish suitable screws.
 - 3. For butt hinges, furnish flathead, countersunk, full-thread screws.
 - 4. For closer bases or closer shoes mounted to doors, furnish bolts.
 - 5. Screws: phillips head.
- B. Threshold Anchors: 1/4-inch diameter, non-ferrous bolts with lead expansion shield, Red-Head No.SFS-1420 Flat Head Sleeve Anchors (SS/FHSL), or equal.
- C. Do not use self-drilling, self-tapping screws, unless furnished by hardware manufacturer for the specific condition, or for mounting flat-goods (push-plates, kick-plates, etc.).

2.04 KEYING

- A. Keying Schedule shall comply with DHI-03 for keying systems and nomenclature.
- B. BEST cores keyed to existing Owner's system
- C. Supply 2 keys for each lock.
- D. Supply keys in the following quantities:
 - 1. 5 master keys.
 - 2. 5 grand master keys.
 - 3. 5 construction keys.
 - 4. 2 control keys and 2 extra cylinder cores.

2.05 FINISHES

- A. Finish: BHMA A156.18, No. 626 - Dull Chrome, unless indicated or scheduled otherwise.
 - 1. In areas using BHMA No.626 finish, door pulls and push-bars, and push- and kick-plates shall be BHMA 630 stainless steel.
 - 2. Paint door closer housings to match other hardware unless indicated otherwise.
- B. Finishes shall conform to the following standards and symbols.

	Finish/Description	US Symbol	BHMA No.
1.	Prime Coat	PC	600
2.	Satin Chromium	26D	626
3.	Satin Stainless Steel	32D	630
4.	Clear Anodized	28	628
5.	Dull Chromium on Steel	- - -	652
6.	Spray Paint Aluminum	- - -	689

PART 3 - EXECUTION

3.01 INSPECTION

- A. Verify that doors and frames are ready to receive this work and that dimensions are as indicated on shop drawings.
- B. Verify that power supply is available to electrified devices.
- C. [Inspect Project to verify the extent of the finish hardware required to complete the work. Where there is a conflict between this Specification and the existing hardware, provide new finish hardware as specified in this Section.
- D. Do not begin installation until unsatisfactory conditions are corrected. Beginning installation means acceptance of existing conditions and preparatory work of others.

3.02 INSTALLATION

- A. Install hardware in accordance with manufacturers' instructions; using templates, fasteners, and supplies provided by or as recommended by item manufacturer and as follows. Conform to CBC11B, Sections 1133B.2.1 and 1133B.2.5.2 for accessibility requirements and to CBC-10 Sections 1003.3.1 and 1008.1.9.
 - 1. Hinges
 - a. Top hinge: 5 inches down from head of opening to top of hinge
 - b. Bottom hinge 10 inches up from door bottom to bottom of hinge
 - c. Intermediate hinges: spaced equally between top and bottom hinges
 - 2. Locksets: 40-5/16 inches from floor to centerline of lever handle.
 - 3. Exit Devices: 36- to 44-inches to bottom of bar or touch pad.
 - 4. Adjust door closers to have maximum opening resistance pressure as follows.
 - a. Interior Doors, other than fire doors: 5 pounds pressure (maximum)
 - b. Exterior Doors, other than fire doors: 5 pounds pressure (maximum)

- c. Fire Doors. Authorities Having Jurisdiction may increase the effort required to operate door, if necessary to achieve positive latching, subject to 15-lbf maximum.
 - 5. Resilient Wall Stop, locate to intercept door handle
 - 6. Kick Plates. Set plates level, approximately 1/8-inch above bottom of door and as follows.
 - a. Tops of plates visible collectively shall be in accurate alignment.
 - b. At single-leaf door: center plate on door leaf
 - c. At pairs of doors without mullion, set 1/2-inch from leading edge of door
 - d. At pairs of doors with edge guards, set 1-1/2-inches less than door leaf
 - 7. Exterior Thresholds. Set in full bed of mastic. Secure with non-ferrous fasteners.
 - 8. Interior Thresholds at sound control openings. Set in bed of mastic.
- B. After fitting hardware to doors, remove all finish hardware, carefully replace in properly marked boxes, and place in storage until painting and finishing is completed. After painting and finishing is completed, permanently install finish hardware. Comply with DHI-02 for installation of hardware.
 - C. Secure finish hardware with manufacturer's fasteners.
 - D. Provide expansion anchors for attaching hardware items to concrete or masonry as specified in Division 01.
 - E. Make provisions to prevent screws from working loose by using silicone sealant applied to screw tips, or other approved methods.

3.03 FIELD QUALITY ASSURANCE

- A. Completion Inspection. Hardware supplier's AHC shall provide the on-site services required to execute the specified warranties but, at least as follows. Prepare a written report upon the completion of each task.
 - 1. Attend the Pre-Installation Conference
 - 2. Observe the progress of the work
 - 3. Upon completion, inspect the work to verify hardware is complete and properly adjusted in accordance with both the Contract Documents and final Shop Drawings.
 - 4. Report findings, in writing, outlining corrective actions and recommendations; append executed warranties.

3.04 FINISH HARDWARE SETS

MANUFACTURER'S ABBREVIATIONS OF LISTED HARDWARE

[BE]	BEST
[MA]	MARKAR
[RO]	ROCKWOOD
[RW]	RICHARD WILCOX
[SA]	SARGENT
[ST]	STANLEY
[PE]	PEMKO

- a. Items listed in the following Finish Hardware Schedule shall conform to the specification. The last column in the hardware schedule refers to the manufacturer's abbreviation listed above.

SET #01 – Gate S101, S102

2 Continuous Hinge	FM300 MB Weld End Pins	630	MA
2 Shims	CHS-2		MA
1 Mullion	L980S	P	SA
1 Exit Device	CPC 16 19 43 70 8804 Less trim	630	SA
1 Exit Device	CPC 16 19 43 70 8810	630	SA
1 Core	1C7	626	BE
2 Anti-Vandal Pull	VRT-26	630	RO
2 Door Closer	CPS7500 SS	689	NO
4 Kick Plate	K1050 10" B4E CSK	630	RO

SET #02 – Gate S103

6 Hinge	BB855 5 x 6	600	ST
1 Slide Bolt	582-8	630	RO
2 Cane Bolt	524	630	RW
1 Padlock	21B	626	BE
1 Core	1C7	626	BE

END OF SECTION

SECTION 32 13 13

SITWORK CONCRETE

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes

1. Cast-In-Place concrete pedestrian paving and sidewalks.
2. Curbs and gutters.
3. Concrete stairs, ramps and landings.
4. Utility concrete pads.
5. Perimeter concrete curbing, mow strips, concrete drainage structures, swales.
6. Detectable Warnings

1.02 REFERENCES

- A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials.
- B. ACI 318 - Building Code Requirements for Structural Concrete and Commentary, 2008 Edition.
- C. ACI 301 - Structural Concrete for Buildings.
- D. ASTM - American Society for Testing and Materials
 1. ASTM A185 - Steel Welded Wire Reinforcement, Plain, for Concrete
 2. ASTM A615 - Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
 3. ASTM C33 - Concrete Aggregates
 4. ASTM C94 - Ready-Mixed Concrete
 5. ASTM C150 - Portland Cement
 6. ASTM C171 - Sheet Materials for Curing Concrete
 7. ASTM C309 - Liquid Membrane-Forming Compounds for Curing Concrete
 8. ASTM C618 – Coal Fly Ash and Raw or Calcinated Natural Pozzolan for use as a Mineral Admixture on Concrete
 9. ASTM C920 - Elastomeric Joint Sealants
 10. ASTM C979 - Pigments for Integrally Colored Concrete
 11. ASTM C1107 - Packaged Dry, Hydraulic - Cement Grout (Non-Shrink)
 12. ASTM D1751 - Preformed Expansion Joint Fillers for Concrete, Paving and Structural Construction
 13. ASTM E1980-11 – Solar Reflectance Index of Horizontal and Low-Sloped Opaque Surfaces.
- E. CBC - 2010 California Building Code and Supplements
 1. CBC-11 – CBC Chapter 11B, Accessibility to Public Buildings, Public Accommodations, Commercial Facilities and Publicly Funded Housing

2. CBC-17 – CBC Chapter 17, Structural Tests and Special Inspections
3. CBC-19 – CBC Chapter 19A, Concrete (for DSA)

1.03 SUBMITTALS

- A. Placement Schedule for approval: Provide details or sketches showing location of each placement of concrete Work. Do not deviate from location of expansion joints or scorelines.
- B. Design mix for each concrete mix.
- C. Steel reinforcement shop drawings, including materials, grade, bar schedules, spacing, bent bar diagrams, arrangement and supports.
- D. Submit contraction (crack control) joint, expansion, isolation and construction joint layout to Architect for approval.
- E. Product data on joint filler, sealants, curing compounds and reinforcing.
- F. Project Record Documents
 1. Accurately record actual locations of embedded sleeves, utilities and components that are concealed from view.
- F. Submit Certification of experience for Aggregate finisher.

1.04 REGULATORY REQUIREMENTS

- A. Pedestrian walks, plazas and paving shall comply with CBC-11B, Sections 1133B.7.1.1, and 1133B.7.2.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of all records on site.
- B. Acquire cement and aggregate from same source for all Work.
- C. Conform to Section 1905A.13, California Building Code, when placing concrete during hot weather.
- D. Conform to Section 1905A.12, California Building Code, when placing concrete during cold weather. No placement of concrete permitted below 50 degrees Fahrenheit.
- E. Mock-up
 1. Install minimum 5 feet by 5 feet mock-up of concrete sidewalk for each surface treatment specified.
 2. Install mock-up one month prior to installation.
 3. Locate as approved by the Architect.
 4. Use identical forming system, sub-grade type, reinforcing, expansion joints, score joints, finishing and edge trim as specified for installation.
 5. Architect approval required.
 6. Mock-up may not be used in final installation.
 7. Remove mock-up materials from site and dispose legally.

PART 2 - PRODUCTS

2.01 CONCRETE MATERIALS

- A. Cement: ASTM C150 - Type I - Normal or Type II - Moderate, Portland Cement type, from one manufacturing plant only.
- B. Aggregates: ASTM C33, single source for all materials. Maximum size aggregate: 1 inch.
- C. Non-Shrink Grout: ASTM C1107, premixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing agents; capable of developing minimum compressive strength of 4,000 psi in 24 hours and 7,500 psi in 7 days unless otherwise indicated on Drawings; of consistency suitable for application and a 30 minute working time.
- D. Crushed Aggregate Base: Crushed rock and rock dust conforming to requirements of Section 200-1.2, SSPWC, with 3/8 inch sieve requirement waived, or Class 2 aggregate base as defined in Section 26, CSS.

2.02 ACCESSORIES

- A. Expansion Joints:
 - 1. Fiber Expansion Joint Filler - ASTM D1751: Closed cell, 1/2 inch max. thick; FIBER EXPANSION JOINT by American Highway Technology, Kankakee, IL, DECK-O-FOAM by W. R. Meadows, Dayton Superior or approved equal.
 - 2. Joint Devices: Integral extruded polystyrene plastic; 1/2 inch max. thick, with removable top strip exposing sealant trough; JOINT CAPS.
 - 3. Sealant: Polyurethane two-component type, self-leveling, for level surface application, UREXPAN NR-200 or DYNATRED for sloped surfaces, manufactured by Pecora Corp., Harleysville PA, or equal. Color shall be selected by Architect from manufacturer's standard list of colors.
 - 4. Primer: As recommended by sealant manufacturer.
 - 5. Joint Backing: ASTM C1330, Cylindrical, Type C, closed cell, polyethylene backer rod; oversized 30 to 50 percent larger than joint width. Green Rod by Nomaco Inc. or equal.
- B. Slip Resistant Finish: Dry shake type aluminum oxide abrasive grains, hardness No. 9 on Mohr's scale; Emery Non-slip, manufactured by Dayton Superior, Kansas City, KS, Emery Aggregate manufactured by Oregon Emery Co., Halsey OR, or equal as approved in accordance with Division 01, General Requirements for Substitutions.
- C. Detectable Warning Texture: Division of the State Architect (DSA/Access Compliance) approved products shall be used, compliance with CBC Sections 1133B.8.3 through 1133B.8.5, IRs 11B-3 and 11B-4 and the California Accessibility Reference Manual.
 - 1. Truncated Domes: provide raised Detectable Warnings with diameter of 0.9 inch at base tapering to 0.45 inch at top, height of 0.2 inch, with center-to-center spacing of 1.67 inches and corner domes spaced at 0.896 inch from the corner edges of tile. Provide raised truncated domes in a square grid (in-line) pattern.

- a. Truncated Dome: shall contrast visually with adjoining surfaces, light-on-dark or dark-on-light. Material used to provide contrast shall be integral part of walking surface. Warning surface shall differ from adjoining surface in resiliency or sound to cane contact.
2. Detectable Warning Texture (Truncated Domes): Paver Tiles: 12 by 12 inches unless noted otherwise on drawings, with pre-formed fastener locations.

2.03 CONCRETE MIX

- A. Mix and deliver concrete in accordance with Section 1905A, California Building Code. Deliver concrete in transit mixers only. Mix concrete for 10 minutes minimum at a peripheral drum speed of approximately 200 feet per minute. Mix at jobsite minimum 3 minutes. Discharge loads in less than 1-1/2 hours or under 300 revolutions of the drum, whichever comes first, after water is first added.
 1. Design Mix:
 - a. Conform to Section 1905A.3, 2010 California Building Code for Proportioning on the basis of field experience or trial mixtures method.
 - b. Conform to Section 1905A.2 for Selection of concrete proportions method. Selection of concrete proportions and ingredients for design mix by a DSA-approved Testing Laboratory and certified by a registered civil engineer licensed in California.
 2. Do not exceed 0.50 water-cement ratio by weight for floor slabs and for other concrete.
 3. Quantities of Materials: Weighmaster's records not required for sitework concrete.
 4. Required Strength: Minimum 3,000 psi for sitework concrete.

2.04 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615; deformed billet steel bars, in grades as follows, and conforming to CBC-19, Section 1903A.
 1. For No. 4 and larger bars, use 60 ksi yield grade.
 2. For ties and stirrups, and No. 3 and smaller bars, use 40 ksi yield grade.
 3. For welded bars, use ASTM A706 60 ksi yield grade.
- B. Welded Wire Reinforcement: Plain type, ASTM A185; in flat sheets; uncoated finish, 6 x 6 - W4.0 x W4.0 unless otherwise note on drawings.
- C. Tie Wire: Annealed steel, minimum 16 gage size.
- D. Dowels: ASTM A615; 60 ksi yield grade, plain steel, uncoated finish.

2.05 FORMS

- A. Conform to Section 1906A.1 and 1906A.2, California Building Code.
- B. Plywood Forms: APA - Medium density overlay, Group 1, Exterior, PS-1, for exposed surfaces. APA Plyform B-B, Class 1, Exterior, PS-1 for unexposed surfaces.
 1. Use flexible or curved forms for curves with a radius 100 feet or less.
- C. Lumber: Douglas Fir species, construction grade, Surfaced Lumber, with grade stamp clearly visible for smooth and straight exposed surface.

- D. Form Release Agent; commercially formulated form-release agent that will not bond with, stain or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

2.06 CURING MATERIALS

- A. Polyethylene Film ASTM C171; 10 mil thick, clear, manufactured from virgin resin with no scrap or additives, manufactured by Burke-Edoco, Long Beach, CA, or equal as approved in accordance with Division 01, General Requirements for Substitutions.
- B. Water: Potable and not detrimental to concrete.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify site conditions.
- B. Verify requirements for concrete cover over reinforcement.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely and will not cause hardship in placing concrete.

3.02 PREPARATION

- A. Prepare previously placed concrete by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
- B. In locations where new concrete is doweled to existing Work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.

3.03 PLACING CONCRETE (GENERAL)

- A. Convey and deposit concrete in accordance with Section 1905A.9 and 1905A.10, California Building Code. Remove loose dirt from excavations.
- B. Notify Job Inspector minimum 24 hours prior to commencement of operations.
- C. Ensure reinforcement, inserts, embedded parts, formed joint fillers, joint devices and accessories are not disturbed during concrete placement.
- D. Ensure sub-base or base materials have been compacted or otherwise treated.
 - 1. Remove existing natural soils to depth required for sitework concrete thickness and elevations.
 - 2. Remove unsuitable soil, backfill with clean compactable soil or approve granular material to required elevations.
 - 3. Scarify exposed natural sub-base to depth of 6 inches. Bring to optimum moisture content and re-compact to 90 percent in accordance with ASTM D 1557.

4. Add approved aggregated base to required elevation in 6 inch maximum lifts. Bring to optimum moisture content and compact to 90 percent in accordance with ASTM D1557.
- E. Install joint fillers, primer and sealant in accordance with manufacturer's instructions.
- F. Place concrete continuously between predetermined expansion joints.
 1. Install expansion joints at vertical concrete walls at 24 feet on center unless noted otherwise on drawings.
- G. Do not interrupt successive placement; do not permit cold joints to occur. Avoid segregation of materials. Perform tamping and vibrating so as to produce a dense, smooth application free of rock pockets and voids. Do not use vibrators to move concrete horizontally.
- H. Do not allow concrete to fall free from any height which will cause materials to segregate. Maximum height of free fall permitted in any case: 5 feet.
- I. Defective Installation: Repair and clean at Contractor's expense all concrete damaged or discolored during construction. Where concrete requires repair before acceptance, the repair shall be made by removing and replacing entire section between joints and not by refinishing the damaged portion.
- J. Proper curing of concrete surfaces is the responsibility of the Contractor. Concrete failing to meet specified strength shall be removed and replaced.

3.04 ON-SITE CONCRETE SIDEWALKS, PEDESTRIAN PAVED AREAS AND RAMPS

- A. Forms, Wood: Free from warp, with smooth and straight upper edges, surfaced one side, minimum thickness 1-1/2 inches adequate to resist springing or deflection from placing concrete.
- B. Forms, Metal: Gage sufficient to provide rigidity and strength equivalent to wood.
- C. Reinforcing Steel: # 4 bars, place bars at 12 inches on center each way for sidewalks and paved areas and #4 bars for edges unless otherwise indicated on Drawings.
- D. Reinforcement: Provide welded steel wire fabric, 6 inches by 6 inches, No. 10 gage at middle of slab for sidewalks and ramps. Interrupt reinforcement at expansion joints.]
- E. Concrete Placement: Dampen subgrade to retain moisture in concrete mix. Tamp and spade to consolidate concrete for entire length of pour. Strike off upper surface to specified grades.
- F. Isolation Joints: Locate at slabs abutting vertical concrete surfaces and as patterned on drawings. Install vertically, full depth of concrete with preformed joint filler recessed for plastic cap at 1/2 inch depth at top for sealant application.
 1. Doweled Isolation Joints at Heavy Vehicle Driveways and Parking: At abutting building foundations; provide 1/2-inch diameter smooth steel dowels 14 inches long, one end of dowel lubricated and set in capped sleeve to allow for longitudinal movement, spaced at 24 inches on center maximum, 6 inches from edges.
 2. Monolithic Curb and Gutter: No expansion joints required between gutter and curb face.

- G. Expansion Joints: Locate maximum 24 feet centers and as patterned on drawings. Install vertically, full depth of concrete, install preformed joint filler recessed for plastic cap at 1/2 inch depth at top for sealant application.
 - 1. Monolithic Curb and Gutter: No expansion joints required between gutter and curb face.
 - H. Contraction/Crack Control Joints: At 8 feet each way at concrete paved areas, and 5 feet at sidewalks, tool joint with 1/2 inch radius, depth 1/4 the thickness of slab but not less than 1 inch deep. Refer to drawings for required design patterns.
 - I. Curb Ramps: Form grooves, flush to finished surfaces, 12" wide border. Grooves at 1/4" deep, 1/4" wide and at 3/4" on centers at 3 sides on level surface of the sidewalk. Provide patterns as indicated in drawings.
 - J. Finish:
 - 1. Screed concrete to required grade, float to a smooth, flat, uniform surface. Edge all headers to 1/2 inch radius. Edge expansion joints to 1/4 inch radius. Steel trowel to hard surface.
 - 2. Grades less than 6 percent: Conform to Section 1133B.7.1.1. Surfaces shall be at least as slip resistant as that described as a medium salted finish. After final troweling, apply a medium broom finish transverse to centerline or direction of traffic. Finish shall be at least as slip resistant as that described as a medium salted finish.
 - 3. Grades exceeding 6 percent: Conform to Section 1133B.7.1.2. Surfaces shall be slip-resistant. After final troweling, apply a heavy broom finish transverse to centerline or direction of traffic.
 - 4. Surface Cross slopes: surface cross slopes shall not exceed one unit vertical in 50 units horizontal (2-percent).
 - 5. Walkway grades in excess of 5 percent shall conform to requirements of Section 1133B.7.3 and 1133B.5, California Building Code.
 - K. Curing: Cure surfaces utilizing one of the following methods:
 - 1. Spraying: Spray water over slab areas and maintain wet for 7 days, use burlap mats.
 - 2. Spread polyethylene film over slab areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for 7 days.
 - 3. Apply liquid curing compound at rate of 200 sf per gallon, using power sprayer equipped with agitator. Do not apply liquid curing compound to surfaces scheduled to receive paving units of any kind.
 - L. Remove expansion joint plastic caps. Prime both sides of joint and apply self-leveling sealant per Section 07 92 00. Provide smooth concave surface.
- 3.05 CURB AND GUTTER, PERIMETER CONCRETE CURBING, MOW STRIPS
CONCRETE DRAINAGE STRUCTURES, SWALES
- A. Subgrade Preparation: Subgrade material, base material and compaction requirements as approved by the Geotechnical Engineer.

- B. Forms: Single face type required, cut to conform exactly with face batter and radius, sufficiently rigid to resist springing or deflection from concrete placement. Clean forms suitable material prior to concrete placement.
 - 1. Slip Forms: Contractor's option upon approval of the Architect.
- C. Reinforcement: Refer to drawings for size and spacing. Interrupt reinforcement at expansion joints.
- D. Concrete Placement: Dampen subgrade to retain moisture in concrete mix. Tamp and spade to consolidate concrete to entire length of pour. Strike off upper surface to specified grades. Cut drain pipes to conform to curb batter.
- E. Expansion Joints: Locate joint filler at maximum 20 foot centers. Trim off excess filler material flush to finish surface. No sealant application required.
- F. Control Joints: at 8 feet on center, tooled joints, 1/2 inch radius.
- G. Finish: Apply thin layer of mortar of 1 part portland cement to 1-1/2 parts sand to exposed faces. Trowel to a smooth and even finish with a fine hair broom applied parallel with the line of the work. Round all edges to 1/2 inch radius. No Contractor identification permitted.
- H. Curing: Cure surfaces utilizing one of the following methods:
 - 1. Spraying: Spray water over curb and gutter and maintain wet for 7 days.
 - 2. Spread polyethylene film over areas, lapping edges and sides, minimum 6 inches and sealing with pressure sensitive tape; cover with plywood or otherwise protect film from damage; maintain in place for 7 days.
 - 3. Apply liquid-curing compound at rate of 200 sf per gallon, using power sprayer equipped with agitator.

3.06 FINISH AT EXPOSED VERTICAL SURFACES

- A. Rubbed Finish: Apply the following to smooth-formed finished concrete per ACI 301:
 - 1. Grout-Cleaned Finish (Sack-rubbed finish): Remove fins, rough spots, stains, and hardened mortar by carefully rubbing with a fine abrasive stone to a smooth even surface. Wet concrete surfaces and apply grout of a consistency of thick paint to coat surfaces and fill small holes. Mix one part Portland cement to one and one-half parts fine sand with a 1:1 mixture of bonding admixture and water. Add white Portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces.
Scrub grout into voids and remove excess grout. When grout whitens, rub surface with clean burlap and keep surface damp by fog spray for at least 36 hours.
 - 2. Smooth-Rubbed Finish: Not later than one day after form removal, moisten concrete surfaces and rub with carborundum brick or another abrasive until producing a uniform color and texture. Do not apply cement grout other than that created by the rubbing process.

3. Cork-Floated Finish: Wet concrete surfaces and apply a stiff grout. Mix one part Portland cement and one part fine sand with a 1:1 mixture of bonding agent and water. Add white Portland cement in amounts determined by trial patches so color of dry grout will match adjacent surfaces. Compress grout into voids by grinding surface with slow-speed grinder. In a swirling motion, finish surface with a cork float.

3.07 TOLERANCES

- A. Construction tolerances shall not violate dimensions, grades, slopes required by CBC for accessibility requirements. Adjust work accordingly to comply with requirements.
- B. Comply with tolerances of ACI 117 and as follows (tolerances may not exceed CBC maximum or minimum):
 1. Tolerance for max slopes: Refer to Paragraph 3.04.J.1 through 5.
 2. Maximum deviation of 1/8 inch in 10 feet.
 2. Elevation: 1/4 inch (6 mm).
 3. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
 4. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1/8 inch (3 mm).
 5. Lateral Alignment and Spacing of Tie Bars and Dowels: 1 inch (25 mm).
 6. Vertical Alignment of Tie Bars and Dowels: 1/4 inch (6 mm).
 7. Alignment of Tie-Bar End Relative to Line Perpendicular to Pavement Edge: 1/2 inch (13 mm).
 8. Alignment of Dowel-Bar End Relative to Line Perpendicular to Pavement Edge: Length of dowel 1/4 inch per 12 inches (6 mm per 300 mm).
 9. Joint Spacing: 3 inches (75 mm).
 10. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
 11. Joint Width: Plus 1/8 inch (3 mm), no minus.

END OF SECTION

SECTION 32 17 23

PAVEMENT MARKINGS

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes

1. Traffic markings including symbols, directional arrows, lettering and safety and loading zones
2. Parking-stall lines and related accessibility pavement markings
3. Pedestrian and related accessibility pavement markings
4. Fire lane markings
5. Raised pavement markers

B. Related Sections

1. Section 32 12 16, Asphaltic Concrete Paving
2. Section 32 13 13, Sitework Concrete

1.02 ACRONYMS, ABBREVIATIONS AND DEFINITIONS

A. ADA – Americans with Disabilities Act of 1990, as amended

1. ADA Standards – ADA Title II Regulations and the 2010 ADA Standards for Accessible Design

B. ASTM - American Society for Testing and Materials

1. ASTM C 881 - Epoxy-Resin-Base Bonding Systems for Concrete
2. ASTM D 788 - Classification System for Poly(Methyl Methacrylate) (PMMA) Molding and Extrusion Compounds

C. SCAQMD - South Coast Air Quality Management District

1. SCAQMD-1113 - SCAQMD Rule 1113, Architectural Coatings
2. SCAQMD-1168 - SCAQMD Rule 1168, Adhesive and Sealant Applications

D. CALTrans - California Department of Transportation

1. CALTrans Manual - CALTrans Manual for Uniform Traffic Control Devices
2. CALTrans Specifications - CALTrans Standard Specifications

E. CBC – 2010 California Building Code (CCR Title 24, Part 2)

1. CBC-11B – CBC Chapter 11B, Access to Public Buildings, Public Accommodations, Commercial Facilities and Publicly Funded Housing

F. Fed.Std / Fed.Spec - Federal Standard / Federal Specification

1. Fed.Std-595B - Colors Listed in Government Procurement
2. Fed.Spec TT-P-1952D - Paint, Traffic And Airfield Marking, Waterborne

G. MUTCD - Department of Transportation, Manual for Uniform Traffic Control Devices

H. SSPWC - Standard Specifications for Public Works Construction

1.03 SUBMITTALS

- A. Record Submittals
 - 1. Manufacturer's Application Instructions

1.04 QUALITY ASSURANCE

- A. Paints and Coatings shall have VOC content within limits set by SCAQMD Regulations.
- B. Regulatory Requirements
 - 1. Pavement markings for designated accessible parking spaces and related pedestrian stripping shall conform to ADA Standards or CBC-11B whichever provides persons with disabilities greater protection.
 - 2. Traffic control pavement and curb markings shall be in accordance with SSPWC, Sections 210-1.6 and 310-5.6.
 - 3. Paint products shall dry to a finish as slip resistant as surrounding pavement.
 - 4. Detectable warning textures shall be as specified in Section 32 13 13.
- C. Manufacturer: company with minimum 10-years' experience manufacturing traffic line paint products for commercial projects similar in scale, complexity and quality to those required for this Project.
- D. Installer: company with minimum 6-years' experience painting traffic and related pavement markings for commercial projects similar in scale, complexity and quality to those required for this Project.
- E. Field Samples
 - 1. Provide field sample illustrating coating colors, width of stroke, thickness of application and dimensioning.
 - 2. Location: acceptable to Architect.
 - 3. Modify materials and methods of installation as required to obtain Architect's approval.
 - 4. Document materials and methods used to obtain Architect's approval. Maintain at least one copy of this documentation in a readily accessible location on Site while this work is in progress.
 - 5. Maintain access to and protect Field Samples from damage while this work is in progress.
 - 6. Upon acceptance of related work, Field Samples in acceptable condition may remain as part of the work.

1.05 DELIVERY, STORAGE AND HANDLING

- A. Deliver products to site in manufacturer's original, sealed containers with labels legible and intact.
 - 1. Labels shall include manufacturer's name, type of paint, brand name, brand code, coverage, surface preparation, drying time, cleanup, color designation and instructions for mixing and reducing.
 - 2. Inspect materials upon delivery for defects, missing, and non-complying items.
 - 3. Make claims, or place orders to obtain proper materials in a timely manner; do not delay the orderly progress of the work.

- B. Store paint materials at ambient temperatures between 45- and 90-degrees-F, unless expressly permitted otherwise in manufacturer's printed instructions.

1.06 MAINTENANCE

- A. For each color of pavement marking paint furnish, as Extra Material, a five-gallon unopened container of the paint.
 - 1. Extra Materials shall be from same production run as installed materials.
 - 2. In addition to manufacturer's label, label each container for color, dates and locations of related installations and shelf life.
 - 3. Deliver Extra Materials to Owner as directed.

1.07 REGULATORY REQUIREMENTS

- A. Accessible parking spaces shall be located as near as practical to a primary entrance and shall be marked according to CBC Sections 1129B.3 and 1129B.4.
- B. Surface slopes of accessible parking spaces and access aisles shall be the minimum possible and shall not exceed 2% slope in any direction. CBC Section 1129.B.3, Item 4.
- C. Loading and unloading access aisle shall be marked by a border painted blue. Within the blue border, hatched lines a maximum of 36" on center shall be painted a color contrasting with the parking surface, preferably blue or white. CBC Figures 11B-18A through 11B-18C.
- D. When blue color is used, it shall conform to Color No. 15090 per Federal Standard 595B.
- E. Painted lines and markings on pavement are recommended to be 3" wide minimum.

PART 2 - PRODUCTS

2.01 PAVEMENT MARKING PAINTS

- A. Acceptable Manufacturers. Products of following manufacturers form basis of design and quality intended for this Project.
 - 1. Dunn-Edwards Corporation, Los Angeles, CA
 - 2. Glidden Professional, Commerce, CA
 - 3. Frazee Paint and Wallcovering, Inc., Anaheim, CA
 - 4. Pervo Paint Company, Inc.
 - 5. Or equal, approved in accordance with Division 01 requirements for substitutions.
- B. Traffic Line Paint: lead and chromate free, ready mixed, waterbourne emulsion type, complying with Fed.Spec TT-P-1952D with drying time of less than 45 minutes. Furnish paints in containers of at least 18 L (5 gallons).
 - 1. Colors
 - a. Accessible Markings for Parking Stalls, Passenger Drop-Off Area and Related Markings: Fed.Std 595B, Color No. 15090, Blue, except that International Symbol of Access and NO PARKING notices marked on pavement shall be white.
 - b. Other Parking Stall Lines and Traffic Control markings: [white] [yellow].

- c. Fire Lane markings: red with white lettering.
 - d. Temporary Parking, markings: green with white lettering.
 - e. Passenger / Postal Loading Zones, markings: white with black lettering.
 - f. Commercial Loading Zone and Carpool Parking Space markings: yellow with black lettering.
2. Acceptable Products
- a. Dunn-Edwards, Vin-L-Stripe Traffic Marking Paint, W801, acrylic.
 - b. ICI, Traffic Paint 4800 Series, acrylic.
 - c. Frazee, No. 506 Traffic Line Paint
 - d. Pervo, Pervo Stripe Series 6000
 - e. Or equal
- C. Reflective Paint: SSPWC Table 210-1.6.1(A) and 210-1.6.5 rapid dry paint.
- 1. Reflective material: glass beads added to surface of final coat of paint prior to setting. Glass beads shall conform to Calif. State Specification 8010-004(type II), applied mechanically at 8 lbs of beads per gallon of paint, dispensed by device developed for the purpose.
 - a. For thermoplastic paint glass beads may be added to directly to the paint per 210-1.6.1 with additionally adding 1 pound of beads per gallon.
 - 2. Color: White, Yellow, or Black per Cal Trans Manual.
 - 3. Acceptable Products: by Emedco Buffalo, NY, or equal.]

2.02 ACCESSORIES

- A. Raised Pavement Markers: CALTrans Manual, Section 85, [Type A-non-reflective white] [Type AY-non-reflective yellow], ceramic disks (Bott's Dots).
- B. Raised Pavement Markers: rectangular, raised, 4- by 4- by 3/4-inch, ASTM D 788, Grade 8 high-impact, plastic highway pavement markers with beveled edges and dual prismatic, reflective lenses.
- 1. Reflector Color: [white] [amber] except furnish blue for fire hydrant marker location.
 - 2. Acceptable Products: Hy-Viz, or equal.
- C. Adhesive: ASTM C 881, Type IV Grade, 3, Class B epoxy type, rapid set, CALTrans Manual, Sections 85-1.055 and 95-2.04.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive Work as instructed by product manufacturer.
- B. Do not begin installation until unsatisfactory conditions are corrected. Beginning installation means acceptance of existing conditions including the preparatory work of others, if any.

3.02 PREPARATION

- A. Clean pavement in immediate vicinity of markings as directed by paint manufacturer.
 - 1. Surfaces to be painted shall be clean and free of dust, dirt, grease, oil, water or other contaminates.

2. Existing lines to be removed shall be sandblasted clean.

B. Do not apply traffic paint until seal coat has been in place minimum of 10 days.

3.01 APPLICATION

A. Apply paints by machine spray, airless sprayer, roller or brush to provide a minimum DFT of 15 mils. Precise edges are required; no overspray will be accepted.

1. Striping: single, 4 inch wide lines, unless double lines are shown on drawings.

B. Perform Work in accordance with approved Shop Drawings and with SSPWC Section 310-5.6.8.

1. Striping, pavement markings and curb markings shall be in accordance with SSPWC, Sections 210-1.6 and 310-5.6 and accessibility requirements, where applicable.

2. Passenger Loading Zone. Paint accessible passenger transfer area as indicated.

C. At Fire Lanes paint curbs, or if there is no curb, paint 6 inch red stripe and let dry. Then stencil 4-inch high lettering reading NO PARKING – FIRE LANE at maximum 20 feet on center on painted curb or stripe, as applicable.

D. At Temporary Parking, paint curbs and let dry. Then, stencil 4-inch lettering that reads TEMPORARY PARKING 20 MINUTES centered in each parking space.

E. At Loading Zone, paint curbs and let dry. Then, stencil 4-inch high lettering that reads LOADING ZONE – NO PARKING at maximum 30 feet on center on painted curb.

F. At Carpool Parking Spaces, paint wheel-stops and let dry. Then, stencil 3-inch high lettering that reads CARPOOL PARKING ONLY.

G. Install Raised Pavement Markers in accordance with CALTrans Manual, Section 85-1.06 with epoxy adhesive.

3.02 DEFECTIVE WORK

A. Remove any paint that demonstrates evidence of checking, cracking, peeling, discoloration, lack of bonding or poor coverage. Misplaced lines shall be completely removed by paint remover or wet abrasive-blasting in accordance with SSPWC, Section 310.5.6.3. Painting over misplaced lines will not be permitted. Provide new complying work without claim for change in Contract Sum or Schedule.

END OF SECTION